



# **Final Status Survey Final Report Phase VI**

**Appendix A6**  
**Survey Unit Release Record**  
**9522-0001, Southeast Site Grounds**  
**(Non-Protected Area)**

**February 2007**



# **SAMPLE DATA SUMMARY**

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis Report for

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: MSR#06-1549 GEL Work Order: 177540

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

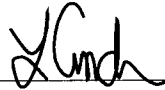
- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- ND The analyte concentration is not detected above the detection limit.

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

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

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

Reviewed by



# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-001F  
Sample ID: 177540001  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 29.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0168	+/-0.0162	0.0147	+/-0.0162	0.0314	pCi/g		KSDI	12/21/06	1601	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMBI	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	72	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	72	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.



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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-001F  
Sample ID: 177540001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mt
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UI Gamma Spectroscopy—Uncertain identification

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

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-002F  
Sample ID: 177540002  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 28.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0128	+/-0.0177	0.0162	+/-0.0177	0.036	pCi/g		KSD1	12/21/06	1601	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified
3	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-002F  
Sample ID: 177540002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mt
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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  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-003F  
Sample ID: 177540003  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 32.4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.042	+/-0.0207	0.0136	+/-0.0208	0.0304	pCi/g		KSD1	12/22/06	1204	597316	1

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### **The following Analytical Methods were performed**

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	72	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	72	(25%-125%)

### **Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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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: December 22, 2006

Client Sample ID: 9522-0001-003F  
Sample ID: 177540003

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

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

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-004F  
Sample ID: 177540004  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 42%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0319	+/-0.0236	0.017	+/-0.0236	0.0376	pCi/g		KSD1	12/22/06	1204	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified
3	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	59	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	59	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

\* A quality control analyte recovery is outside of specified acceptance criteria

< Result is less than value reported

> Result is greater than value reported

A The TIC is a suspected aldol-condensation product

B Target analyte was detected in the associated blank

BD Results are either below the MDC or tracer recovery is low

C Analyte has been confirmed by GC/MS analysis

D Results are reported from a diluted aliquot of the sample

H Analytical holding time was exceeded

J Value is estimated

N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more

R Sample results are rejected

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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: December 22, 2006

Client Sample ID: 9522-0001-004F  
Sample ID: 177540004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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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  
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: December 22, 2006

Client Sample ID: 9522-0001-005F  
Sample ID: 177540005  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 38.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0179	+/-0.0179	0.0133	+/-0.0179	0.0296	pCi/g		KSDI	12/22/06	1204	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified
3	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	73	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	73	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected



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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: December 22, 2006

Client Sample ID: 9522-0001-005F  
Sample ID: 177540005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
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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  
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: December 22, 2006

Client Sample ID: 9522-0001-006F  
Sample ID: 177540006  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 44.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.159	+/-0.0263	0.012	+/-0.0266	0.0264	pCi/g		KSD1	12/22/06	1204	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified
3	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	88	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	88	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-006F  
Sample ID: 177540006

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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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  
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: December 22, 2006

Client Sample ID: 9522-0001-009F  
Sample ID: 177540007  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 12.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.000197	+/-0.0178	0.0149	+/-0.0178	0.0327	pCi/g		KSD1	12/21/06	1602	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	82	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	82	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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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: December 22, 2006

Client Sample ID: 9522-0001-009F  
Sample ID: 177540007

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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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: December 22, 2006

Client Sample ID: 9522-0001-010F  
Sample ID: 177540008  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 29.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0288	+/-0.0241	0.0173	+/-0.0241	0.0388	pCi/g		KSD1	12/21/06	1608	597316	

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	74	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	74	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-010F  
Sample ID: 177540008

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

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

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-011F  
Sample ID: 177540009  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 18.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.00662	+/-0.0149	0.0131	+/-0.0149	0.0289	pCi/g		KSD1	12/22/06	1204	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.



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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: December 22, 2006

Client Sample ID: 9522-0001-011F  
Sample ID: 177540009

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

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

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-012F  
Sample ID: 177540010  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 12.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.037	+/-0.0177	0.0118	+/-0.0177	0.026	pCi/g		KSDI	12/22/06	1204	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMBI	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	88	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	88	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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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: December 22, 2006

Client Sample ID: 9522-0001-012F  
Sample ID: 177540010

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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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: December 22, 2006

Client Sample ID: 9522-0001-013F  
Sample ID: 177540011  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
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	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0335	+/-0.0235	0.0139	+/-0.0235	0.0343	pCi/g		KSD1	12/21/06	1658	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified
3	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	81	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	81	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more

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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: December 22, 2006

Client Sample ID: 9522-0001-013F  
Sample ID: 177540011

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
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- 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  $\pm$ 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: December 22, 2006

Client Sample ID: 9522-0001-015F  
Sample ID: 177540012  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 12%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.000807	+/-0.0199	0.0166	+/-0.0199	0.0381	pCi/g		KSD1	12/21/06	1658	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified
3	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected

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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: December 22, 2006

Client Sample ID: 9522-0001-015F  
Sample ID: 177540012

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtc
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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  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-016F  
Sample ID: 177540013  
Matrix: TS  
Collect Date: 15-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 23.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.00289	+/-0.0178	0.0153	+/-0.0178	0.0354	pCi/g		KSDI	12/21/06	1859	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified
3	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	105	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	105	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected



# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-016F  
Sample ID: 177540013

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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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  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-021-I  
Sample ID: 177540014  
Matrix: TS  
Collect Date: 16-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 16.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0164	+/-0.0169	0.0112	+/-0.0169	0.0275	pCi/g		KSD1	12/21/06	1859	597316	1

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### **The following Analytical Methods were performed**

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	100	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	100	(25%-125%)

### **Notes:**

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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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: December 22, 2006

Client Sample ID: 9522-0001-021-I  
Sample ID: 177540014

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

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

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-024-I  
Sample ID: 177540015  
Matrix: TS  
Collect Date: 21-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 44.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.026	+/-0.0185	0.0119	+/-0.0185	0.0281	pCi/g		KSDI	12/22/06	1205	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified
3	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	105	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	105	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0001-024-1  
Sample ID: 177540015

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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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  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0002-002F  
Sample ID: 177540016  
Matrix: TS  
Collect Date: 30-OCT-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 18.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0095	+/-0.0171	0.0158	+/-0.0171	0.0366	pCi/g		KSD1	12/21/06	1859	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified
3	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	104	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	104	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0002-002F  
Sample ID: 177540016

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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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  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0002-003F  
Sample ID: 177540017  
Matrix: TS  
Collect Date: 30-OCT-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 14.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.00348	+/-0.0155	0.0125	+/-0.0155	0.0292	pCi/g		KSD1	12/22/06	1205	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified
3	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	107	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	107	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected



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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: December 22, 2006

Client Sample ID: 9522-0002-003F  
Sample ID: 177540017

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

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

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: December 22, 2006

Client Sample ID: 9522-0002-005F  
Sample ID: 177540018  
Matrix: TS  
Collect Date: 30-OCT-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 17.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0267	+/-0.0237	0.0168	+/-0.0237	0.0384	pCi/g		KSD1	12/21/06	1900	597316	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified
3	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	109	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	109	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected

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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: December 22, 2006

Client Sample ID: 9522-0002-005F  
Sample ID: 177540018

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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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  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0002-007F  
Sample ID: 177540019  
Matrix: TS  
Collect Date: 30-OCT-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 20.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.00433	+/-0.0171	0.0137	+/-0.0171	0.0322	pCi/g		KSD1	12/21/06	1900	597316	

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified
3	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	107	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	107	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected

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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: December 22, 2006

Client Sample ID: 9522-0002-007F  
Sample ID: 177540019

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
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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  
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: December 22, 2006

Client Sample ID: 9522-0002-008F  
Sample ID: 177540020  
Matrix: TS  
Collect Date: 30-OCT-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 28.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0235	+/-0.0229	0.0164	+/-0.0229	0.0375	pCi/g	KSD1	12/21/06	1900	597316		

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1340	595082

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified
3	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	107	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	107	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected

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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: December 22, 2006

Client Sample ID: 9522-0002-008F  
Sample ID: 177540020

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
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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  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0002-010F  
Sample ID: 177540021  
Matrix: TS  
Collect Date: 30-OCT-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 9.97%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.0584	+/-0.0287	0.0155	+/-0.0288	0.0374	pCi/g		KSD1	12/15/06	1439	595174	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	72	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	72	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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



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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: December 22, 2006

Client Sample ID: 9522-0002-010F  
Sample ID: 177540021

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0002-011F  
Sample ID: 177540022  
Matrix: TS  
Collect Date: 30-OCT-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 20.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0187	+/-0.0244	0.021	+/-0.0244	0.0433	pCi/g		KSD1	12/15/06	1823	595174	1

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### **The following Analytical Methods were performed**

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	65	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	65	(25%-125%)

### **Notes:**

The Qualifiers in this report are defined as follows :

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

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0002-011F  
Sample ID: 177540022

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

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

Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0002-012F  
Sample ID: 177540023  
Matrix: TS  
Collect Date: 30-OCT-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 23%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0332	+/-0.0184	0.018	+/-0.0184	0.0387	pCi/g		KSD1	12/15/06	1823	595174	1

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### **The following Analytical Methods were performed**

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	65	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	65	(25%-125%)

### **Notes:**

The Qualifiers in this report are defined as follows :

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

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0002-012F  
Sample ID: 177540023

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

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

Y QC Samples were not spiked with this compound.  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0002-013F  
Sample ID: 177540024  
Matrix: TS  
Collect Date: 30-OCT-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 22.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.0663	+/-0.0236	0.0154	+/-0.0237	0.0335	pCi/g		KSD1	12/15/06	1823	595174	

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### **The following Analytical Methods were performed**

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)

### **Notes:**

The Qualifiers in this report are defined as follows :

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

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0002-013F  
Sample ID: 177540024

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
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Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0002-014F  
Sample ID: 177540025  
Matrix: TS  
Collect Date: 30-OCT-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 22.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.122	+/-0.0325	0.0134	+/-0.0327	0.0319	pCi/g		KSD1	12/15/06	1824	595174	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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



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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: December 22, 2006

Client Sample ID: 9522-0002-014F  
Sample ID: 177540025

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

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

Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0002-016F  
Sample ID: 177540026  
Matrix: TS  
Collect Date: 30-OCT-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 42.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0131	+/-0.0182	0.0139	+/-0.0182	0.0311	pCi/g		KSDI	12/15/06	1824	595174	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	79	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	79	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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

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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: December 22, 2006

Client Sample ID: 9522-0002-016F  
Sample ID: 177540026

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

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

Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-001F  
Sample ID: 177540027  
Matrix: TS  
Collect Date: 03-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 5.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0111	+/-0.0195	0.0156	+/-0.0195	0.0337	pCi/g		KSD1	12/15/06	1824	595174	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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

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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: December 22, 2006

Client Sample ID: 9522-0003-001F  
Sample ID: 177540027

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-002F  
Sample ID: 177540028  
Matrix: TS  
Collect Date: 03-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 8.78%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.121	+/-0.0277	0.0158	+/-0.028	0.0344	pCi/g		KSD1	12/15/06	1824	595174	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### The following Analytical Methods were performed

Method	Description
I	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	74	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	74	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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

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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: December 22, 2006

Client Sample ID: 9522-0003-002F  
Sample ID: 177540028

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

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

Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-003F  
Sample ID: 177540029  
Matrix: TS  
Collect Date: 03-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 19.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.0478	+/-0.0239	0.0163	+/-0.024	0.0359	pCi/g		KSDI	12/15/06	1824	595174	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	69	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	69	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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



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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: December 22, 2006

Client Sample ID: 9522-0003-003F  
Sample ID: 177540029

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

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

Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-004F  
Sample ID: 177540030  
Matrix: TS  
Collect Date: 03-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 19.6%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.0504	+/-0.0263	0.0167	+/-0.0263	0.038	pCi/g		KSD1	12/15/06	1824	595174	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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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: December 22, 2006

Client Sample ID: 9522-0003-004F  
Sample ID: 177540030

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

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

Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-005F  
Sample ID: 177540031  
Matrix: TS  
Collect Date: 03-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 9.28%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.0377	+/-0.0217	0.0146	+/-0.0217	0.0327	pCi/g		KSD1	12/15/06	1824	595174	1

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### **The following Analytical Methods were performed**

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)

### **Notes:**

The Qualifiers in this report are defined as follows :

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

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-005F  
Sample ID: 177540031

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

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

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-007F  
Sample ID: 177540032  
Matrix: TS  
Collect Date: 03-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 19.4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0227	+/-0.0165	0.0153	+/-0.0165	0.0328	pCi/g		KSD1	12/15/06	1824	595174	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	77	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	77	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-007F  
Sample ID: 177540032

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-008F  
Sample ID: 177540033  
Matrix: TS  
Collect Date: 03-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 26.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.0447	+/-0.0138	0.0102	+/-0.0139	0.0212	pCi/g		KSD1	12/15/06	1929	595174	1

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### **The following Analytical Methods were performed**

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	73	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	73	(25%-125%)

### **Notes:**

The Qualifiers in this report are defined as follows :

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



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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: December 22, 2006

Client Sample ID: 9522-0003-008F  
Sample ID: 177540033

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

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

Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using  $\pm$ RL. Concentrations are  $<5X$  the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-009F  
Sample ID: 177540034  
Matrix: TS  
Collect Date: 06-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 10.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.024	+/-0.0122	0.00949	+/-0.0122	0.0197	pCi/g		KSD1	12/15/06	1928	595174	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	74	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	74	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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

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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: December 22, 2006

Client Sample ID: 9522-0003-009F  
Sample ID: 177540034

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

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

Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-010F  
Sample ID: 177540035  
Matrix: TS  
Collect Date: 06-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 4.79%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.00579	+/-0.0111	0.00953	+/-0.0111	0.0198	pCi/g		KSDI	12/15/06	1928	595174	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	72	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	72	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-010F  
Sample ID: 177540035

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
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Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-011F  
Sample ID: 177540036  
Matrix: TS  
Collect Date: 06-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 8.03%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.00757	+/-0.0129	0.0111	+/-0.0129	0.0229	pCi/g		KSD1	12/15/06	1928	595174	1

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### **The following Analytical Methods were performed**

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	73	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	73	(25%-125%)

### **Notes:**

The Qualifiers in this report are defined as follows :

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

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-011F  
Sample ID: 177540036

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-012F  
Sample ID: 177540037  
Matrix: TS  
Collect Date: 06-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 12.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0083	+/-0.0114	0.00982	+/-0.0114	0.0204	pCi/g		KSDI	12/15/06	1928	595174	1

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### **The following Analytical Methods were performed**

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)

### **Notes:**

The Qualifiers in this report are defined as follows :

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



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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: December 22, 2006

Client Sample ID: 9522-0003-012F  
Sample ID: 177540037

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
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Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-013F  
Sample ID: 177540038  
Matrix: TS  
Collect Date: 06-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 14.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.00789	+/-0.00969	0.00786	+/-0.00969	0.0163	pCi/g		KSD1	12/15/06	1928	595174	1

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### **The following Analytical Methods were performed**

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	87	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	87	(25%-125%)

### **Notes:**

The Qualifiers in this report are defined as follows :

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

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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: December 22, 2006

Client Sample ID: 9522-0003-013F  
Sample ID: 177540038

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis..

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-014F  
Sample ID: 177540039  
Matrix: TS  
Collect Date: 06-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 4.71%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0145	+/-0.0102	0.0091	+/-0.0102	0.0189	pCi/g		KSD1	12/15/06	1928	595174	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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

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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: December 22, 2006

Client Sample ID: 9522-0003-014F  
Sample ID: 177540039

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

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

Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-015F  
Sample ID: 177540040  
Matrix: TS  
Collect Date: 06-NOV-06  
Receive Date: 10-NOV-06  
Collector: Client  
Moisture: 4.81%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.00651	+/-0.0168	0.0142	+/-0.0168	0.0292	pCi/g		KSD1	12/15/06	1928	595174	

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1237	595084

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	82	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	82	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0003-015F  
Sample ID: 177540040

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0004-001F  
Sample ID: 177540041  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 6.28%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
GFPC, Sr90, solid-ALL FSS Strontium-90	U	0.0197	+/-0.0223	0.017	+/-0.0224	0.0375	pCi/g		KSD1	12/19/06	1849	595177	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	72	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	72	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.



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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: December 22, 2006

Client Sample ID: 9522-0004-001F  
Sample ID: 177540041

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
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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: December 22, 2006

Client Sample ID: 9522-0004-002F  
Sample ID: 177540042  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 3.79%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.0804	+/-0.0265	0.0163	+/-0.027	0.0358	pCi/g		KSDI	12/19/06	1849	595177	

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	77	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	77	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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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: December 22, 2006

Client Sample ID: 9522-0004-002F  
Sample ID: 177540042

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

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

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0004-003F  
Sample ID: 177540043  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 3.6%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0236	+/-0.0222	0.0167	+/-0.0223	0.0367	pCi/g		KSDI	12/18/06	1819	595177	1

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### **The following Analytical Methods were performed**

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	77	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	77	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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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: December 22, 2006

Client Sample ID: 9522-0004-003F  
Sample ID: 177540043

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
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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: December 22, 2006

Client Sample ID: 9522-0004-005F  
Sample ID: 177540045  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 5.44%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.0234	+/-0.0195	0.017	+/-0.0195	0.0349	pCi/g		KSD1	12/14/06	2006	595177	

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### **The following Analytical Methods were performed**

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	68	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	68	(25%-125%)

### **Notes:**

The Qualifiers in this report are defined as follows :

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

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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: December 22, 2006

Client Sample ID: 9522-0004-005F  
Sample ID: 177540045

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0004-006F  
Sample ID: 177540046  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 4.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.00284	+/-0.0147	0.0123	+/-0.0147	0.0253	pCi/g		KSD1	12/15/06	1854	595177	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### The following Analytical Methods were performed

Method	Description
I	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	77	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	77	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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



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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: December 22, 2006

Client Sample ID: 9522-0004-006F  
Sample ID: 177540046

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
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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: December 22, 2006

Client Sample ID: 9522-0004-008F  
Sample ID: 177540047  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 6.58%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0368	+/-0.0239	0.0174	+/-0.024	0.0378	pCi/g		KSD1	12/18/06	1819	595177	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	77	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	77	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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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: December 22, 2006

Client Sample ID: 9522-0004-008F  
Sample ID: 177540047

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

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

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: December 22, 2006

Client Sample ID: 9522-0004-009F  
Sample ID: 177540048  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 9.4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0343	+/-0.024	0.0182	+/-0.0241	0.0388	pCi/g		KSDI	12/15/06	0844	595177	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy—Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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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: December 22, 2006

Client Sample ID: 9522-0004-009F  
Sample ID: 177540048

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

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

Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0004-010F  
Sample ID: 177540049  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 5.53%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.019	+/-0.025	0.020	+/-0.0251	0.0424	pCi/g		KSD1	12/15/06	0844	595177	1

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### **The following Analytical Methods were performed**

Method	Description
I	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	75	(25%-125%)

### **Notes:**

The Qualifiers in this report are defined as follows :

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

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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: December 22, 2006

Client Sample ID: 9522-0004-010F  
Sample ID: 177540049

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
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Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0004-011F  
Sample ID: 177540050  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 8.26%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.0296	+/-0.0187	0.0131	+/-0.0188	0.029	pCi/g		KSD1	12/18/06	1819	595177	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	87	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	87	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.



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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: December 22, 2006

Client Sample ID: 9522-0004-011F  
Sample ID: 177540050

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

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

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0004-012F  
Sample ID: 177540051  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 68.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0196	+/-0.024	0.019	+/-0.024	0.0405	pCi/g		KSDI	12/15/06	0817	595177	1

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### **The following Analytical Methods were performed**

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	83	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	83	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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

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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: December 22, 2006

Client Sample ID: 9522-0004-012F  
Sample ID: 177540051

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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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: December 22, 2006

Client Sample ID: 9522-0004-013F  
Sample ID: 177540052  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 78.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	-0.00038	+/-0.0211	0.0177	+/-0.0211	0.0385	pCi/g		KSD1	12/18/06	1819	595177	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	79	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	79	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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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: December 22, 2006

Client Sample ID: 9522-0004-013F  
Sample ID: 177540052

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

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

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0004-014F  
Sample ID: 177540053  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 51.1%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtd
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0195	+/-0.0171	0.0138	+/-0.0171	0.0284	pCi/g		KSD1	12/15/06	1854	595177	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy—Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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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: December 22, 2006

Client Sample ID: 9522-0004-014F  
Sample ID: 177540053

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

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

Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0004-015F  
Sample ID: 177540054  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 10.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0359	+/-0.0237	0.0166	+/-0.0238	0.0369	pCi/g		KSD1	12/18/06	1833	595177	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
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
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.



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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: December 22, 2006

Client Sample ID: 9522-0004-015F  
Sample ID: 177540054

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

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

UI Gamma Spectroscopy—Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0004-016F  
Sample ID: 177540055  
Matrix: TS  
Collect Date: 22-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 14.8%

Project: YANK01204  
Client ID: YANK001  
Vol. Recv.: 2

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.00675	+/-0.0157	0.013	+/-0.0157	0.0268	pCi/g		KSDI	12/15/06	1854	595177	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/12/06	1224	595086

### The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium-90	GFPC, Sr90, solid-ALL FSS	68	(25%-125%)
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL FSS	68	(25%-125%)

### Notes:

The Qualifiers in this report are defined as follows :

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

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 22, 2006

Client Sample ID: 9522-0004-016F  
Sample ID: 177540055

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

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

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

# GENERAL ENGINEERING LABORATORIES, LLC

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

## QC Summary

Report Date: December 22, 2006

Page 1 of 2

Client : Connecticut Yankee Atomic Power  
362 Injun Hollow Rd

Contact: East Hampton, Connecticut  
Mr. Jack McCarthy

Workorder: 177540

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gas Flow</b>											
Batch	595174										
QC1201245013	177540021	DUP									
Strontium-90		0.0584		0.141	pCi/g	83*		(0% - 100%)	KSD1	12/15/06	14:39
		Uncert:	+/-0.0287	+/-0.0374							
		TPU:	+/-0.0288	+/-0.0375							
QC1201245015	LCS										
Strontium-90		1.58		1.68	pCi/g		107	(75%-125%)		12/15/06	20:06
		Uncert:		+/-0.153							
		TPU:		+/-0.161							
QC1201245012	MB										
Strontium-90			U	-0.0237	pCi/g					12/15/06	19:33
		Uncert:		+/-0.0106							
		TPU:		+/-0.0106							
QC1201245014	177540021	MS									
Strontium-90		5.15	0.0584	5.07	pCi/g		97	(75%-125%)		12/15/06	20:06
		Uncert:	+/-0.0287	+/-0.459							
		TPU:	+/-0.0288	+/-0.482							
Batch	595177										
QC1201245021	177540041	DUP									
Strontium-90			U	0.0197	pCi/g	0		(0% - 100%)	KSD1	12/18/06	14:48
		Uncert:	+/-0.0223	+/-0.0185							
		TPU:	+/-0.0224	+/-0.0185							
QC1201245023	LCS										
Strontium-90		1.58		1.58	pCi/g		100	(75%-125%)		12/14/06	17:39
		Uncert:		+/-0.121							
		TPU:		+/-0.250							
QC1201245020	MB										
Strontium-90			U	0.00173	pCi/g					12/18/06	18:33
		Uncert:		+/-0.0167							
		TPU:		+/-0.0167							
QC1201245022	177540041	MS									
Strontium-90		4.92	U	0.0197	pCi/g		107	(75%-125%)		12/15/06	08:09
		Uncert:	+/-0.0223	+/-0.360							
		TPU:	+/-0.0224	+/-0.483							
Batch	597316										
QC1201250080	177540001	DUP									
Strontium-90			U	-0.0168	pCi/g	2		(0% - 100%)	KSD1	12/22/06	12:05
		Uncert:	+/-0.0162	+/-0.0186							
		TPU:	+/-0.0162	+/-0.0186							
QC1201250082	LCS										
Strontium-90		1.46		1.43	pCi/g		98	(75%-125%)		12/21/06	20:14
		Uncert:		+/-0.0938							
		TPU:		+/-0.102							
QC1201250079	MB										
Strontium-90			U	-0.00679	pCi/g					12/21/06	19:01

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## QC Summary

Workorder: 177540

Page 2 of 2

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow										
Batch	597316									
		Uncert:	+/-0.0159							
		TPU:	+/-0.0159							
QC1201250081 177540001 MS										
Strontium-90	4.25	U	-0.0168	3.52	pCi/g	83	(75%-125%)		12/21/06	20:14
		Uncert:	+/-0.0162	+/-0.245						
		TPU:	+/-0.0162	+/-0.257						

### Notes:

The Qualifiers in this report are defined as follows:

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

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

\*\* Indicates analyte is a surrogate compound.

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

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

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

SOUTHEAST SITE GROUNDS (NON-PROTECTED AREA)

SURVEY UNIT 9522-0001

RELEASE RECORD

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

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

RELEASE RECORD

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



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

PRELIMINARY DATA REVIEW

RELEASE RECORD  
Attachment 4

**Survey Unit:** 9522-0001  
**Area Description** Southeast Grounds (non-protected)  
**Classification** 2  
**Survey Media** Surface Soils  
**Type of Survey** Final Status Survey  
**Number of Measurements** 15 Static, 8 Investigative

**STATISTICS on TOTAL  
POPULATION**

	<b>Cs-137</b>	<b>Co-60</b>	<b>Sr-90</b>
<b>DCGL<sub>op</sub> (pCi/g):</b>	5.38E+00	2.59E+00	1.05E+00
<b>Minimum Value:</b>	0.00E+00	-1.47E-02	-1.28E-02
<b>Maximum Value:</b>	3.08E+00	5.70E-02	7.66E-01
<b>Mean:</b>	4.20E-01	1.29E-02	7.65E-02
<b>Median:</b>	1.70E-01	1.18E-02	2.88E-02
<b>Standard Deviation:</b>	6.49E-01	1.75E-02	1.95E-01
<b>DCGL<sub>sur</sub> (pCi/g):</b>	2.80E+00		

**STATISTICS on NON-  
PARAMETRIC POPULATION**

	<b>Cs-137</b>	<b>Co-60</b>	<b>Sr-90</b>
<b>DCGL<sub>op</sub> (pCi/g):</b>	5.38E+00	2.59E+00	1.05E+00
<b>Minimum Value:</b>	2.77E-02	-7.76E-03	-1.28E-02
<b>Maximum Value:</b>	3.08E+00	5.70E-02	7.66E-01
<b>Mean:</b>	5.70E-01	1.32E-02	7.65E-02
<b>Median:</b>	2.91E-01	1.15E-02	2.88E-02
<b>Standard Deviation:</b>	7.72E-01	1.90E-02	1.95E-01
<b>Nuclide Distribution:</b>	0.841	0.008	0.151

Sample ID	GPS Coordinates		Cs-137				Co-60				Sr-90				Fraction of DCGL
			Result	2σ	MDA	Identified	Result	2σ	MDA	Identified	Result	2σ	MDA	Identified	
	North	East	(pCi/g)		(pCi/g)		(pCi/g)		(pCi/g)		(pCi/g)		(pCi/g)		
9522-0001-001F	236516.39	669283.45	6.77E-01	0.098	5.13E-02	+	-1.86E-04	0.028	5.31E-02		1.68E-02	0.016	3.14E-02	+	0.142
9522-0001-002F	236516.39	669359.45	6.66E-01	0.068	6.00E-02	+	2.40E-02	0.029	6.07E-02		-1.28E-02	0.018	3.60E-02		0.121
9522-0001-003F	236450.56	669321.45	1.17E+00	0.117	7.77E-02	+	-2.28E-03	0.055	9.96E-02		4.20E-02	0.021	3.04E-02	+	0.257
9522-0001-004F	236450.56	669397.46	6.37E-01	0.060	2.75E-02	+	2.27E-02	0.016	3.09E-02	+	3.19E-02	0.024	3.76E-02	+	0.158
9522-0001-005F	236384.73	669283.45	8.24E-01	0.106	4.89E-02	+	5.08E-02	0.026	6.05E-02	+	1.79E-02	0.018	2.96E-02	+	0.190
9522-0001-006F	236384.73	669359.45	3.08E+00	0.251	4.34E-02	+	5.70E-02	0.047	3.99E-02	+	1.59E-01	0.026	2.64E-02	+	0.746
9522-0001-008F	236318.91	669397.46	2.23E-01	0.038	3.09E-02	+	3.85E-03	0.020	3.91E-02		3.61E-02	0.031	4.95E-02	+	0.077
9522-0001-009F	236253.08	669283.45	1.16E-01	0.034	3.53E-02	+	-3.91E-03	0.020	3.73E-02		1.97E-04	0.018	3.27E-02		0.020
9522-0001-0010F	236253.08	669359.45	2.39E-01	0.041	4.00E-02	+	-7.76E-03	0.023	3.43E-02		2.88E-02	0.024	3.88E-02	+	0.069

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

PRELIMINARY DATA REVIEW

RELEASE RECORD  
Attachment 4

Sample ID	GPS Coordinates		Cs-137				Co-60				Sr-90				Fraction of DCGL
			Result (pCi/g)	2σ	MDA (pCi/g)	Identified	Result (pCi/g)	2σ	MDA (pCi/g)	Identified	Result (pCi/g)	2σ	MDA (pCi/g)	Identified	
9522-0001-0011F	236253.08	669435.46	1.17E-01	0.031	3.63E-02	+	1.32E-02	0.022	4.28E-02		-6.62E-03	0.015	2.89E-02		0.021
9522-0001-0012F	236187.25	669245.44	5.04E-02	0.044	3.93E-02	+	1.22E-02	0.023	4.60E-02		3.70E-02	0.018	2.60E-02	+	0.049
9522-0001-0013F	236187.25	669321.45	2.77E-02	0.022	4.74E-02	+	3.35E-03	0.025	4.98E-02		3.35E-02	0.024	3.43E-02	+	0.038
9522-0001-0014F	236187.25	669397.46	2.91E-01	0.064	4.11E-02	+	0.00E+00	0.016	2.67E-02		7.66E-01	0.116	7.19E-02	+	0.784
9522-0001-0015F	236121.43	669359.45	4.11E-02	0.045	8.57E-02		1.38E-02	0.045	8.44E-02		8.07E-04	0.020	3.81E-02		0.014
9522-0001-0016F	236308.33	669394.58	3.89E-01	0.049	3.63E-02	+	1.15E-02	0.043	3.89E-02		-2.89E-03	0.018	3.54E-02		0.074
9522-0001-009FS	236253.08	669283.45	1.01E-01	0.035	3.16E-02	+	6.98E-03	0.028	3.84E-02						0.021
9522-0001-0017-I	236136.88	669384.53	0.00E+00	0.048	4.51E-02		1.28E-02	0.030	5.01E-02						0.005 *
9522-0001-0018-I	236124.11	669364.90	8.04E-02	0.048	5.56E-02	+	1.20E-02	0.031	4.24E-02						0.033 *
9522-0001-0019-I	236093.52	669367.74	4.95E-02	0.042	4.99E-02	+	4.30E-02	0.043	5.23E-02	+					0.034 *
9522-0001-0020-I	236106.07	669351.31	3.56E-02	0.019	2.67E-02	+	4.71E-03	0.014	2.82E-02						0.015 *
9522-0001-0021-I	236255.72	669254.25	5.19E-01	0.063	3.27E-02	+	2.53E-02	0.019	3.82E-02	+					0.195 *
9522-0001-0022-I	236251.53	669261.17	6.53E-02	0.024	3.28E-02	+	1.79E-02	0.018	3.49E-02	+					0.030 *
9522-0001-0023-I	236246.38	669269.80	5.50E-02	0.030	4.23E-02	+	-1.47E-02	0.023	3.86E-02						0.014 *
9522-0001-0024-I	236414.93	669427.88	6.30E-01	0.062	4.24E-02	+	4.35E-03	0.026	4.68E-02						0.227 *

\* The Operational DCGL for Cs-137 has been adjusted to 2.80 pCi/g as a surrogate to account for the potential presence of HTD radionuclide Sr-90.

OTHER RADIONUCLIDES

Sample ID	Isotope	Result (pCi/g)	2σ	MDA (pCi/g)	Identified	DCGL <sub>op</sub> (pCi/g)	Fraction of DCGL
9522-0001-008F	Pu-241	1.10E+01	8.260	1.35E+01	+	5.9E+02	0.02
9522-0001-014F	Tc-99	1.94E-01	0.161	2.68E-01	+	8.6E+00	0.02

SOUTHEAST SITE GROUNDS (NON-PROTECTED AREA)

SURVEY UNIT 9522-0001

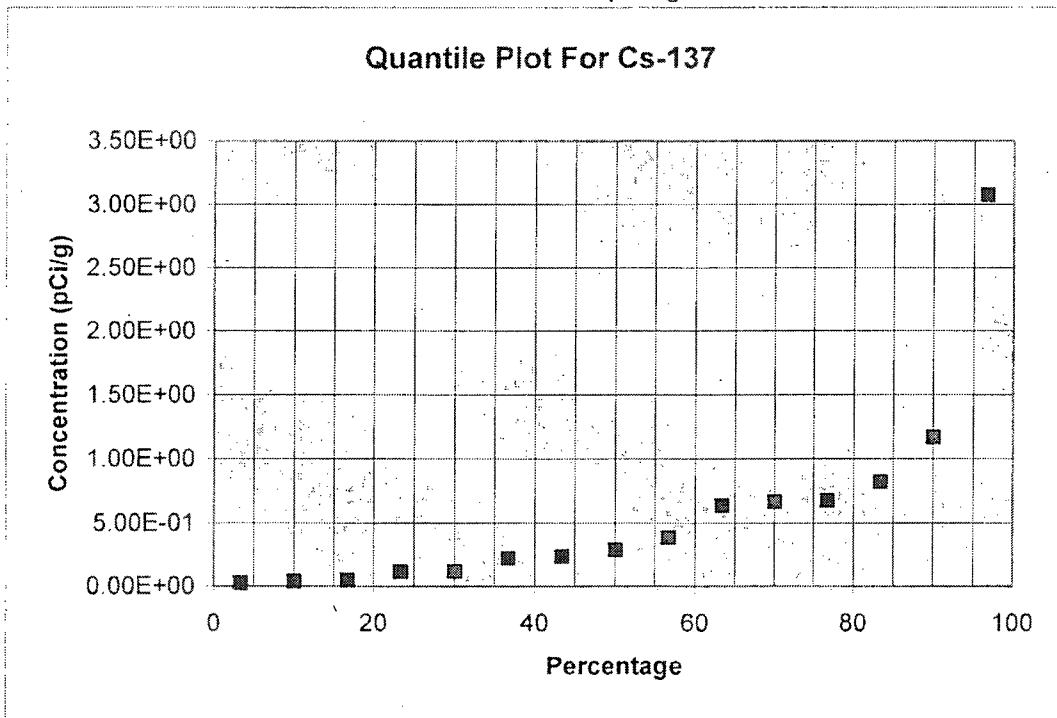
RELEASE RECORD

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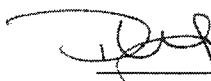
**ATTACHMENT 4B  
(GRAPHICAL REPRESENTATION OF  
DATA)**


# QUANTILE PLOT FOR CESIUM-137

Survey Unit: 9522-0001  
 Survey Unit Name: Southeast Site Grounds (non-protected area)  
 Mean: 5.70E-01 pCi/g



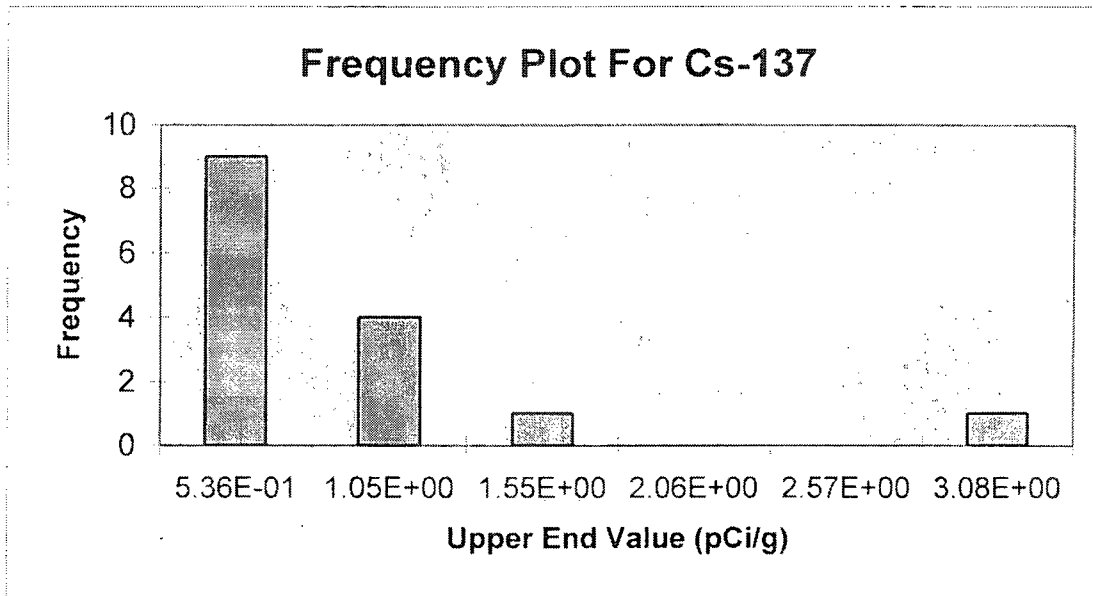
Cs-137	Rank	Percentage
2.77E-02	1	3.3%
4.11E-02	2	10.0%
5.04E-02	3	16.7%
1.16E-01	4	23.3%
1.17E-01	5	30.0%
2.23E-01	6	36.7%
2.39E-01	7	43.3%
2.91E-01	8	50.0%
3.89E-01	9	56.7%
6.37E-01	10	63.3%
6.66E-01	11	70.0%
6.77E-01	12	76.7%
8.24E-01	13	83.3%
1.17E+00	14	90.0%
3.08E+00	15	96.7%

 D. WATKOWIAK 1/8/07  
 Submitted by/Date

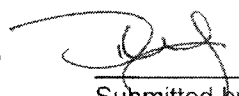
 R. MASON 1/8/07  
 Reviewed by/Date

# FREQUENCY PLOT FOR CESIUM-137


Survey Unit: 9522-0001  
Survey Unit Name: Southeast Site Grounds (non-protected area)  
Mean: 5.70E-01 pCi/g



Upper End Value	Observation Frequency	Observation Frequency
5.36E-01	9	60%
1.05E+00	4	27%
1.55E+00	1	7%
2.06E+00	0	0%
2.57E+00	0	0%
3.08E+00	1	7%
Total:	15	100%

  
Submitted by/Date

D. WAJTKOWIAK 1/8/07

  
Reviewed by/Date

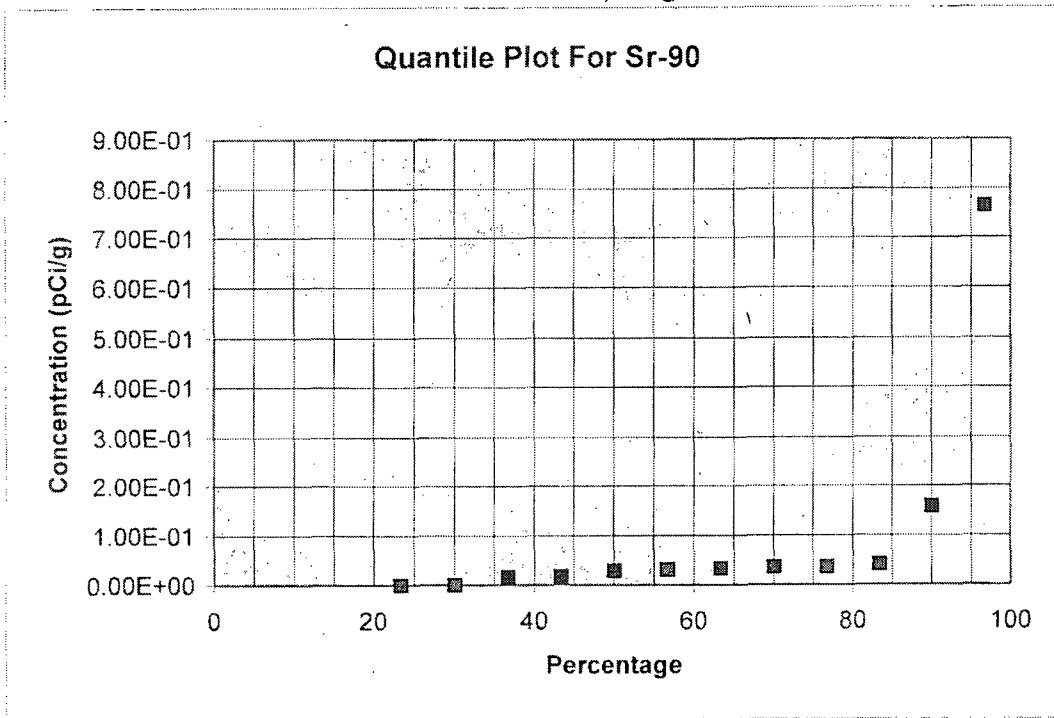
R. Massey 1/8/07

# QUANTILE PLOT FOR STRONTIUM-90

Survey Unit: 9522-0001

Survey Unit Name: Southeast Site Grounds (non-protected area)

Mean: 7.65E-02 pCi/g



Sr-90	Rank	Percentage
-1.28E-02	1	3.3%
-6.62E-03	2	10.0%
-2.89E-03	3	16.7%
1.97E-04	4	23.3%
8.07E-04	5	30.0%
1.68E-02	6	36.7%
1.79E-02	7	43.3%
2.88E-02	8	50.0%
3.19E-02	9	56.7%
3.35E-02	10	63.3%
3.61E-02	11	70.0%
3.70E-02	12	76.7%
4.20E-02	13	83.3%
1.59E-01	14	90.0%
7.66E-01	15	96.7%

D. WOJTKOWIAK 1/8/07

Submitted by/Date

R. Mason 1/8/07

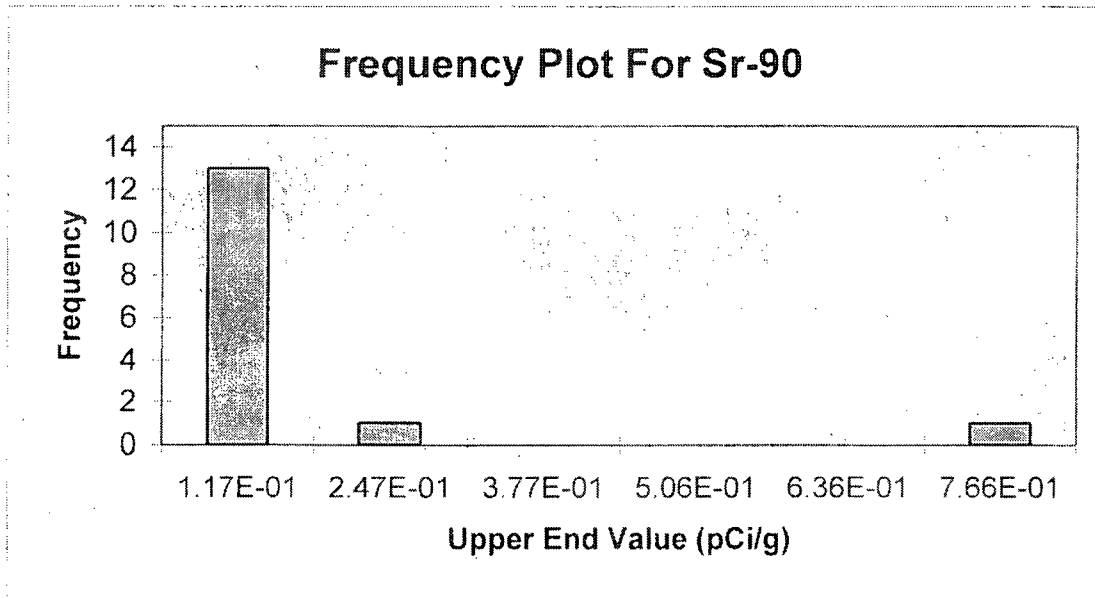
Reviewed by/Date

# FREQUENCY PLOT FOR STRONTIUM-90

Survey Unit: 9522-0001

Survey Unit Name: Southeast Site Grounds (non-protected area)

Mean: 7.65E-02 pCi/g



Upper End Value	Observation Frequency	Observation Frequency
1.17E-01	13	87%
2.47E-01	1	7%
3.77E-01	0	0%
5.06E-01	0	0%
6.36E-01	0	0%
7.66E-01	1	7%
Total:	15	100%

Submitted by/Date

D. WATKOWIAK 1/8/07

Reviewed by/Date

R. MASSOGI 1/8/07

SOUTHEAST SITE GROUNDS (NON-PROTECTED AREA)

SURVEY UNIT 9522-0001

RELEASE RECORD

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



### Sign Test Calculation Sheet for Multiple Radionuclides

Survey Area Number: 9522		Survey Unit Number: 0001		WPIR #: 2006-0047		
Survey Area Name: Southeast Site Grounds (non-protected area)		Classification: 2	TYPE I ( $\alpha$ error): 0.05	N: 15		
Radionuclides:	1 <sup>st</sup> Radionuclide Cs-137	2 <sup>nd</sup> Radionuclide Co-60	3 <sup>rd</sup> Radionuclide Sr-90	4 <sup>th</sup> Radionuclide		
DCGL:	5.38E+00	2.59E+00	1.05E+00			
Results 1 <sup>st</sup> Radionuclide (pCi/g)	Results 2 <sup>nd</sup> Radionuclide (pCi/g)	Results 3 <sup>rd</sup> Radionuclide (pCi/g)	Results 4 <sup>th</sup> Radionuclide (pCi/g)	Weighted Sum (W <sub>s</sub> )	1-W <sub>s</sub>	Sign
6.77E-01	-1.86E-04	1.68E-02		0.14	0.86	+1
6.66E-01	2.40E-02	-1.28E-02		0.12	0.88	+1
1.17E+00	-2.28E-03	4.20E-02		0.26	0.74	+1
6.37E-01	2.27E-02	3.19E-02		0.16	0.84	+1
8.24E-01	5.08E-02	1.79E-02		0.19	0.81	+1
3.08E+00	5.70E-02	1.59E-01		0.75	0.25	+1
2.23E-01	3.85E-03	3.61E-02		0.08	0.92	+1
1.16E-01	-3.91E-03	1.97E-04		0.02	0.98	+1
2.39E-01	-7.76E-03	2.88E-02		0.07	0.93	+1
1.17E-01	1.32E-02	-6.62E-03		0.02	0.98	+1
5.04E-02	1.22E-02	3.70E-02		0.05	0.95	+1
2.77E-02	3.35E-03	3.35E-02		0.04	0.96	+1
2.91E-01	0.00E+00	7.66E-01		0.78	0.22	+1
4.11E-02	1.38E-02	8.07E-04		0.01	0.99	+1
3.89E-01	1.15E-02	-2.89E-03		0.07	0.93	+1
Number of positive differences (S+)					15	

Critical Value 11

Survey Unit Meets the Acceptance Criteria

Performed by: David Wojtkowiak

Date: 1/8/2007

Independent Review by: Robert Massengill

Date: 1/8/07

SOUTHEAST SITE GROUNDS (NON-PROTECTED AREA)

SURVEY UNIT 9522-0001

RELEASE RECORD

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

## Split Sample Assessment Form

Survey Area #: 9522		Survey Unit #: 0001		Survey Unit Name: Southeast Site Grounds (non-protected area)																
Sample Plan or WPIR#: 2006-0047						SML#: 9522-0001-009														
Sample Description: Comparison of split samples collected from sample measurement location #9 and analyzed using gamma spectroscopy by off-site Vendor Laboratory. The standard sample was 9522-0001-009F, the comparison sample was 9522-0001-009FS.																				
STANDARD					COMPARISON															
Radionuclide	Activity Value	Standard Error	Resolution	Agreement Range	Activity Value	Standard Error	Comparison Ratio	Acceptable (Y/N)												
Cs-137	1.16E-01	0.017	7	0.5 - 2.0	1.01E-01	0.018	0.87	Y												
Comments/Corrective Actions: None					Table is provided to show acceptance criteria used to assess split samples.  <table> <tr> <th>Resolution</th> <th>Agreement Range</th> </tr> <tr> <td>4 - 7</td> <td>0.5 - 2.0</td> </tr> <tr> <td>8 - 15</td> <td>0.6 - 1.66</td> </tr> <tr> <td>16 - 50</td> <td>0.75 - 1.33</td> </tr> <tr> <td>51 - 200</td> <td>0.80 - 1.25</td> </tr> <tr> <td>&gt;200</td> <td>0.85 - 1.18</td> </tr> </table>				Resolution	Agreement Range	4 - 7	0.5 - 2.0	8 - 15	0.6 - 1.66	16 - 50	0.75 - 1.33	51 - 200	0.80 - 1.25	>200	0.85 - 1.18
									Resolution	Agreement Range										
4 - 7	0.5 - 2.0																			
8 - 15	0.6 - 1.66																			
16 - 50	0.75 - 1.33																			
51 - 200	0.80 - 1.25																			
>200	0.85 - 1.18																			
Performed by: D. Wojtkowiak					Date: 1/4/2007		Reviewed by: R. Massengill		Date: 1/8/07											

SOUTHEAST SITE GROUNDS (NON-PROTECTED AREA)

SURVEY UNIT 9522-0001

RELEASE RECORD

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

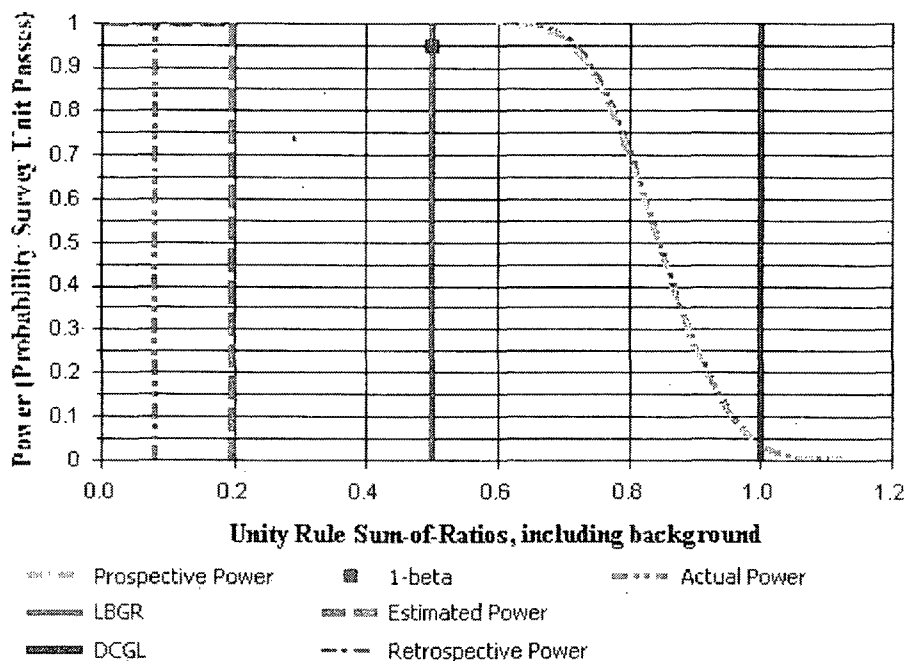


# DQA Surface Soil Report

## Assessment Summary

Site:	Southeast Grounds (non-protected area) 2		
Planner(s):	Wojo		
Survey Unit Name:	9522-0001		
Report Number:	1		
Survey Unit Samples:	15		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	<b><i>Reject Null Hypothesis (Survey Unit PASSES)</i></b>		

## Retrospective Power Curve



CYAPCO  
FINAL STATUS SURVEY RELEASE RECORD  
SOUTHEAST SITE GROUNDS (NON-PROTECTED AREA)  
SURVEY UNIT 9522-0001

Prepared By:  DWOLKOWIAK  
FSS Engineer

Date: 1/8/07

Reviewed By:  R. Massengill  
FSS Engineer

Date: 1/9/07

Approved By:  C. E. T. Newman  
Technical Support Manager

Date: 1/19/07

SOUTHEAST SITE GROUNDS (NON-PROTECTED AREA)  
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TOTAL 370

SOUTHEAST SITE GROUNDS (NON-PROTECTED AREA)  
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**1. SURVEY UNIT DESCRIPTION**

Survey Unit 9522-0001 (Southeast Site Grounds (non-protected area) is designated as Final Status Survey (FSS) Class 2 and consists of approximately six thousand nine hundred and seventy two square meters (6,972 m<sup>2</sup>) of uninhabited, undeveloped land and is located approximately one thousand and fifty five feet (1,055 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 9522-0002, land Survey Unit 9522-0003 and land Survey Unit 9522-0004 to the north (called north as oriented with the north to south flow of the Connecticut River), the Discharge Canal to the west, land Survey Unit 9539-0001 to the south, and land Survey Unit 9532 to the east. The survey unit is located along the southern boundary of Survey Area 9522, from the northern transmission tower south to the owner-controlled area fence. It is comprised mostly of rock outcroppings, rock ledge, underbrush and trees. The eastern portion of the survey unit has a moderate slope running east to west. The Independent Spent Fuel Storage Installation (ISFSI) Haul Road runs north to south along the western portion of the survey unit.

The reference coordinates associated with this survey unit are E009 through E016 by S078 through S081 (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 9522-0001 consisted of:

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

A review of the "*Initial and Supplemental Characterization Reports*" as well as the previous "*Classification Basis Summaries*" was performed. Survey Unit 9522-0001 was initially designated as Class 2 during the development of the LTP. 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.



SOUTHEAST SITE GROUNDS (NON-PROTECTED AREA)  
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RELEASE RECORD

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The second source document justified a Class 2 designation for those areas for which there was historical evidence of contamination above the Derived Concentration Guideline Levels (DCGLs - refer to Section 2 for definition and description of DCGL), but for which recent surveys had shown that decontamination efforts had occurred and that the radiological conditions were expected to be below the DCGLs. Additional justification for a Class 2 designation based on survey and sampling data was provided as another reference to the LTP by the "*Haddam Neck Plant Historical Site Assessment Supplement*".

Open land Survey Area 9522 was at one time an open land immediately adjacent to the southern boundary of the Radiologically Controlled Area (RCA) and security fences. Initially, only a small section of the north side of the unit was paved, with the remainder of the unit gradually sloping down to the original site elevation. As the result of plant operations, there was a need to expand the industrial area to support plant operations and to control exposure to radiation. According to the "*Haddam Neck Plant Historic Site Assessment Supplement*", plant photos reveals that the area was gradually filled in from approximately 1972 to between 1974 and 1976, with soil that may have originated from on-site. This action raised the elevation up to site grade, thereby facilitating a reconfiguration and expansion of the RCA and security protected area. Photos taken in 1976 show that the area was landscaped with grass and small trees and was probably given the name "ball field" at that time. Over the next several years, additional fill was brought in. By 1987, photos show that half of the survey area was paved and occupied with buildings. It is estimated that the elevation in the survey area may have increased by up to five (5) feet from the original site grade.

Survey Area 9522 was impacted by several radiologically significant events during plant operations. These include the discovery of several discrete sources of elevated activity on the ball-field in March 1980, the spill of radioactive liquid into the drain system in February of 1989 and the discovery of several discrete particles outside of the RCA in 1995. Additionally, a portion of Survey Area 9522 was used as a temporary laydown area for the Steam Generator Lower Assemblies (SGLAs) and the Pressurizer until these components were shipped off-site for disposal in 2001. All of these events occurred in the northern portion of Survey Area 9522.

It appears based upon a review of the photographs and historical documents that Survey Unit 9522-0001 was not developed and used in the same manner as the remainder of the survey area to the north, mainly due to the physical geography of the survey unit and its lack of proximity to the south boundary of the RCA during plant operations. Leaks and spills that occurred during plant operations that affected the northern survey units in Survey Area 9522, did not affect Survey Unit 9522-0001 as the natural slope of the survey area directed flow in an east to west direction away from the survey unit. Subsequently, the

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operational incidents impacting the northern portions of the survey area do not seem to specifically apply to Survey Unit 9522-0001.

During previous characterization surveys, focus was given to the northern survey units in Survey Area 9522 as most of the historical events occurred in these area. Minimal survey data was available that distinctively addressed Survey Unit 9522-0001. Subsequently, a Survey and Sampling Work Plan (SSWP №. SSWP-06-09-006) was developed to specifically characterize the soils in Survey Unit 9522-0001. This survey plan was implemented in October of 2006.

Six (6) soil samples were collected to aid in the characterization of this area and to provide sample data with regard to types and quantities of radioactive material present in the surface soil. During scanning, several areas were identified with slightly elevated readings, which prompted the collection of three (3) additional investigation soil samples at those locations. All samples were collected and analyzed by gamma spectroscopy. Two (2) of the soil samples were analyzed by an approved off-site laboratory for the presence of "Hard-to-Detect" (HTD) radionuclides.

Cs-137 and Co-60 was positively identified in six (6) of the nine (9) samples at concentrations greater than MDA but far less than their respective Operational DCGL. In addition, Sr-90 was positively identified (i.e., a result greater than two (2) standard deviations uncertainty) but at concentrations less than 5% of the Operational DCGL. Subsequently, Sr-90 was deselected as an isotope of concern in accordance with Section 5.4.7.2 of the LTP. Statistical quantities (mean, median and standard deviation) from the 2006 characterization survey conducted under SSWP 06-09-006 are provided in Table 1.

**Table 1 – Basic Statistical Quantities for Cs-137 and Co-60 from the 2006 Characterization Survey**

	Cs-137 (pCi/g)	Co-60 (pCi/g)
Minimum Value :	2.05E-02	-4.58E-02
Maximum Value :	2.55E+00	1.08E-01
Mean :	6.32E-01	2.05E-02
Median :	2.04E-01	5.63E-03
Standard Deviation :	8.96E-01	4.37E-02

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

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

Based upon a review of the historical information and the results of the Characterization Survey data, it was concluded that there was a low probability for residual radioactivity in concentrations greater than the DCGLs, justifying a final survey unit classification of Class 2 (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. Therefore, the survey unit would satisfy the primary objective of the FSS plan.

The primary objective of the FSS plan was to demonstrate that the level of residual radioactivity in Survey Unit 9522-0001 did not exceed the release criteria specified in the LTP and that the potential dose from residual radioactivity is As Low As Reasonably Achievable (ALARA).

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

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

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***Equation 1***

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

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

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

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

***Equation 2***

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

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

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**Table 2— Radionuclide Specific Base Case Soil DCGLs, Operational DCGLs and Required Minimum Detectable Concentrations (MDCs)**

<b>Radionuclide <sup>(1)</sup></b>	<b>Base Case Soil DCGL (pCi/g) <sup>(2)</sup></b>	<b>Operational DCGL (pCi/g) <sup>(3)</sup></b>	<b>Required MDC (pCi/g) <sup>(4)</sup></b>
<b>H-3</b>	4.12E+02	2.80E+02	1.65E+01
<b>C-14</b>	5.66E+00	3.85E+00	2.26E-01
Mn-54	1.74E+01	1.18E+01	6.96E-01
<b>Fe-55</b>	2.74E+04	1.86E+04	1.10E+03
Co-60	3.81E+00	2.59E+00	1.52E-01
<b>Ni-63</b>	7.23E+02	4.92E+02	2.89E+01
<b>Sr-90</b>	1.55E+00	1.05E+00	6.20E-02
Nb-94	7.12E+00	4.84E+00	2.85E-01
<b>Tc-99</b>	1.26E+01	8.57E+00	5.04E-01
Ag-108m	7.14E+00	4.86E+00	2.86E-01
Cs-134	4.67E+00	3.18E+00	1.87E-01
Cs-137	7.91E+00	5.38E+00	3.16E-01
Eu-152	1.01E+01	6.87E+00	4.04E-01
Eu-154	9.29E+00	6.32E+00	3.72E-01
Eu-155	3.92E+02	2.67E+02	1.57E+01
<b>Pu-238</b>	2.96E+01	2.01E+01	1.18E+00
<b>Pu-239/240</b>	2.67E+01	1.82E+01	1.07E+00
Am-241 <sup>(5)</sup>	2.58E+01	1.75E+01	1.03E+00
<b>Pu-241</b>	8.70E+02	5.92E+02	3.48E+01
<b>Cm-243/244</b>	2.90E+01	1.97E+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 seventeen (17) 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 Survey Unit 9522-0001 for FSS. Cs-137 and Co-60 were the only two (2) gamma emitting radionuclides reported in concentrations with the potential for exceeding the screening criteria. Sr-90 was positively identified (i.e., a result greater than two (2) standard deviations uncertainty) but at concentrations less than 5% of the Operational DCGL. Subsequently, Sr-90 was deselected as an isotope of concern in accordance with Section 5.4.7.2 of the LTP. 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 both Cs-137 and Co-60 would be the radionuclides of concern in Survey Unit 9522-0001 (refer to Section 3). The characterization survey did not identify any HTD radionuclides of concern for this survey unit. Subsequently, surrogate DCGLs were not required 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. Radionuclide screening or de-selection is a process where the dose contribution from an individual radionuclide or aggregates may be considered insignificant and eliminated from the FSS. The criteria for de-selection are concentrations less than 5% for individual radionuclides and less than 10% for aggregates.

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

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

The number of soil samples for FSS was determined in accordance with Procedure RPM 5.1-12, "*Determination of the Number of Surface Samples for Final Status Survey.*" The Lower Bound of the Gray Region (LBGR) was set in accordance with Procedure RPM 5.1-11 to 0.5 to maintain the relative shift ( $\Delta/\sigma$ ) in the range of 1 and 3. The resulting relative shift was 2.99. 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 2 area.

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

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**Table 3 - Sample Measurement Locations with Associated GPS Coordinates**

Designation	Northing	Easting
9522-0001-001F	236516.39	669283.45
9522-0001-002F	236516.39	669359.45
9522-0001-003F	236450.56	669321.45
9522-0001-004F	236450.56	669397.46
9522-0001-005F	236384.73	669283.45
9522-0001-006F	236384.73	669359.45
9522-0001-008F	236318.91	669397.46
9522-0001-009F	236253.08	669283.45
9522-0001-010F	236253.08	669359.45
9522-0001-011F	236253.08	669435.46
9522-0001-012F	236187.25	669245.44
9522-0001-013F	236187.25	669321.45
9520-0001-014F	236187.25	669397.46
9522-0001-015F	236121.43	669359.45
9522-0001-016F <sup>(1)</sup>	236516.39	669283.45

(1) Sample location 9522-0001-007F was inaccessible due to the presence of a rock ledge and heavy brush; sample location 9522-0001-016F was added under an FSS plan addendum (refer to Section 10)

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

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.



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The LTP specifies a required scanning coverage of 10% to 100% for outdoor Class 2 areas. The fraction of scanning coverage was determined during the DQO process with the total amount and location(s) based on the likelihood of finding elevated activity during FSS. Based on the historical site assessment, the characterization data available, and the use of this survey unit, it was determined that scanning was required in three (3) separate areas. The total surface area to be scanned was approximately 25% of the survey unit. A combination of two of the scan areas resulted in approximately 100% scan coverage of the section of the ISFSI Haul Road contained in this survey unit. A map of the scan grid locations is provided in Attachment 1.

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

**Table 4 – Synopsis of the Survey Design**

Feature	Design Criteria	Basis
Survey Unit Land Area	6,972 m <sup>2</sup>	Based on AutoCAD-LT
Number of Measurements	15 (15 systematic grid)	Type 1 and Type 2 errors were 0.05, sigma was 0.17 pCi/g, the LBGR was set at 0.5 to maintain Relative Shift in the range of 1 and 3
Grid Spacing	23.09 m	Based on triangular grid
Operational DCGL	5.38 pCi/g Cs-137 2.59 pCi/g Co-60	Administratively set to achieve seventeen (17) mrem/yr TEDE <sup>(1)</sup>
Soil Investigation Level	5.38 pCi/g Cs-137 2.59 pCi/g Co-60	The Operational DCGL meets the LTP criteria for a Class 2 survey unit
Scan Survey Area Coverage	Approximately 25% of the area	The LTP requires >10% area coverage for Class 2 survey units
Scan Investigation Level	Detectable over background	Administratively set to achieve seventeen (17) mrem/yr TEDE <sup>(1)</sup>

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

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**5. SURVEY IMPLEMENTATION**

Final status survey field activities were conducted under Work Plan and Inspection Record (WP&IR) 2006-0047. The WP&IR package included a detailed FSS plan, job safety analysis, job planning checklist and related procedures for reference. Daily briefings were conducted to discuss the expectations for job performance and the safety aspects of the survey. The "Daily Survey Journal" was used to document field activities and other information pertaining to the FSS.

Three (3) scan areas were established that constituted approximately 25% of the surface area of Survey Unit 9522-0001. Grid lines, one 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 4,210 counts per minute (cpm) up to 9,750 cpm.

The scan areas were established and scanned for elevated readings (see Attachment 2 for all scan results). Scanning was performed with an Eberline E-600 using a SPA-3 sodium iodide detector. The E-600 was operated in the rate-meter mode and used with audio response. The probe was positioned as close to the ground as possible and was moved at a scan speed of about 0.5 meters per second. Approximately 25% 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 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 (9522-0001-008F and 9522-0001-014F) were randomly selected for HTD radionuclide analysis.

The implementation of survey specific quality control measures included the collection of one (1) sample (9522-0001-009F) for "split sample" analysis.

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**6. SURVEY RESULTS**

All field survey activities were conducted between November 9, 2006 and November 21, 2006.

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 for the entire survey unit are provided in Attachment 2.

**Table 5 - Scan Results for Sample Measurement Locations**

Sample Measurement Location	Highest Logged Reading (kcpm)	Action Level <sup>(2)</sup> (kcpm)	> Action Level <sup>(3)</sup>
1	10.05	10.10	YES
2	11.00	11.10	NO
3	10.50	10.50	NO
4	10.80	11.70	NO
5	9.12	10.50	NO
6	10.30	10.10	YES
8	8.30	8.23	YES
9	6.96	7.67	NO
10	7.69	11.10	NO
11	7.41	8.34	NO
12	6.33	7.38	NO
13	4.55	5.77	NO
14	7.69	6.83	YES
15	9.75	9.17	YES
16 <sup>(1)</sup>	7.15	9.01	NO

(1) Sample location 9522-0001-007F was inaccessible due to the presence of a rock ledge and heavy brush; sample location 9522-0001-016F was added under an FSS plan addendum (refer to Section 10)

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

(3) The FSS plan requires movement of the sample measurement location to the area within the 1 meter radius yielding the response above the action level. Sample locations 9522-0001-001F, 9522-0001-006F, 9522-0001-008F, 9522-0001-014F and 9522-0001-015F were moved accordingly.

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The scan areas, that comprised approximately 25% 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 November 15, 2006 through November 21, 2006. Several elevated measurement locations were identified during scanning. Table 6 provides an overview of the scan area survey. Complete scan results are provided in Attachment 2.

**Table 6 - Scan Area Results**

Scan Area	Highest Logged Reading (kcpm)	Action Level <sup>(1)</sup> (kcpm)	Elevated Reading Identification <sup>(2)</sup>	Investigation Sample
1	9.49	7.60	9522-01-ER-01-06-1	9522-0001-021I
			9522-01-ER-01-09-1	9522-0001-022I
			9522-01-ER-01-12-1	9522-0001-023I
2	9.68	8.46	9522-01-ER-02-03-1	9522-0001-017I
			9522-01-ER-02-10-1	9522-0001-018I
			9522-01-ER-02-19-1	9522-0001-019I
			9522-01-ER-02-19-2	9522-0001-020I
3	11.00	9.70	9522-01-ER-03-03-1	9522-0001-024I

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

(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 split and the eight (8) investigative samples using gamma spectroscopy. 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 and Co-60 were the only gamma-emitting radionuclides reported in concentrations exceeding the de-selection criteria.

Cs-137 was identified in fourteen (14) and Co-60 was identified in three (3) 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 lower than the concentrations of Cs-137 found in soil at off-site locations within the vicinity of the HNP as presented in the Health Physics TSD BCY-HP-0063. A summary of the fifteen (15) samples collected for non-parametric statistical testing results is provided in Table 7.

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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
9522-0001-001F	6.77E-01	-1.86E-04
9522-0001-002F	6.66E-01	2.40E-02
9522-0001-003F	1.17E+00	-2.28E-03
9522-0001-004F	6.37E-01	2.27E-02
9522-0001-005F	8.24E-01	5.08E-02
9522-0001-006F	3.08E+00	5.70E-02
9522-0001-008F	2.23E-01	3.85E-03
9522-0001-009F	1.16E-01	-3.91E-03
9522-0001-010F	2.39E-01	-7.76E-03
9522-0001-011F	1.17E-01	1.32E-02
9522-0001-012F	5.04E-02	1.22E-02
9522-0001-013F	2.77E-02	3.35E-03
9522-0001-014F	2.91E-01	0.00E+00
9522-0001-015F	4.11E-02	1.38E-02
9522-0001-016F <sup>(1)</sup>	3.89E-01	1.15E-02

(1) Sample location 9522-0001-007F was inaccessible due to the presence of a rock ledge and heavy brush; sample location 9522-0001-016F was added under an FSS plan addendum (refer to Section 10)

The off-site laboratory also processed two (2) samples for HTD analysis as required by the sample plan. The requested analyses included alpha spectroscopy, gas proportional counting, and liquid scintillation depending on the radionuclide and the measurement method. All analyses met the required MDC.

Sr-90 was positively identified (i.e., a result greater than two standard deviations uncertainty) in both of the samples analyzed for HTD radionuclides. As previously stated in Section 4 of this report, the criteria for de-selection of a radionuclide is a concentration that is less than 5% of the Operational DCGL for individual radionuclides and less than 10% of the Operational DCGLs for aggregates. For Sr-90, the Operational DCGL is 1.05 pCi/g to achieve a TEDE of seventeen (17) mrem/yr.

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The analytical results for Sr-90 in the two (2) samples selected for HTD analysis respectively equated to 3% and 73% of the Operational DCGL. Subsequently, Sr-90 was added as a radionuclide of concern for this survey unit. In response, all samples that comprised the statistical sample population for this survey unit were subjected to additional analysis for the presence of Sr-90. The results 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
9522-0003-001F	1.68E-02
9522-0003-002F	-1.28E-02
9522-0003-003F	4.20E-02
9522-0003-004F	3.19E-02
9522-0003-005F	1.79E-02
9522-0003-006F	1.59E-01
9522-0003-008F	3.61E-02
9522-0003-009F	1.97E-04
9522-0003-010F	2.88E-02
9522-0003-011F	-6.62E-03
9522-0003-012F	3.70E-02
9522-0003-013F	3.35E-02
9522-0003-014F	7.66E-01
9522-0003-015F	8.07E-04
9522-0003-016F <sup>(1)</sup>	-2.89E-03

(1) Sample location 9522-0001-007F was inaccessible due to the presence of a rock ledge and heavy brush; sample location 9522-0001-016F was added under an FSS plan addendum (refer to Section 10)

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

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**Equation 3**

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

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

The results of the unity rule calculation for the radionuclides of concern in the statistical sample population for Survey Unit 9522-0001 are provided in Table 9 below.

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

Sample Number	Fraction of the Operational DCGL <sup>(1)(3)</sup>			Unity Fraction
	Cs-137	Co-60	Sr-90	
9522-0006-001F	0.13	-	0.02	0.14
9522-0006-002F	0.12	-	-	0.12
9522-0006-003F	0.22	-	0.04	0.26
9522-0006-004F	0.12	0.01	0.03	0.16
9522-0006-005F	0.15	0.02	0.02	0.19
9522-0006-006F	0.57	0.02	0.15	0.75
9522-0006-008F	0.04	-	0.03	0.08
9522-0006-009F	0.02	-	-	0.02
9522-0006-010F	0.04	-	0.03	0.07
9522-0006-011F	0.02	-	-	0.02
9522-0006-012F	0.01	-	0.04	0.04
9522-0006-013F	0.01	-	0.03	0.04
9522-0006-014F	0.05	-	0.73	0.78
9522-0006-015F	-	-	-	0.00
9522-0006-016F <sup>(2)</sup>	0.07	-	-	0.07

(1) The Operational DCGL from Table 2 is 5.38 pCi/g for Cs-137, 2.59 pCi/g for Co-60 and 1.05 pCi/g for Sr-90 to achieve seventeen (17) mrem/yr TEDE respectively.

(2) Sample location 9522-0001-007F was inaccessible due to the presence of a rock ledge and heavy brush; sample location 9522-0001-016F was added under an FSS plan addendum (refer to Section 10)

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

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**7. QUALITY CONTROL**

The off-site laboratory processed the split samples and performed gamma spectroscopy analysis. 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 at location 9520-0001-009.

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

**8. INVESTIGATIONS AND RESULTS**

Eight (8) investigative samples were collected from scan area 1, scan area 2 and scan area 3 at locations exhibiting elevated scan readings. As previously stated, Sr-90 was positively identified (i.e. a result greater than two (2) standard deviations uncertainty) in the two (2) surface soil samples selected for HTD analysis. Consequently, Sr-90 was added as a radionuclide of concern for this survey unit. All surface soil samples comprising the statistical sample population were subjected to additional analysis for the presence of Sr-90. Subsequently, the statistical sample population as a whole was evaluated to assess the distribution of the detected radionuclides of concern. 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 resultant distribution fractions are presented in Table 10 below.

**Table 10 – Radionuclide Distribution Fraction for the Radionuclides of Concern in the Statistical Soil Sample Population**

Detected Radionuclide	Distribution Fraction
Cs-137	0.841
Co-60	0.008
Sr-90	0.151

The potential presence of Sr-90 in the investigative samples taken that were not subjected to direct analysis for Sr-90 was addressed by using a surrogate relationship to another detectable radionuclide as recommended in NUREG-1575 (MARSSIM), in this case Cs-137. To demonstrate compliance



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with the release criteria by directly comparing the individual investigative sample results with the DCGL(s) as required by MARSSIM, the DCGL for the surrogate radionuclide, in this case Cs-137 was scaled to account for the fact that it was being used as an indicator for additional radionuclides, in this case Sr-90. This result is referred to as the surrogate DCGL.

The surrogate DCGL was computed based on the distribution ratio between the hard-to-detect radionuclides and the easy-to-detect radionuclides. The surrogate DCGL is computed as follows:

**Equation 4**

$$Surrogate_{DCGL} = \frac{1}{\left[ \left( \frac{1}{DCGL_{Sur}} \right) + \left( \frac{R_2}{DCGL_2} \right) + \left( \frac{R_3}{DCGL_3} \right) + \dots + \left( \frac{R_n}{DCGL_n} \right) \right]}$$

Where: DCGL<sub>Sur</sub> = Surrogate radionuclide DCGL  
 DCGL<sub>2,3,...n</sub> = DCGL for radionuclides to be represented by the surrogate  
 R<sub>n</sub> = Ratio of concentration (or nuclide mixture fraction) of radionuclide "n" to surrogate radionuclide

Using the DCGLs presented in Table 2 and the soil nuclide distribution presented in Table 10, the following surrogate calculation was deduced;

**Equation 5**

$$Surrogate_{DCGL(Cs-137)} = \frac{1}{\left[ \left( \frac{1}{5.38_{(Cs-137)}} \right) + \left( \frac{.151/.841}{1.05_{(Sr-90)}} \right) \right]} = 2.80 \text{ pCi/g}$$

Subsequently, the surrogate DCGL that was used for Cs-137 in this survey unit for direct comparison of investigative sample results to demonstrate compliance with the operational dose limit of seventeen (17) mrem per year is 2.80 pCi/g.

The samples are denoted as shown in Table 6, with the sample results shown in Table 11 below.

**Table 11 - Investigative Sample Results**

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	Unity Fraction <sup>(1)</sup>
9522-0001-017I	0.00E+00	1.28E-02	0.005
9522-0001-018I	8.04E-02	1.20E-02	0.033
9522-0001-019I	4.95E-02	4.30E-02	0.034

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**Table 11 - (continued)**

Sample Number	Cs-137 pCi/g	Co-60 pCi/g	Unity Fraction <sup>(1)</sup>
9522-0001-020I	3.56E-02	4.71E-03	0.015
9522-0001-021I	5.19E-01	2.53E-02	0.195
9522-0001-022I	6.53E-02	1.79E-02	0.030
9522-0001-023I	5.50E-02	-1.47E-02	0.014
9522-0001-024I	6.30E-01	4.35E-03	0.227

- (1) The Operational DCGL from Table 2 is 5.38 pCi/g for Cs-137 and 2.59 pCi/g for Co-60 to achieve seventeen (17) mrem/yr TEDE respectively. The Operational DCGL for Cs-137 has been adjusted to 2.80 pCi/g as a surrogate to account for the potential presence of HTD radionuclide Sr-90.

**9. REMEDIATION AND RESULTS**

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

**10. CHANGES FROM THE FINAL STATUS SURVEY PLAN**

An addendum to the FSS plan was initiated on November 13, 2006 to replace sample location 9522-0001-007F, which was determined to be inaccessible due to the presence of a rock ledge and heavy brush. Sample location 9522-0001-016F was determined randomly using VSP.

Additional analysis for the presence of Sr-90 was performed on the statistical survey population as a consequence of the results from the initial samples selected for HTD analysis. This was to ensure that the dose consequence from the possible presence of Sr-90 in the surface soils in this survey unit was adequately addressed.

**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 2.

The preliminary data review consisted of calculating basic statistical quantities (e.g., mean, median, standard deviation). The mean and median values are well below the Operational DCGL. Also, the retrospective power curve shows that a sufficient number of samples were collected to achieve the desired power. Therefore, the survey unit meets the unrestricted release criteria with adequate power as required by the DQOs. The basic statistical quantities for the statistical sample population are provided below in Table 12.

**Table 12 – Basic Statistical Quantities for Cs-137, Co-60 and Sr-90 from the Final Status Survey**

	Cs-137 pCi/g	Co-60 pCi/g	Sr-90 pCi/g
DCGL <sub>op</sub> :	5.38E+00	2.59E+00	1.05E+00
Minimum Value:	2.77E-02	-7.76E-03	-1.28E-02
Maximum Value:	3.08E+00	5.70E-02	7.66E-01
Mean:	5.70E-01	1.32E-02	7.65E-02
Median:	2.91E-01	1.15E-02	2.88E-02
Standard Deviation:	7.72E-01	1.90E-02	1.95E-01

For Cs-137 and Sr-90, the range of the data, about four (4) standard deviations, was not a particularly large variation considering that the levels were essentially at existing environmental levels where such variation is to be expected and the difference between the mean and median was about 36% and 24% of the standard deviation which indicates some skewness in the data. The data was represented graphically through posting plots, a frequency plot, and a quantile plot. The frequency plot indicates positive skewness as confirmed by the calculated skew of 2.7 for Cs-137 and 3.6 for Sr-90.

Co-60, although included in the FSS plan for compliance purposes, was positively identified in only three (3) of the fifteen (15) samples collected for non-parametric statistical testing. Assessment of the basic statistical quantities and graphical representation of Co-60 was not considered useful given the limited number of data points to represent the distribution.

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

## 12. ANOMALIES

No anomalies were noted.

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**13. CONCLUSION**

Survey Unit 9522-0001 has met the final DQOs of the FSS plan. The ALARA criteria for soils as specified in Chapter 4 of the LTP were achieved. Elevated Measurement Comparison and remediation was not required.

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 2.

The dose contribution from soil is 3.126 mrem/yr TEDE based on the average concentration of the samples used for non-parametric statistical sampling.

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

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

The average total dose from residual radioactivity in this survey unit, including exposures from the three (3) components as described in Section 3, that is, residual radioactivity in soil, existing groundwater radioactivity, and future groundwater radioactivity from the burial of concrete foundations or footings from site buildings containing residual radioactivity, will not exceed 5.126 mrem/yr TEDE. Therefore, Survey Unit 9522-0001 is acceptable for unrestricted release.

**14. ATTACHMENTS**

14.1 Attachment 1 – Survey Unit Location Map

14.2 Attachment 2 – Scan Results

14.3 Attachment 3 – Laboratory Results

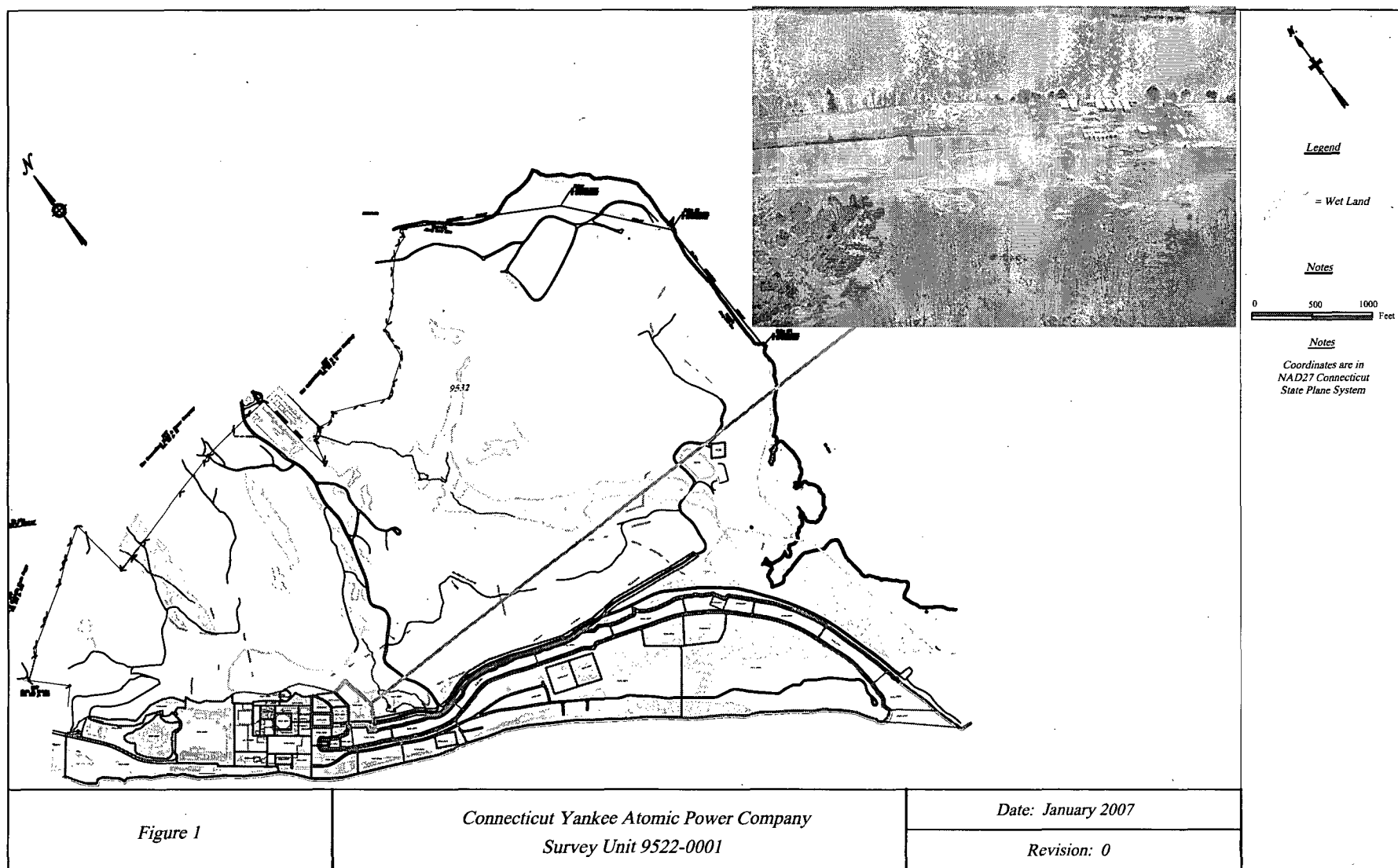
14.4 Attachment 4 – DQA Results

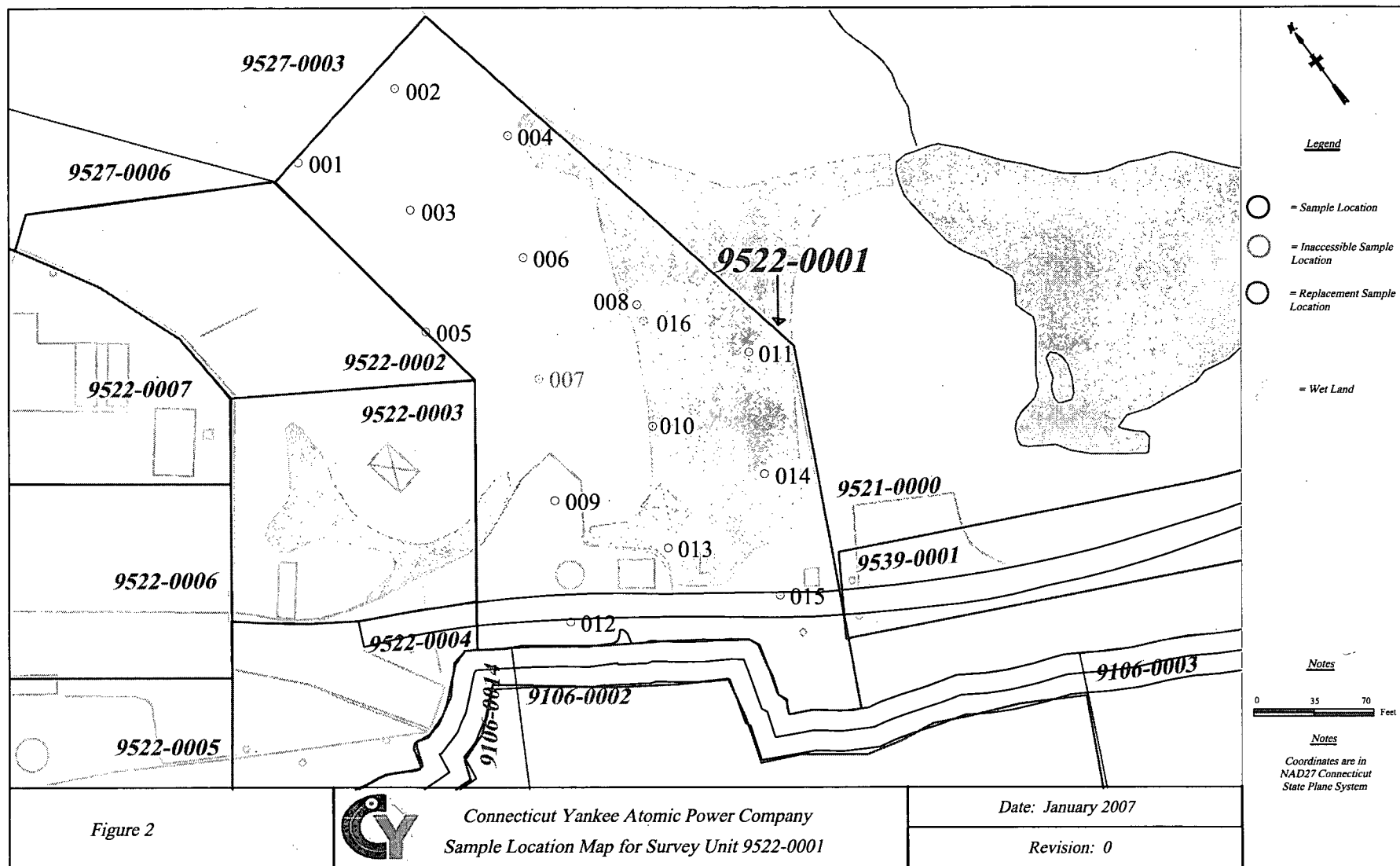
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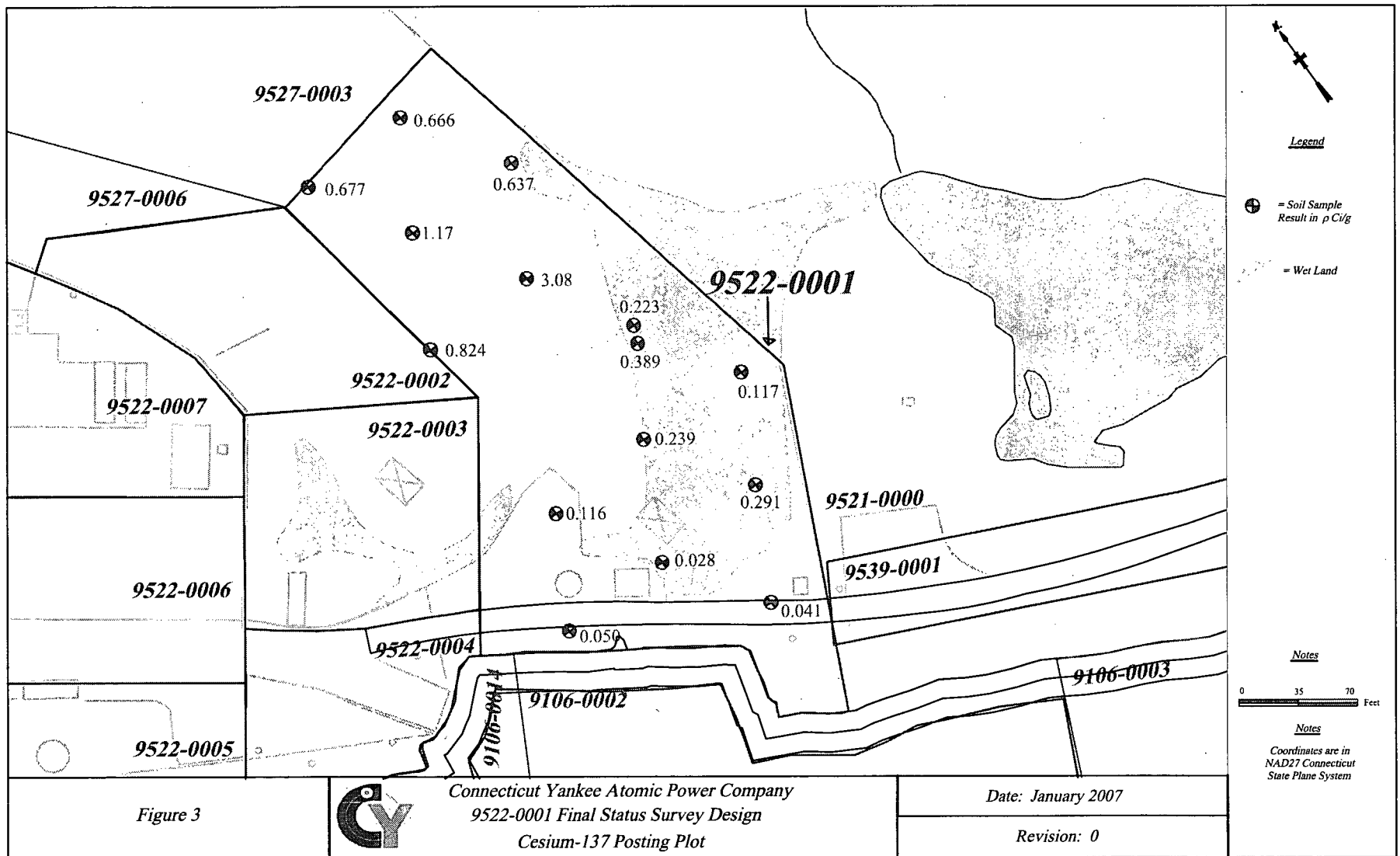
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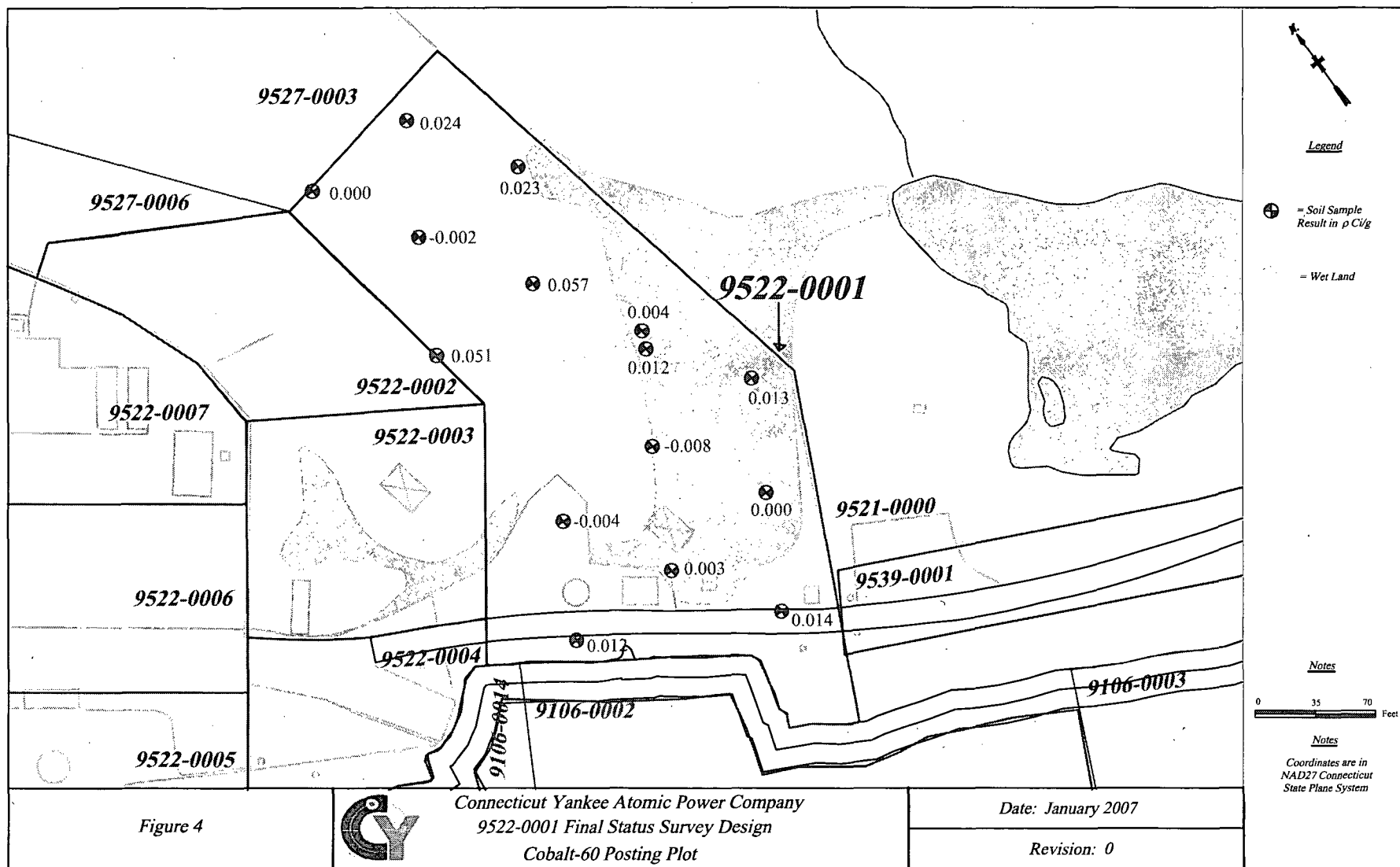
**ATTACHMENT 1 (FIGURES)**

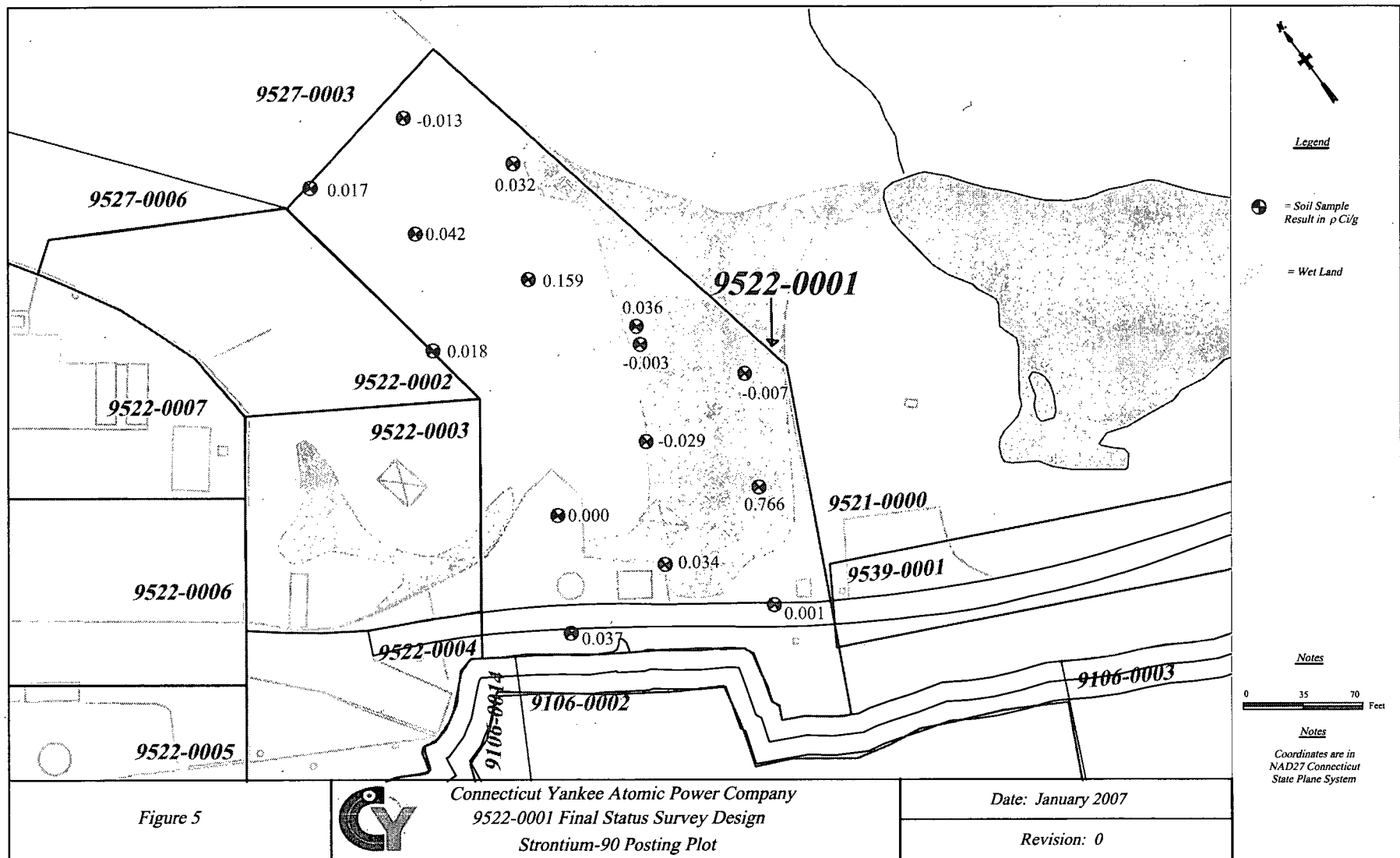


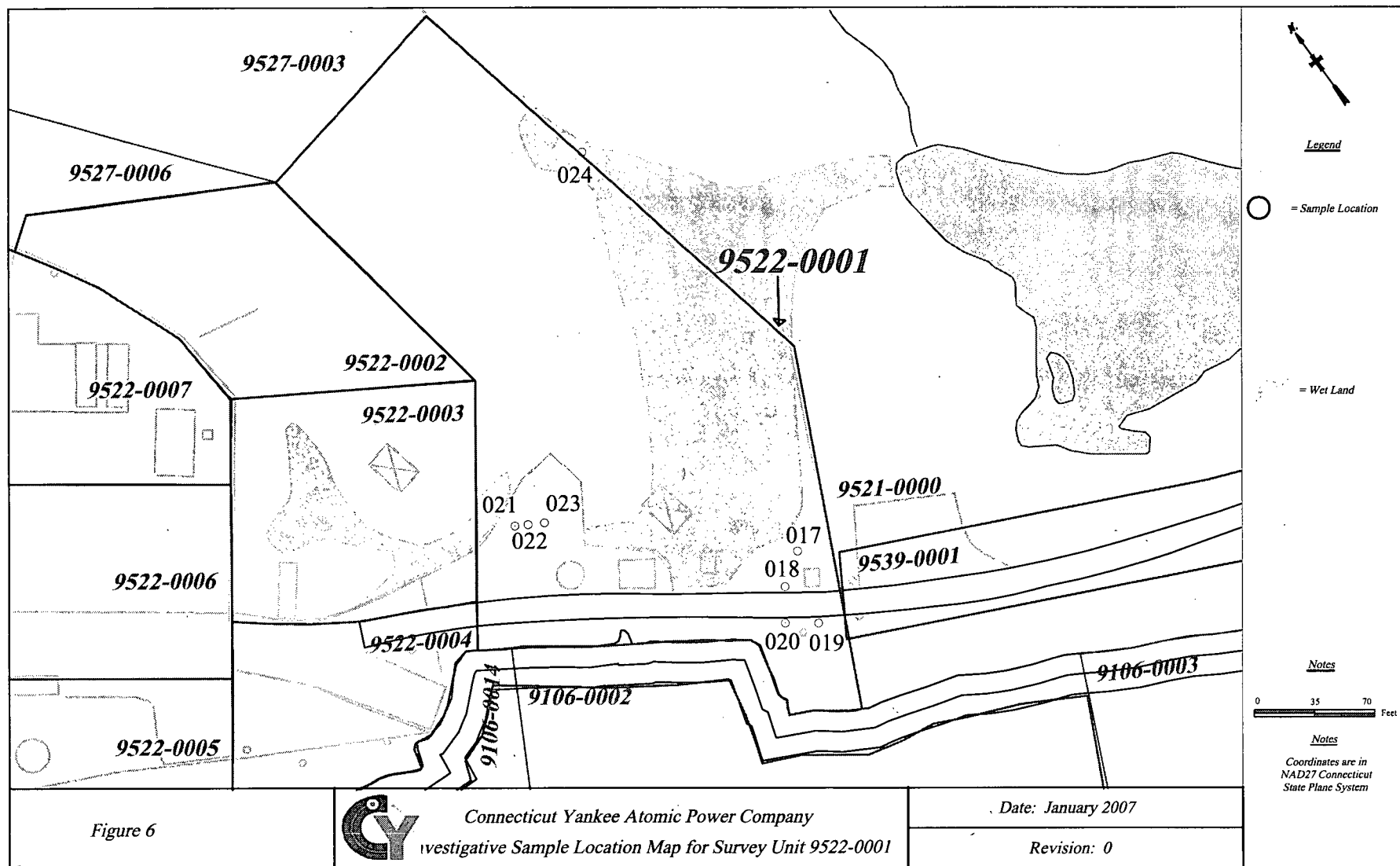


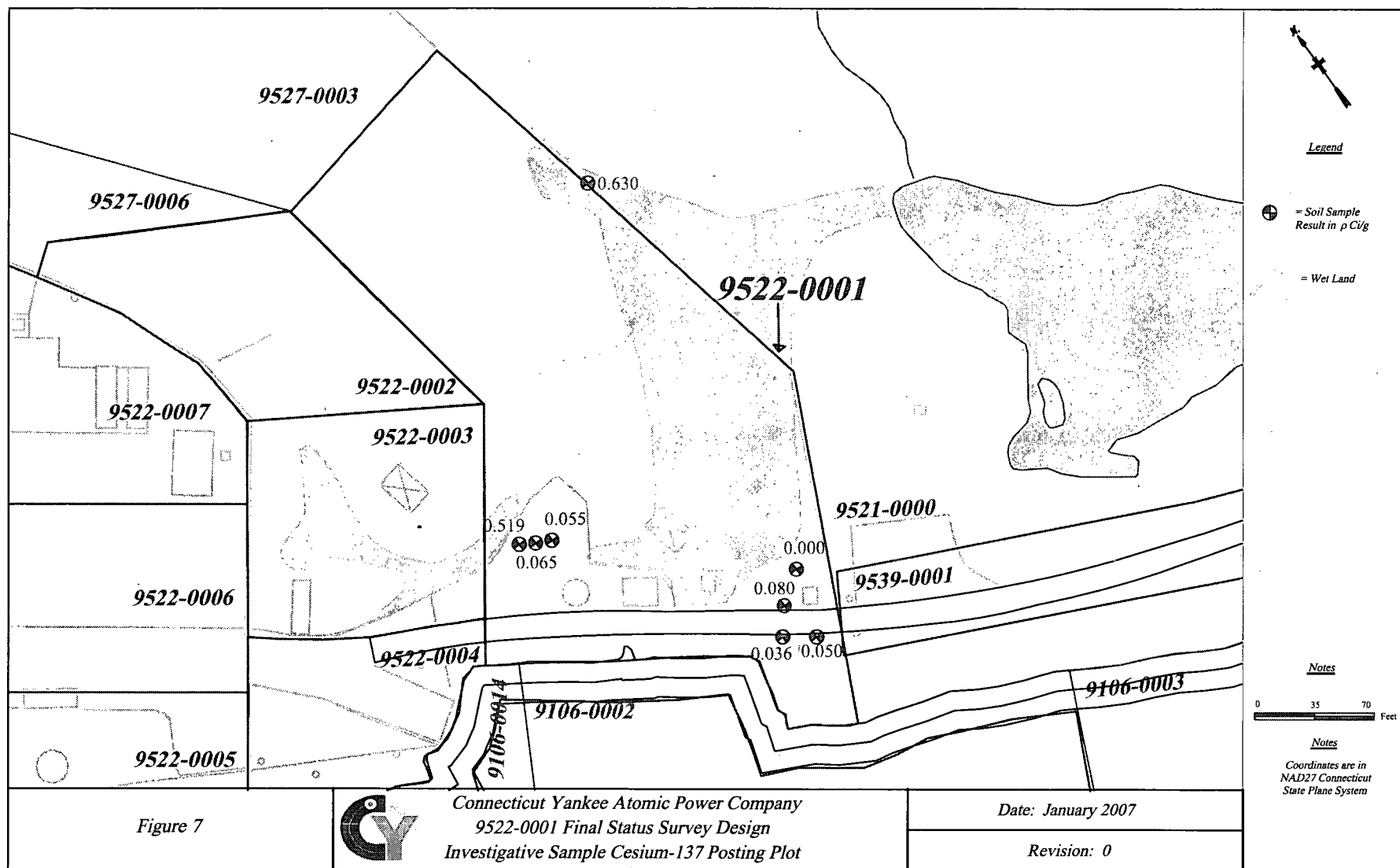


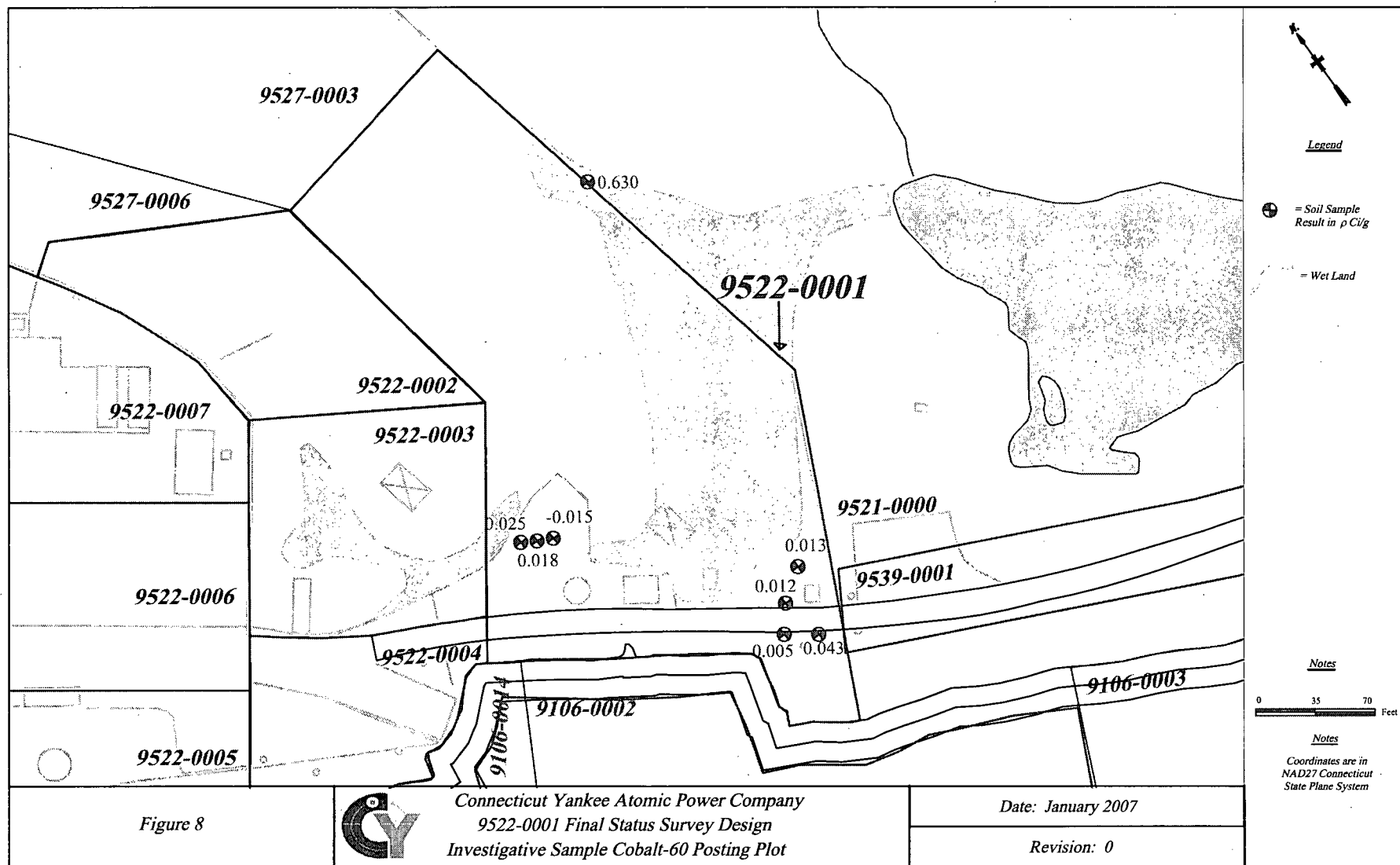












## SCAN AREA LOCATION MAP & WORKSHEET

SURVEY AREA #: 9522 SURVEY UNIT #: 0001

DESCRIPTION OF AREA: Southeast Grounds (non-protected area)

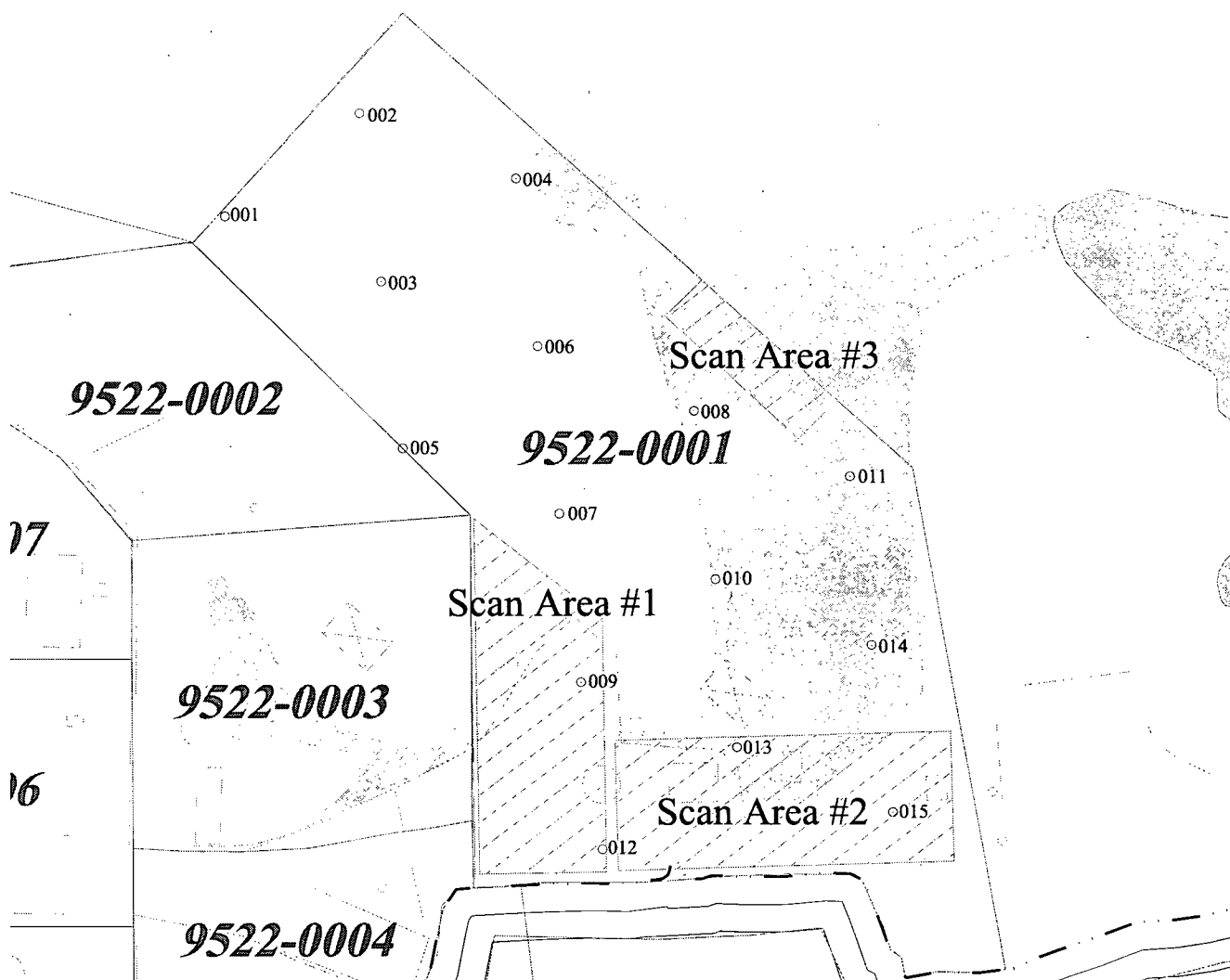


Figure 9

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## SCAN AREA LOCATION MAP & WORKSHEET

SURVEY AREA #: 9522

SURVEY UNIT #: 0001

DESCRIPTION OF AREA: Southeast Grounds (non-protected area)

### SCAN AREA #s 1 & 2

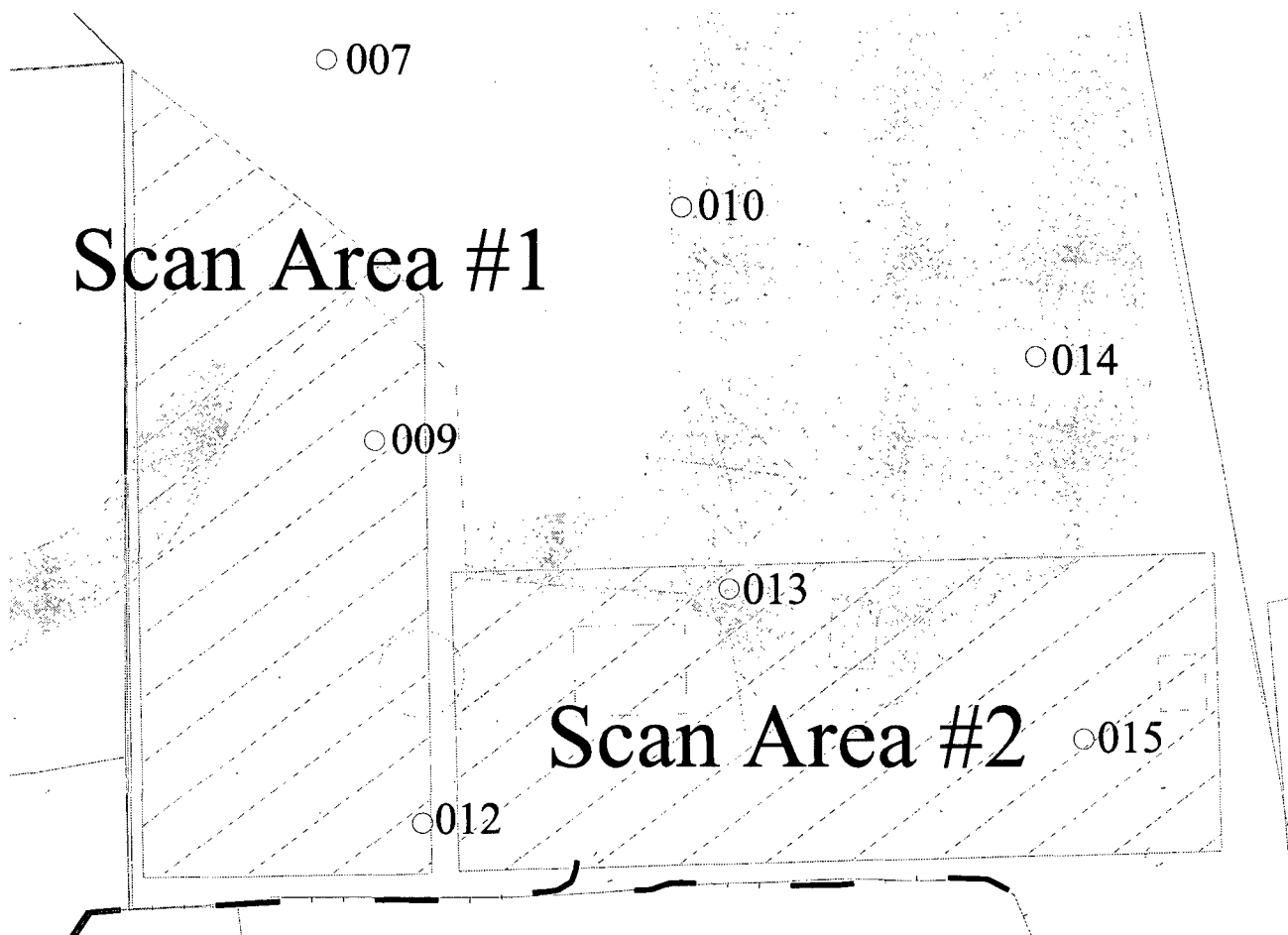


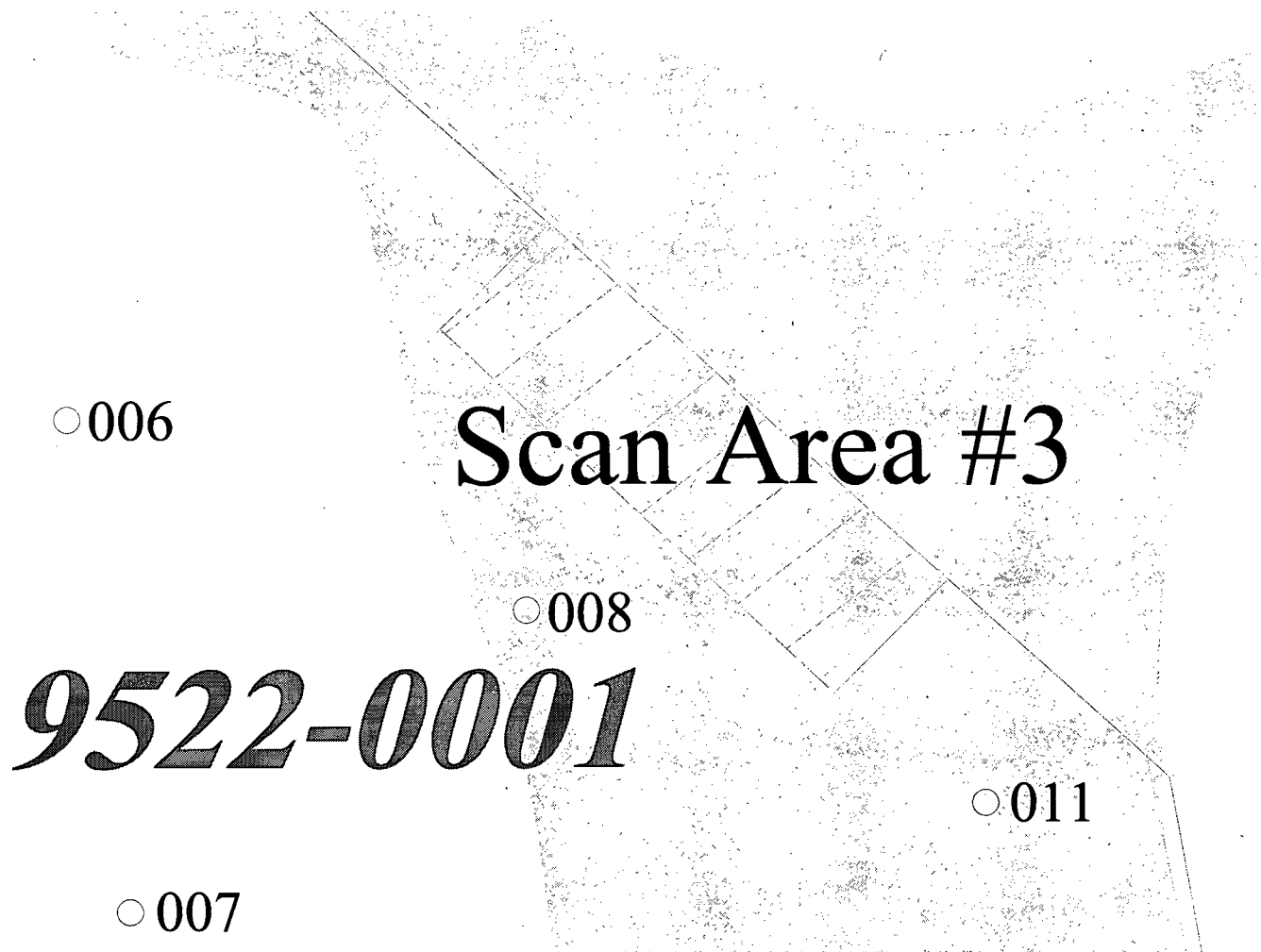
Figure 10

**SCAN AREA LOCATION MAP & WORKSHEET**

**SURVEY AREA #:** 9522 **SURVEY UNIT #:** 0001

**DESCRIPTION OF AREA:** Southeast Grounds (non-protected area)

**SCAN AREA # 3**





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## **ATTACHMENT 2 (SCAN RESULTS)**

SOUTHEAST SITE GROUNDS (NON-PROTECTED AREA)  
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Attachment 2

**SCAN RESULTS FOR SCAN STRIPS**

Survey Location	Log Date	Log Time	Reading	Alarm Level	>Alarm Level	E-600 S/N	Probe S/N
<b>SCAN AREA #1</b>							
9522-01-BC-01-01-0	11/16/2006	10:15:00	5.98E+03			1114	1014
9522-01-SC-01-01-0	11/16/2006	10:21:00	6.91E+03	7.08E+03		1114	1014
9522-01-BC-01-02-0	11/16/2006	10:21:00	7.31E+03			1114	1014
9522-01-SC-01-02-0	11/16/2006	10:24:00	6.15E+03	8.53E+03		1114	1014
9522-01-BC-01-03-0	11/16/2006	10:25:00	7.11E+03			1114	1014
9522-01-SC-01-03-0	11/16/2006	10:26:00	7.34E+03	8.31E+03		1114	1014
9522-01-BC-01-04-0	11/16/2006	10:28:00	6.93E+03			1114	1014
9522-01-SC-01-04-0	11/16/2006	10:29:00	5.90E+03	8.12E+03		1114	1014
9522-01-BC-01-05-0	11/16/2006	10:31:00	6.12E+03			1114	1014
9522-01-SC-01-05-0	11/16/2006	10:33:00	6.15E+03	7.24E+03		1114	1014
9522-01-BC-01-06-0	11/16/2006	10:34:00	6.53E+03			1114	1014
9522-01-SC-01-06-0	11/16/2006	10:37:00	6.44E+03	7.68E+03		1114	1014
9522-01-ER-01-06-1	11/16/2006	13:30:00	8.46E+03	7.68E+03	+	1114	1014
9522-01-BC-01-07-0	11/16/2006	10:38:00	6.83E+03			1114	1014
9522-01-SC-01-07-0	11/16/2006	10:40:00	6.47E+03	8.01E+03		1114	1014
9522-01-BC-01-08-0	11/16/2006	10:41:00	6.60E+03			1114	1014
9522-01-SC-01-08-0	11/16/2006	10:43:00	5.31E+03	7.76E+03		1114	1014
9522-01-BC-01-09-0	11/16/2006	10:47:00	6.45E+03			1114	1014
9522-01-SC-01-09-0	11/16/2006	10:54:00	5.75E+03	7.60E+03		1114	1014
9522-01-ER-01-09-1	11/16/2006	13:31:00	9.49E+03	7.60E+03	+	1114	1014
9522-01-BC-01-10-0	11/16/2006	10:56:00	6.81E+03			1114	1014
9522-01-SC-01-10-0	11/16/2006	11:03:00	6.53E+03	7.99E+03		1114	1014
9522-01-BC-01-11-0	11/16/2006	11:04:00	6.63E+03			1114	1014
9522-01-SC-01-11-0	11/16/2006	11:07:00	5.68E+03	7.79E+03		1114	1014
9522-01-BC-01-12-0	11/16/2006	11:07:00	6.98E+03			1114	1014
9522-01-SC-01-12-0	11/16/2006	11:12:00	6.69E+03	8.17E+03		1114	1014
9522-01-ER-01-12-1	11/16/2006	13:32:00	8.17E+03	8.17E+03		1114	1014
9522-01-BC-01-13-0	11/16/2006	11:13:00	7.25E+03			1114	1014
9522-01-SC-01-13-0	11/16/2006	11:19:00	7.62E+03	8.47E+03		1114	1014
9522-01-BC-01-14-0	11/16/2006	11:21:00	7.46E+03			1114	1014
9522-01-SC-01-14-0	11/16/2006	11:25:00	6.72E+03	8.69E+03		1114	1014
9522-01-BC-01-15-0	11/16/2006	11:25:00	7.16E+03			1114	1014
9522-01-SC-01-15-0	11/16/2006	11:30:00	7.54E+03	8.37E+03		1114	1014
9522-01-BC-01-16-0	11/16/2006	11:31:00	8.59E+03			1114	1014
9522-01-SC-01-16-0	11/16/2006	11:34:00	7.44E+03	9.91E+03		1114	1014
9522-01-BC-01-17-0	11/16/2006	11:35:00	7.32E+03			1114	1014
9522-01-SC-01-17-0	11/16/2006	11:38:00	7.98E+03	8.54E+03		1114	1014

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Survey Location	Log Date	Log Time	Reading	Alarm Level	>Alarm Level	E-600 S/N	Probe S/N
SCAN AREA #2							
9522-01-BC-02-01-0	11/15/2006	12:50:00	6.19E+03			1116	1006
9522-01-SC-02-01-0	11/15/2006	12:54:00	6.95E+03	7.31E+03		1116	1006
9522-01-BC-02-02-0	11/15/2006	12:54:00	6.86E+03			1116	1006
9522-01-SC-02-02-0	11/15/2006	12:57:00	6.64E+03	8.04E+03		1116	1006
9522-01-BC-02-03-0	11/15/2006	12:59:00	6.64E+03			1116	1006
9522-01-SC-02-03-0	11/15/2006	13:02:00	7.16E+03	7.80E+03		1116	1006
9522-01-ER-02-03-1	11/16/2006	7:16:00	6.93E+03	7.80E+03		1112	1013
9522-01-BC-02-04-0	11/15/2006	13:03:00	6.75E+03			1116	1006
9522-01-SC-02-04-0	11/15/2006	13:07:00	6.40E+03	7.92E+03		1116	1006
9522-01-BC-02-05-0	11/15/2006	13:10:00	6.31E+03			1116	1006
9522-01-SC-02-05-0	11/15/2006	13:14:00	6.56E+03	7.44E+03		1116	1006
9522-01-BC-02-06-0	11/15/2006	13:22:00	5.15E+03			1112	1013
9522-01-SC-02-06-0	11/15/2006	13:25:00	6.04E+03	6.17E+03		1112	1013
9522-01-BC-02-07-0	11/15/2006	13:26:00	5.66E+03			1112	1013
9522-01-SC-02-07-0	11/15/2006	13:28:00	4.95E+03	6.73E+03		1112	1013
9522-01-BC-02-08-0	11/15/2006	13:30:00	6.24E+03			1112	1013
9522-01-SC-02-08-0	11/15/2006	13:31:00	5.95E+03	7.37E+03		1112	1013
9522-01-BC-02-09-0	11/15/2006	13:35:00	5.95E+03			1112	1013
9522-01-SC-02-09-0	11/15/2006	13:38:00	5.23E+03	7.05E+03		1112	1013
9522-01-BC-02-10-0	11/15/2006	13:38:00	5.50E+03			1112	1013
9522-01-SC-02-10-0	11/15/2006	13:41:00	5.17E+03	6.56E+03		1112	1013
9522-01-ER-02-10-1	11/16/2006	7:17:00	8.10E+03	6.56E+03	+	1112	1013
9522-01-BC-02-11-0	11/15/2006	13:41:00	5.52E+03			1112	1013
9522-01-SC-02-11-0	11/15/2006	13:45:00	5.79E+03	6.58E+03		1112	1013
9522-01-BC-02-12-0	11/15/2006	13:46:00	5.71E+03			1112	1013
9522-01-SC-02-12-0	11/15/2006	13:48:00	5.02E+03	6.79E+03		1112	1013
9522-01-BC-02-13-0	11/15/2006	13:49:00	6.00E+03			1112	1013
9522-01-SC-02-13-0	11/15/2006	13:51:00	5.06E+03	7.11E+03		1112	1013
9522-01-BC-02-14-0	11/15/2006	13:54:00	4.90E+03			1112	1013
9522-01-SC-02-14-0	11/15/2006	13:57:00	4.96E+03	5.90E+03		1112	1013
9522-01-BC-02-15-0	11/15/2006	13:57:00	6.76E+03			1112	1013
9522-01-SC-02-15-0	11/15/2006	14:00:00	4.72E+03	7.93E+03		1112	1013
9522-01-BC-02-16-0	11/15/2006	14:02:00	4.21E+03			1112	1013
9522-01-SC-02-16-0	11/15/2006	14:05:00	5.08E+03	5.14E+03		1112	1013
9522-01-BC-02-17-0	11/15/2006	14:06:00	4.49E+03			1112	1013
9522-01-SC-02-17-0	11/15/2006	14:08:00	4.95E+03	5.45E+03		1112	1013
9522-01-BC-02-18-0	11/15/2006	14:09:00	6.15E+03			1112	1013
9522-01-SC-02-18-0	11/15/2006	14:10:00	6.85E+03	7.27E+03		1112	1013
9522-01-BC-02-19-0	11/15/2006	14:10:00	7.24E+03			1112	1013
9522-01-SC-02-19-0	11/15/2006	14:12:00	7.21E+03	8.46E+03		1112	1013
9522-01-ER-02-19-1	11/16/2006	7:18:00	9.68E+00	8.46E+03		1112	1013
9522-01-ER-02-19-2	11/16/2006	7:19:00	6.31E+03	8.46E+03		1112	1013

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

RELEASE RECORD  
Attachment 2

Survey Location	Log Date	Log Time	Reading	Alarm Level	>Alarm Level	E-600 S/N	Probe S/N
SCAN AREA #3							
9522-01-BC-03-01-0	11/21/2006	10:07:00	7.27E+03			1114	1014
9522-01-SC-03-01-0	11/21/2006	10:10:00	7.54E+03	8.49E+03		1114	1014
9522-01-BC-03-02-0	11/21/2006	10:11:00	8.89E+03			1114	1014
9522-01-SC-03-02-0	11/21/2006	10:13:00	6.32E+03	1.02E+04		1114	1014
9522-01-BC-03-03-0	11/21/2006	10:14:00	8.39E+03			1114	1014
9522-01-SC-03-03-0	11/21/2006	10:18:00	9.39E+03	9.70E+03		1114	1014
9522-01-ER-03-03-1	11/21/2006	12:54:00	1.10E+04	9.70E+03	+	1114	1014
9522-01-BC-03-04-0	11/21/2006	10:19:00	9.75E+03			1114	1014
9522-01-SC-03-04-0	11/21/2006	10:21:00	8.00E+03	1.12E+04		1114	1014

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

RELEASE RECORD  
Attachment 2

**SCAN RESULTS @ SAMPLE LOCATIONS**

Survey Location	Log Date	Log Time	Reading	Alarm Level	>Alarm Level	E-600 S/N	Probe S/N
9522-01-BL-00-01-0	11/9/2006	9:55:00	8.75E+03			1114	1014
9522-01-SL-00-01-0	11/9/2006	9:55:00	1.05E+04	1.01E+04	+	1114	1014
9522-01-BL-00-02-0	11/9/2006	9:54:00	9.72E+03			1114	1014
9522-01-SL-00-02-0	11/9/2006	9:54:00	1.10E+04	1.11E+04		1114	1014
9522-01-BL-00-03-0	11/9/2006	9:58:00	9.17E+03			1114	1014
9522-01-SL-00-03-0	11/9/2006	9:58:00	1.05E+04	1.05E+04		1114	1014
9522-01-BL-00-04-0	11/9/2006	14:05:00	1.03E+04			1114	1014
9522-01-SL-00-04-0	11/9/2006	14:05:00	1.08E+04	1.17E+04		1114	1014
9522-01-BL-00-05-0	11/9/2006	13:58:00	9.18E+03			1114	1014
9522-01-SL-00-05-0	11/9/2006	13:58:00	9.12E+03	1.05E+04		1114	1014
9522-01-BL-00-06-0	11/9/2006	14:00:00	8.72E+03			1114	1014
9522-01-SL-00-06-0	11/9/2006	14:00:00	1.03E+04	1.01E+04	+	1114	1014
9522-01-BL-00-08-0	11/9/2006	13:11:00	7.03E+03			1114	1014
9522-01-SL-00-08-0	11/9/2006	13:11:00	8.30E+03	8.23E+03	+	1114	1014
9522-01-BL-00-09-0	11/9/2006	10:57:00	6.52E+03			1114	1014
9522-01-SL-00-09-0	11/9/2006	10:57:00	6.96E+03	7.67E+03		1114	1014
9522-01-BL-00-10-0	11/9/2006	10:52:00	9.71E+03			1114	1014
9522-03-SL-00-10-0	11/9/2006	10:52:00	7.69E+03	1.11E+04		1114	1014
9522-01-BL-00-11-0	11/9/2006	13:12:00	7.13E+03			1114	1014
9522-01-SL-00-11-0	11/9/2006	13:12:00	7.41E+03	8.34E+03		1114	1014
9522-01-BL-00-12-0	11/9/2006	8:08:00	6.25E+03			1114	1014
9522-03-SL-00-12-0	11/9/2006	8:08:00	6.33E+03	7.38E+03		1114	1014
9522-01-BL-00-13-0	11/9/2006	13:37:00	4.78E+03			1114	1014
9522-01-SL-00-13-0	11/9/2006	13:37:00	4.55E+03	5.77E+03		1114	1014
9522-01-BL-00-14-0	11/9/2006	10:54:00	5.75E+03			1114	1014
9522-01-SL-00-14-0	11/9/2006	10:54:00	7.69E+03	6.83E+03	+	1114	1014
9522-01-BL-00-15-0	11/9/2006	8:15:00	7.90E+03			1114	1014
9522-01-SL-00-15-0	11/9/2006	8:15:00	9.75E+03	9.17E+03	+	1114	1014
9522-01-BL-00-16-0	11/15/2006	9:35:00	7.75E+03			1116	1006
9522-01-SL-00-16-0	11/15/2006	9:35:00	7.15E+03	9.01E+03		1116	1006

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

RELEASE RECORD

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**ATTACHMENT 3 (LABORATORY DATA)**

# **General Narrative**

**General Narrative  
for  
Connecticut Yankee Atomic Power Co.  
Work Order: 176896  
SDG: MSR#06-1505**

**December 01, 2006**

**Laboratory Identification:**

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

**Summary**

**Sample receipt**

The samples arrived at General Engineering Laboratories, LLC, Charleston, South Carolina on November 30, 2006 for analysis. Shipping container temperatures were checked, documented, and within specifications. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

**Sample Identification** The laboratory received the following samples:

<b><u>Laboratory Identification</u></b>	<b><u>Sample Description</u></b>
176896001	9522-0001-012F
176896002	9522-0001-015F
176896003	9522-0001-002F
176896004	9522-0001-001F
176896005	9522-0001-003F
176896006	9522-0001-010F
176896007	9522-0001-014F
176896008	9522-0001-009F
176896009	9522-0001-009FS
176896010	9522-0001-008F
176896011	9522-0001-011F
176896012	9522-0001-013F
176896013	9522-0001-005F
176896014	9522-0001-006F
176896015	9522-0001-004F
176896016	9522-0001-016F
176896017	9522-0001-017-I
176896018	9522-0001-018-I
176896019	9522-0001-019-I
176896020	9522-0001-020-I
176896021	9522-0001-021-I
176896022	9522-0001-022-I
176896023	9522-0001-023-I
176896024	9522-0001-024-I



**Items of Note**

There are no items to note.

**Case Narrative**

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

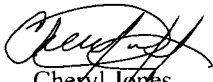
**Analytical Request**

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

**Data Package**

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

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



Cheryl Jones  
Project Manager

**List of current GEL Certifications as of 01 December 2006**

<b>State</b>	<b>Certification</b>
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**

## Chain of Custody Form

No. 2006-00666

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

Project Name: Haddam Neck Decommissioning						Analyses Requested						Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL							Comments:	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones															
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input checked="" type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.															
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size-&Type Code							Comment, Preservation	Lab Sample ID		
9522-0001-012F	11/09/06	0808	TS	G	BP	X									
9522-0001-015F	11/09/06	0815	TS	G	BP	X									
9522-0001-002F	11/09/06	0954	TS	G	BP	X									
9522-0001-001F	11/09/06	0955	TS	G	BP	X									
9522-0001-003F	11/09/06	0958	TS	G	BP	X									
9522-0001-010F	11/09/06	1052	TS	G	BP	X									
9522-0001-014F	11/09/06	1054	TS	G	BP		X								
9522-0001-009F	11/09/06	1057	TS	G	BP	X									
9522-0001-009FS	11/09/06	1057	TS	G	BP	X									
9522-0001-008F	11/09/06	1311	TS	G	BP		X								
9522-0001-011F	11/09/06	1312	TS	G	BP	X									
NOTES: PO #: 002332    MSR #: 06-1281 <sup># up to 1505</sup> SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA												Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other		Internal Container Temp.: ____ Deg. C Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By _____ Date/Time _____			2) Received By <u>Chava</u> <u>11/30/06 10:10</u> Date/Time _____									Bill of Lading # _____			
3) Relinquished By _____ Date/Time _____			4) Received By _____ Date/Time _____												

## Chain of Custody Form

No. 2006-00667

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

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- &Type Code	Analyses Requested						Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL							Comments:	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones															
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input checked="" type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.															
Sample Designation	Date	- Time										Comment, Preservation	Lab Sample ID		
9522-0001-013F	11/09/06	1337	TS	G	BP	X									
9522-0001-005F	11/09/06	1358	TS	G	BP	X									
9522-0001-006F	11/09/06	1400	TS	G	BP	X									
9522-0001-004F	11/09/06	1405	TS	G	BP	X									
NOTES: PO #: 002332    MSR #: 06-1381 <sup>11/12/06</sup> 1505    SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA												Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other		Internal Container Temp.: ____ Deg. C Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By _____ Date/Time _____			2) Received By <u>Cheryl Jones</u> <u>11/30/06</u> Date/Time <u>10:10</u>			3) Relinquished By _____ Date/Time _____		4) Received By _____ Date/Time _____		Bill of Lading # _____					

[illegible]

**No.** 2006-00677

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

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested						Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL						Comments:  1768961.		
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones															
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input checked="" type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.															
Sample Designation	Date	Time										Comment, Preservation	Lab Sample ID		
9522-0001-017-I	11/16/06	0716	TS	G	BP	X									
9522-0001-018-I	11/16/06	0717	TS	G	BP	X									
9522-0001-019-I	11/16/06	0718	TS	G	BP	X									
9522-0001-020-I	11/16/06	0719	TS	G	BP	X									
9522-0001-021-I	11/16/06	1335	TS	G	BP	X									
9522-0001-022-I	11/16/06	1340	TS	G	BP	X									
9522-0001-023-I	11/16/06	1345	TS	G	BP	X									
NOTES: PO #: 002332      MSR #: 06-1281 <sup>Sample</sup> <sub>1505</sub> SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA												Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other		Internal Container Temp.: ____ Deg. C Custody Sealed? Y N Custody Seal Intact? Y N	
1) Relinquished By _____ Date/Time _____			2) Received By <u>Chase</u> <u>11/30/06</u> Date/Time <u>10:10</u>									Bill of Lading # _____			
3) Relinquished By _____ Date/Time _____			4) Received By _____ Date/Time _____												

## Chain of Custody Form

No. 2006-00684

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

[illegible]



Figure 1. Sample Check-in List

Date/Time Received: 11-30-06 10:10

SDG#: MSR#06-1505, MSR#06-1506

Work Order Number: 176896, 176890

Shipping Container ID: See Continuation Sheet Chain of Custody # See Continuation Sheet

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 See Continuation Sheet
5. Vermiculite/packing materials is: Wet ☐ Dry ☒
6. Number of samples in shipping container: \_\_\_\_\_
7. Sample holding times exceeded? Yes ☐ No ☒

8. Samples have:

☒ tape \_\_\_\_\_ hazard labels  
\_\_\_\_\_ custody seals \_\_\_\_\_ appropriate sample labels

9. Samples are:

☒ in good condition \_\_\_\_\_ leaking  
\_\_\_\_\_ broken \_\_\_\_\_ have air bubbles

10. Were any anomalies identified in sample receipt? Yes ☒ No ☐
11. Description of anomalies (include sample numbers): not signed

Sample Custodian/Laboratory: C. G. Gause Date: 11-30-06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Yankee Atomic</u>	SDG/ARCOC/Work Order: <u>176890, 176896</u>
Date Received: <u>11/30/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>[Signature]</u>	<u>[Signature]</u>

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		<input checked="" type="checkbox"/>		Circle Coolant # ice bags blue ice dry ice none other (describe) <u>See Below</u>
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?		<input checked="" type="checkbox"/>		Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			<input checked="" type="checkbox"/>	
8 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?		<input checked="" type="checkbox"/>		<u>not signed</u>
14 Air Bill ,Tracking #'s, & Additional Comments	<u>7928 9092 2742-280</u> <u>7928 9092 2710-170</u> <u>7980 5266 8796-18</u>			<u>7980 5266 8785-160</u> <u>7988 9092 2731-170</u> <u>7928-9092 2753-170</u>
Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A Radiological Classification?	<input checked="" type="checkbox"/>			Maximum Counts Observed*: <u>150 cpm</u>
B PCB Regulated?	<input checked="" type="checkbox"/>			
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	<input checked="" type="checkbox"/>			Hazard Class Shipped: UN#:
D Regulated as a Foreign Soil?				
PM (or PMA) review of Hazard classification: <input checked="" type="checkbox"/> Initials <u>[Signature]</u> Date: <u>11/30/06</u>				



# SAMPLE RECEIPT & REVIEW FORM CONTINUATION FORM

Fed Ex	7928	9092	2742	-20°
	↓		2710	20°
			2731	17°
	↓	↓	2753	17°
	7980	5266	8796	-18°
			8785	-16°

Chain of Custody #'s -

	2006-00687
	- 00667
	- 00671
	- 00677
	- 00684
	- 00689
	- 00691
	- 00686
	- 00685
	- 00666
↓	- 00688

# **Data Review Qualifier Definitions**

## Data Review Qualifier Definitions

Qualifier    Explanation

\*    A quality control analyte recovery is outside of specified acceptance criteria

\*\*    Analyte is a surrogate compound

<    Result is less than value reported

>    Result is greater than value reported

^    RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL

A    The TIC is a suspected aldol-condensation product

B    Target analyte was detected in the associated blank

B    Metals-Either presence of analyte detected in the associated blank, or  
MDL/IDL < sample value < PQL

BD    Results are either below the MDC or tracer recovery is low

C    Analyte has been confirmed by GC/MS analysis

D    Results are reported from a diluted aliquot of the sample

d    5-day BOD-The 2:1 depletion requirement was not met for this sample

E    Organics-Concentration of the target analyte exceeds the instrument calibration range

E    Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria

H    Analytical holding time was exceeded

h    Preparation or preservation holding time was exceeded

J    Value is estimated

N    Metals-The Matrix spike sample recovery is not within specified control limits

N    Organics-Presumptive evidence based on mass spectral library search to make a tentative  
identification of the analyte (TIC). Quantitation is based on nearest internal standard  
response factor

N/A    Spike recovery limits do not apply. Sample concentration exceeds spike concentration  
by 4X or more

ND    Analyte concentration is not detected above the reporting limit

UI    Gamma Spectroscopy-Uncertain identification

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

Y    QC Samples were not spiked with this compound

Z    Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

# **RADIOLOGICAL ANALYSIS**

**Radiochemistry Case Narrative  
Connecticut Yankee Atomic Power Co. (YANK)  
Work Order 176896**

**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:	592107
Prep Batch Number:	592100
Dry Soil Prep GL-RAD-A-021 Batch Number:	592095

<b>Sample ID</b>	<b>Client ID</b>
176896007	9522-0001-014F
176896010	9522-0001-008F
1201238056	Method Blank (MB)
1201238057	176896007(9522-0001-014F) Sample Duplicate (DUP)
1201238058	176896007(9522-0001-014F) Matrix Spike (MS)
1201238059	Laboratory Control Sample (LCS)

**SOP Reference**

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

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

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

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

**Designated QC**

The following sample was used for QC: 176896007 (9522-0001-014F).

**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>Alphaspec Pu, 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:	592108
Prep Batch Number:	592100
Dry Soil Prep GL-RAD-A-021 Batch Number:	592095

<b>Sample ID</b>	<b>Client ID</b>
176896007	9522-0001-014F
176896010	9522-0001-008F
1201238060	Method Blank (MB)
1201238061	176896007(9522-0001-014F) Sample Duplicate (DUP)
1201238062	176896007(9522-0001-014F) Matrix Spike (MS)
1201238063	Laboratory Control Sample (LCS)

#### **SOP Reference**

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

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

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

##### **Sample Geometry**

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

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

##### **Blank Information**

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

##### **Designated QC**

The following sample was used for QC: 176896007 (9522-0001-014F).

##### **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 prep 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:	592109
Prep Batch Number:	592100
Dry Soil Prep GL-RAD-A-021 Batch Number:	592095

<b>Sample ID</b>	<b>Client ID</b>
176896007	9522-0001-014F
176896010	9522-0001-008F
1201238064	Method Blank (MB)
1201238065	176896007(9522-0001-014F) Sample Duplicate (DUP)
1201238066	176896007(9522-0001-014F) Matrix Spike (MS)
1201238067	Laboratory Control Sample (LCS)

#### **SOP Reference**

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

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

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

##### **Sample Geometry**

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

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

##### **Blank Information**

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

##### **Designated QC**

The following sample was used for QC: 176896007 (9522-0001-014F).

##### **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>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:	592140
Prep Batch Number:	592095

<b>Sample ID</b>	<b>Client ID</b>
176896001	9522-0001-012F
176896002	9522-0001-015F
176896003	9522-0001-002F
176896004	9522-0001-001F
176896005	9522-0001-003F
176896006	9522-0001-010F
176896007	9522-0001-014F
176896008	9522-0001-009F
176896009	9522-0001-009FS
176896010	9522-0001-008F
176896011	9522-0001-011F
176896012	9522-0001-013F
176896013	9522-0001-005F
176896014	9522-0001-006F
176896015	9522-0001-004F
176896016	9522-0001-016F
176896017	9522-0001-017-I
176896018	9522-0001-018-I
176896019	9522-0001-019-I
176896020	9522-0001-020-I
1201238138	Method Blank (MB)
1201238139	176896001(9522-0001-012F) Sample Duplicate (DUP)
1201238140	Laboratory Control Sample (LCS)

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 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: 176896001 (9522-0001-012F).

**QC Information**

All of the QC samples met the required acceptance limits.

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

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

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

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

**Additional Comments**

The sample and the duplicate, 1201238139 (9522-0001-012F) and 176896001 (9522-0001-012F), did not meet the relative percent difference requirement for Pb-212, however they do meet the relative error ratio requirement with value of 2.89.

**Qualifier information**

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high peak-width.	Actinium-228	176896012
		Bismuth-212	176896005
		Cesium-137	176896017
		Cobalt-60	1201238139
UI	Data rejected due to interference.	Europium-155	176896005
UI	Data rejected due to low abundance.	Cesium-134	176896001
			176896003
			176896006
			176896014
			176896015
			176896016
		Niobium-94	176896008
UI	Data rejected due to no valid peak.	Cobalt-60	176896007

#### **Method/Analysis Information**

**Product:** Gamma,Solid-FSS GAM & ALL FSS 226 Ingrowth Waived  
**Analytical Method:** EML HASL 300, 4.5.2.3  
**Prep Method:** Dry Soil Prep  
**Analytical Batch Number:** 592142  
**Prep Batch Number:** 592096

Sample ID	Client ID
176896021	9522-0001-021-I
176896022	9522-0001-022-I
176896023	9522-0001-023-I
176896024	9522-0001-024-I
1201238141	Method Blank (MB)
1201238142	176890002(9522-0004-001FS) Sample Duplicate (DUP)
1201238143	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 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: 176890002 (9522-0004-001FS).

**QC Information**

All of the QC samples met the required acceptance limits.

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

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

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

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

**Additional Comments**

The sample and the duplicate, 1201238142 (9522-0004-001FS), did not meet the relative percent difference requirement for Ac-228 and Tl-208, however they do meet the relative error ratio requirement with value of 2.44 for Ac-228 and 1.80 for Tl-208.



### Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to low abundance.	Cesium-134	176896021
			176896024
			1201238142
		Thallium-208	1201238141

### 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:	592186
Prep Batch Number:	592100
Dry Soil Prep GL-RAD-A-021 Batch Number:	592095

Sample ID	Client ID
176896007	9522-0001-014F
176896010	9522-0001-008F
1201238231	Method Blank (MB)
1201238232	176896007(9522-0001-014F) Sample Duplicate (DUP)
1201238233	176896007(9522-0001-014F) Matrix Spike (MS)
1201238234	Laboratory Control Sample (LCS)

### **SOP Reference**

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

### Calibration Information:

#### **Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

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

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

**Designated QC**

The following sample was used for QC: 176896007 (9522-0001-014F).

**QC Information**

Refer to Non-Conformance Report.

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

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

**Chemical Recoveries**

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

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

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

NCR 390300 was generated due to Container scanning event for custody missed and Failed RPD for DUP. 1. Sample 176896007 and 1201238232 did not meet the relative percent difference due to the matrix of the sample. Large amounts of the sample was used to achieve the detection limit. 2. The analyst did not scan the samples 176890005, 176890008, 176896007, and 176896010 into the batch prior to analysis, however the samples did remain in their custody at all times. The error has been corrected and the analyst has been instructed on the proper scanning procedures. 1. Client was contacted and granted relief to report results. 2. Reporting results.

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

## **Method/Analysis Information**

**Product:** Liquid Scint Tc99, Solid-ALL FSS  
**Analytical Method:** DOE EML HASL-300, Tc-02-RC Modified  
**Analytical Batch Number:** 592312

<b>Sample ID</b>	<b>Client ID</b>
176896007	9522-0001-014F
176896010	9522-0001-008F
1201238554	Method Blank (MB)
1201238555	176896007(9522-0001-014F) Sample Duplicate (DUP)
1201238556	176896007(9522-0001-014F) Matrix Spike (MS)
1201238557	Laboratory Control Sample (LCS)

### **SOP Reference**

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

### **Calibration Information:**

#### **Calibration Information**

All initial and continuing calibration requirements have been met.

#### **Standards Information**

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

#### **Sample Geometry**

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

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

#### **Blank Information**

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

#### **Designated QC**

The following sample was used for QC: 176896007 (9522-0001-014F).

#### **QC Information**

All of the QC samples met the required acceptance limits.

### **Technical Information:**

#### **Holding Time**

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

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

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

**Additional Comments**

The blank result for 1201238554 (MB) is greater than the MDA but less than the detection limit.

**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:	592304
Prep Batch Number:	592100
Dry Soil Prep GL-RAD-A-021 Batch Number:	592095

<b>Sample ID</b>	<b>Client ID</b>
176896007	9522-0001-014F
176896010	9522-0001-008F
1201238526	Method Blank (MB)
1201238527	176518004(9504-0000-004F) Sample Duplicate (DUP)
1201238528	176518004(9504-0000-004F) Matrix Spike (MS)
1201238529	Laboratory Control Sample (LCS)

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this

narrative has been analyzed in accordance with GL-RAD-A-040 REV# 3.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

**Quality Control (QC) Information:**

**Blank Information**

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

**Designated QC**

The following sample was used for QC: 176518004 (9504-0000-004F).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

Samples 176896007 (9522-0001-014F) and 176896010 (9522-0001-008F) were repped due to high blank activity.

**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 Ni63, Solid-ALL FSS</b>
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:	592310
Prep Batch Number:	592100
Dry Soil Prep GL-RAD-A-021 Batch Number:	592095

<b>Sample ID</b>	<b>Client ID</b>
176896007	9522-0001-014F
176896010	9522-0001-008F
1201238546	Method Blank (MB)
1201238547	176896007(9522-0001-014F) Sample Duplicate (DUP)
1201238548	176896007(9522-0001-014F) Matrix Spike (MS)
1201238549	Laboratory Control Sample (LCS)

#### **SOP Reference**

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

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

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

##### **Sample Geometry**

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

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

##### **Blank Information**

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

##### **Designated QC**

The following sample was used for QC: 176896007 (9522-0001-014F).

##### **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>LSC, Tritium Dist, Solid - 3 pCi/g</b>
Analytical Method:	EPA 906.0 Modified
Analytical Batch Number:	593064

<b>Sample ID</b>	<b>Client ID</b>
176896007	9522-0001-014F
176896010	9522-0001-008F
1201240325	Method Blank (MB)
1201240326	176890008(9522-0004-007F) Sample Duplicate (DUP)
1201240327	176890008(9522-0004-007F) Matrix Spike (MS)
1201240328	Laboratory Control Sample (LCS)

**SOP Reference**

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

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

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

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

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

**Designated QC**

The following sample was used for QC: 176890008 (9522-0004-007F).

**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 176896007 (9522-0001-014F) and 176896010 (9522-0001-008F) were repped due to low/high recovery.

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

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

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**



**Product:** Liquid Scint C14, Solid All,FSS

Analytical Method: EPA EERF C-01 Modified

Analytical Batch Number: 592313

Sample ID	Client ID
176896007	9522-0001-014F
176896010	9522-0001-008F
1201238558	Method Blank (MB)
1201238559	176896007(9522-0001-014F) Sample Duplicate (DUP)
1201238560	176896007(9522-0001-014F) Matrix Spike (MS)
1201238561	Laboratory Control Sample (LCS)

### **SOP Reference**

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

### **Calibration Information:**

#### **Calibration Information**

All initial and continuing calibration requirements have been met.

#### **Standards Information**

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

#### **Sample Geometry**

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

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

#### **Blank Information**

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

#### **Designated QC**

The following sample was used for QC: 176896007 (9522-0001-014F).

#### **QC Information**

All of the QC samples met the required acceptance limits.

### **Technical Information:**

#### **Holding Time**

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

#### **Preparation Information**

All preparation criteria have been met for these analyses.

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

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

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

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

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation:**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

**The following data validator verified the information presented in this case narrative:**

Reviewer/Date:  12/7/06

### COMPANY - WIDE NONCONFORMANCE REPORT

<b>Mo.Day Yr.</b> 07-DEC-06	<b>Division:</b> Radiochemistry	<b>Quality Criteria:</b> Specifications	<b>Type:</b> Process
<b>Instrument Type:</b> GFPC	<b>Test / Method:</b> EPA 905.0 Modified	<b>Matrix Type:</b> Solid	<b>Client Code:</b> YANK
<b>Batch ID:</b> 592186	<b>Sample Numbers:</b> See Below		
<b>Potentially affected work order(s)(SDG): 176890(MSR#06-1506),176896(MSR#06-1505)</b> <b>Application Issues:</b> Container scanning event for custody missed Failed RPD for DUP			
<b>Specification and Requirements</b> <b>Nonconformance Description:</b>		<b>NRG Disposition:</b>	
1. Sample 176896007 and 1201238232 did not meet the relative percent difference due to the matrix of the sample. Large amounts of the sample was used to achieve the detection limit.  2. The analyst did not scan the samples 176890005, 176890008, 176896007, and 176896010 into the batch prior to analysis, however the samples did remain in their custody at all times. The error has been corrected and the analyst has been instructed on the proper scanning procedures.		1. Client was contacted and granted relief to report results.  2. Reporting results.	

**Originator's Name:**

Melanie Aycock 07-DEC-06

**Data Validator/Group Leader:**

Heather Anderson 07-DEC-06

**Quality Review:**

**Director:**

# **SAMPLE DATA SUMMARY**

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis Report for

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: MSR#06-1505 GEL Work Order: 176896

**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 General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.



Reviewed by

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-012F  
Sample ID: 176896001  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 12.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.690	+/-0.169	0.0534	+/-0.169	0.119	pCi/g		MJH1	12/05/06	0937	592140	1
Americium-241	U	-0.0319	+/-0.0718	0.0666	+/-0.0718	0.138	pCi/g						
Bismuth-212		0.737	+/-0.318	0.131	+/-0.318	0.285	pCi/g						
Bismuth-214		0.474	+/-0.0988	0.035	+/-0.0988	0.0749	pCi/g						
Cesium-134	UI	0.00	+/-0.0205	0.0237	+/-0.0205	0.0508	pCi/g						
Cesium-137		0.0504	+/-0.044	0.0183	+/-0.044	0.0393	pCi/g						
Cobalt-60	U	0.0122	+/-0.0226	0.0208	+/-0.0226	0.046	pCi/g						
Europium-152	U	-0.0356	+/-0.0562	0.0489	+/-0.0562	0.104	pCi/g						
Europium-154	U	0.0201	+/-0.0657	0.0588	+/-0.0657	0.130	pCi/g						
Europium-155	U	-0.014	+/-0.0582	0.0529	+/-0.0582	0.110	pCi/g						
Lead-212		0.637	+/-0.0778	0.0303	+/-0.0778	0.0633	pCi/g						
Lead-214		0.591	+/-0.0967	0.0343	+/-0.0967	0.0727	pCi/g						
Manganese-54	U	0.00981	+/-0.0206	0.0184	+/-0.0206	0.040	pCi/g						
Niobium-94	U	0.0153	+/-0.0127	0.0164	+/-0.0127	0.0354	pCi/g						
Potassium-40		8.72	+/-0.980	0.153	+/-0.980	0.351	pCi/g						
Radium-226		0.474	+/-0.0988	0.035	+/-0.0988	0.0749	pCi/g						
Silver-108m	U	-0.00701	+/-0.0167	0.0144	+/-0.0167	0.0309	pCi/g						
Thallium-208		0.169	+/-0.0436	0.018	+/-0.0436	0.0387	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1301	592095

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-012F  
Sample ID: 176896001

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-015F  
Sample ID: 176896002  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 12%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.51	+/-0.294	0.114	+/-0.294	0.245	pCi/g		MJH1	12/05/06	0938	592140	1
Americium-241	U	-0.0253	+/-0.0587	0.0463	+/-0.0587	0.0956	pCi/g						
Bismuth-212		0.931	+/-0.590	0.277	+/-0.590	0.588	pCi/g						
Bismuth-214		1.64	+/-0.209	0.0585	+/-0.209	0.124	pCi/g						
Cesium-134	U	0.0709	+/-0.049	0.0454	+/-0.049	0.096	pCi/g						
Cesium-137	U	0.0411	+/-0.0451	0.0407	+/-0.0451	0.0857	pCi/g						
Cobalt-60	U	0.0138	+/-0.0451	0.0388	+/-0.0451	0.0844	pCi/g						
Europium-152	U	-0.0674	+/-0.0964	0.0776	+/-0.0964	0.163	pCi/g						
Europium-154	U	-0.076	+/-0.166	0.113	+/-0.166	0.244	pCi/g						
Europium-155	U	0.107	+/-0.126	0.0783	+/-0.126	0.162	pCi/g						
Lead-212		1.39	+/-0.132	0.0745	+/-0.132	0.153	pCi/g						
Lead-214		1.88	+/-0.166	0.0577	+/-0.166	0.121	pCi/g						
Manganese-54	U	-0.0436	+/-0.0442	0.0335	+/-0.0442	0.0717	pCi/g						
Niobium-94	U	0.00226	+/-0.0372	0.0316	+/-0.0372	0.0671	pCi/g						
Potassium-40		23.1	+/-1.70	0.274	+/-1.70	0.614	pCi/g						
Radium-226		1.64	+/-0.209	0.0585	+/-0.209	0.124	pCi/g						
Silver-108m	U	0.038	+/-0.0319	0.0296	+/-0.0319	0.0623	pCi/g						
Thallium-208		0.504	+/-0.0769	0.0289	+/-0.0769	0.0619	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1301	592095

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-015F  
Sample ID: 176896002

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

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

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## Certificate of Analysis

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Address : 362 Injun Hollow Rd

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-002F  
Sample ID: 176896003  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 28.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.995	+/-0.250	0.0769	+/-0.250	0.169	pCi/g						
Americium-241	U	0.0119	+/-0.0358	0.0316	+/-0.0358	0.0653	pCi/g						
Bismuth-212		1.12	+/-0.360	0.144	+/-0.360	0.318	pCi/g						
Bismuth-214		1.07	+/-0.119	0.0361	+/-0.119	0.0786	pCi/g						
Cesium-134	UI	0.00	+/-0.0531	0.0315	+/-0.0531	0.0675	pCi/g						
Cesium-137		0.666	+/-0.0684	0.0281	+/-0.0684	0.060	pCi/g						
Cobalt-60	U	0.024	+/-0.0293	0.0273	+/-0.0293	0.0607	pCi/g						
Europium-152	U	-0.0805	+/-0.0712	0.0546	+/-0.0712	0.116	pCi/g						
Europium-154	U	0.00768	+/-0.0971	0.0823	+/-0.0971	0.181	pCi/g						
Europium-155	U	0.0333	+/-0.0534	0.0507	+/-0.0534	0.106	pCi/g						
Lead-212		1.13	+/-0.0802	0.0314	+/-0.0802	0.0659	pCi/g						
Lead-214		1.14	+/-0.102	0.0422	+/-0.102	0.0892	pCi/g						
Manganese-54	U	0.00223	+/-0.0303	0.0253	+/-0.0303	0.0548	pCi/g						
Niobium-94	U	-0.00704	+/-0.0237	0.0194	+/-0.0237	0.0421	pCi/g						
Potassium-40		11.9	+/-1.13	0.185	+/-1.13	0.431	pCi/g						
Radium-226		1.07	+/-0.119	0.0361	+/-0.119	0.0786	pCi/g						
Silver-108m	U	-0.0199	+/-0.025	0.0209	+/-0.025	0.0444	pCi/g						
Thallium-208		0.339	+/-0.0558	0.0203	+/-0.0558	0.0441	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1301	592095

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-002F  
Sample ID: 176896003

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

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

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-001F  
Sample ID: 176896004  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 29.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.17	+/-0.269	0.0746	+/-0.269	0.166	pCi/g						
Americium-241	U	0.0035	+/-0.102	0.0784	+/-0.102	0.163	pCi/g						
Bismuth-212		0.820	+/-0.401	0.163	+/-0.401	0.359	pCi/g						
Bismuth-214		0.886	+/-0.136	0.0383	+/-0.136	0.0835	pCi/g						
Cesium-134	U	0.0563	+/-0.032	0.0313	+/-0.032	0.0675	pCi/g						
Cesium-137		0.677	+/-0.0983	0.0236	+/-0.0983	0.0513	pCi/g						
Cobalt-60	U	-0.000186	+/-0.0276	0.0234	+/-0.0276	0.0531	pCi/g						
Europium-152	U	0.0743	+/-0.107	0.0631	+/-0.107	0.134	pCi/g						
Europium-154	U	-0.035	+/-0.0882	0.071	+/-0.0882	0.159	pCi/g						
Europium-155	U	0.0447	+/-0.0777	0.0651	+/-0.0777	0.136	pCi/g						
Lead-212		1.17	+/-0.129	0.0333	+/-0.129	0.0703	pCi/g						
Lead-214		0.965	+/-0.167	0.0402	+/-0.167	0.0859	pCi/g						
Manganese-54	U	0.0156	+/-0.0284	0.0252	+/-0.0284	0.0549	pCi/g						
Niobium-94	U	-0.00061	+/-0.025	0.0212	+/-0.025	0.046	pCi/g						
Potassium-40		11.5	+/-1.33	0.154	+/-1.33	0.372	pCi/g						
Radium-226		0.886	+/-0.136	0.0383	+/-0.136	0.0835	pCi/g						
Silver-108m	U	-0.006	+/-0.0245	0.0196	+/-0.0245	0.0422	pCi/g						
Thallium-208		0.339	+/-0.0726	0.0207	+/-0.0726	0.0451	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1301	592095

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-001F  
Sample ID: 176896004

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
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- > Result is greater than value reported  
A The TIC is a suspected aldol-condensation product  
B Target analyte was detected in the associated blank  
BD Results are either below the MDC or tracer recovery is low  
C Analyte has been confirmed by GC/MS analysis  
D Results are reported from a diluted aliquot of the sample  
H Analytical holding time was exceeded  
J Value is estimated  
N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more.  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy—Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL  
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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: December 7, 2006

Client Sample ID: 9522-0001-003F  
Sample ID: 176896005  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 32.4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.25	+/-0.396	0.112	+/-0.396	0.252	pCi/g						
Americium-241	U	0.000605	+/-0.0563	0.0471	+/-0.0563	0.0981	pCi/g						
Bismuth-212	UI	0.00	+/-0.615	0.280	+/-0.615	0.614	pCi/g						
Bismuth-214		1.03	+/-0.177	0.0759	+/-0.177	0.163	pCi/g						
Cesium-134	U	0.0945	+/-0.0985	0.0514	+/-0.0985	0.111	pCi/g						
Cesium-137		1.17	+/-0.117	0.0355	+/-0.117	0.0777	pCi/g						
Cobalt-60	U	-0.00228	+/-0.0553	0.0444	+/-0.0553	0.0996	pCi/g						
Europium-152	U	-0.105	+/-0.115	0.0902	+/-0.115	0.192	pCi/g						
Europium-154	U	0.000711	+/-0.134	0.109	+/-0.134	0.246	pCi/g						
Europium-155	UI	0.00	+/-0.148	0.0709	+/-0.148	0.149	pCi/g						
Lead-212		1.31	+/-0.120	0.0467	+/-0.120	0.0987	pCi/g						
Lead-214		1.40	+/-0.186	0.0627	+/-0.186	0.134	pCi/g						
Manganese-54	U	-0.0278	+/-0.0456	0.0357	+/-0.0456	0.0789	pCi/g						
Niobium-94	U	0.00883	+/-0.0412	0.0359	+/-0.0412	0.0779	pCi/g						
Potassium-40		12.5	+/-1.63	0.310	+/-1.63	0.728	pCi/g						
Radium-226		1.03	+/-0.177	0.0759	+/-0.177	0.163	pCi/g						
Silver-108m	U	0.00935	+/-0.0366	0.031	+/-0.0366	0.0667	pCi/g						
Thallium-208		0.419	+/-0.102	0.0366	+/-0.102	0.0794	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1301	592095

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-003F  
Sample ID: 176896005

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

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

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

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-010F  
Sample ID: 176896006  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 29.2%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.938	+/-0.172	0.0553	+/-0.172	0.118	pCi/g						
Americium-241	U	-0.00666	+/-0.142	0.0939	+/-0.142	0.194	pCi/g						
Bismuth-212		0.656	+/-0.255	0.115	+/-0.255	0.245	pCi/g						
Bismuth-214		0.662	+/-0.0785	0.0307	+/-0.0785	0.0645	pCi/g						
Cesium-134	UI	0.00	+/-0.0336	0.022	+/-0.0336	0.0462	pCi/g						
Cesium-137		0.239	+/-0.0412	0.0191	+/-0.0412	0.040	pCi/g						
Cobalt-60	U	-0.00776	+/-0.0226	0.0157	+/-0.0226	0.0343	pCi/g						
Europium-152	U	-0.00378	+/-0.0476	0.0414	+/-0.0476	0.0866	pCi/g						
Europium-154	U	-0.00764	+/-0.0591	0.050	+/-0.0591	0.108	pCi/g						
Europium-155	U	0.0605	+/-0.0604	0.0556	+/-0.0604	0.115	pCi/g						
Lead-212		0.879	+/-0.0601	0.0253	+/-0.0601	0.0525	pCi/g						
Lead-214		0.782	+/-0.0885	0.0294	+/-0.0885	0.0615	pCi/g						
Manganese-54	U	0.0031	+/-0.0252	0.0179	+/-0.0252	0.0377	pCi/g						
Niobium-94	U	0.00226	+/-0.0167	0.0146	+/-0.0167	0.0308	pCi/g						
Potassium-40		14.3	+/-0.878	0.149	+/-0.878	0.325	pCi/g						
Radium-226		0.662	+/-0.0785	0.0307	+/-0.0785	0.0645	pCi/g						
Silver-108m	U	0.000593	+/-0.0168	0.0144	+/-0.0168	0.0302	pCi/g						
Thallium-208		0.267	+/-0.0434	0.0153	+/-0.0434	0.0323	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1301	592095

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported



# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-010F  
Sample ID: 176896006

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-014F  
Sample ID: 176896007  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 21.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.105	+/-0.153	0.0841	+/-0.154	0.258	pCi/g	MXA	12/03/06	0901	592107	1	
Curium-242	U	0.075	+/-0.129	0.066	+/-0.130	0.231	pCi/g						
Curium-243/244	U	0.0863	+/-0.154	0.0942	+/-0.154	0.278	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0367	+/-0.103	0.0633	+/-0.103	0.222	pCi/g	MXA	12/03/06	0901	592108	2	
Plutonium-239/240	U	0.0268	+/-0.071	0.0316	+/-0.0711	0.159	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	6.51	+/-7.02	5.58	+/-7.05	11.8	pCi/g	MXA	12/05/06	1921	592109	3	
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.657	+/-0.178	0.0615	+/-0.178	0.135	pCi/g	MJH1	12/05/06	0941	592140	4	
Americium-241	U	0.0409	+/-0.0598	0.0551	+/-0.0598	0.115	pCi/g						
Bismuth-212		0.561	+/-0.311	0.147	+/-0.311	0.319	pCi/g						
Bismuth-214		0.601	+/-0.107	0.0348	+/-0.107	0.0747	pCi/g						
Cesium-134	U	0.047	+/-0.0365	0.0255	+/-0.0365	0.0546	pCi/g						
Cesium-137		0.291	+/-0.0636	0.019	+/-0.0636	0.0411	pCi/g						
Cobalt-60	UI	0.00	+/-0.0155	0.011	+/-0.0155	0.0267	pCi/g						
Europium-152	U	-0.0841	+/-0.0577	0.0444	+/-0.0577	0.0948	pCi/g						
Europium-154	U	-0.00935	+/-0.0615	0.0498	+/-0.0615	0.113	pCi/g						
Europium-155	U	-0.0271	+/-0.0552	0.0514	+/-0.0552	0.107	pCi/g						
Lead-212		0.717	+/-0.0854	0.027	+/-0.0854	0.0567	pCi/g						
Lead-214		0.592	+/-0.105	0.0341	+/-0.105	0.0725	pCi/g						
Manganese-54	U	0.0142	+/-0.0277	0.0176	+/-0.0277	0.0386	pCi/g						
Niobium-94	U	-0.00245	+/-0.0192	0.0167	+/-0.0192	0.0362	pCi/g						
Potassium-40		8.88	+/-1.04	0.136	+/-1.04	0.319	pCi/g						
Radium-226		0.601	+/-0.107	0.0348	+/-0.107	0.0747	pCi/g						
Silver-108m	U	0.019	+/-0.0203	0.0187	+/-0.0203	0.0396	pCi/g						
Thallium-208		0.204	+/-0.0498	0.0175	+/-0.0498	0.0378	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.766	+/-0.116	0.0297	+/-0.118	0.0719	pCi/g	KSD1	12/07/06	1236	592186		
<b>Rad Liquid Scintillation Analysis</b>													

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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: December 7, 2006

Client Sample ID: 9522-0001-014F  
Sample ID: 176896007

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid - 3 pCi/g</i>													
Tritium	U	-0.536	+/-1.21	1.02	+/-1.21	2.10	pCi/g		DFA1	12/06/06	0204	593064	6
<i>Liquid Scint C14, Solid ALL FSS</i>													
Carbon-14	U	-0.0179	+/-0.0898	0.0758	+/-0.0898	0.155	pCi/g		AXD2	12/01/06	1937	592313	8
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	-3.56	+/-43.4	33.8	+/-43.4	71.3	pCi/g		MXP1	12/02/06	1849	592304	9
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	-2.44	+/-12.1	10.2	+/-12.1	21.5	pCi/g		MXP1	12/04/06	2048	592310	10
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.194	+/-0.161	0.130	+/-0.162	0.268	pCi/g		KXR1	12/06/06	1754	592312	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1301	592095

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	81	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	83	(15%-125%)
Plutonium-241	Liquid Scint Pu241, Solid-ALL FS	87	(25%-125%)
Strontium-90	GFPC, Sr90, solid-ALL FSS	30	(25%-125%)

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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: December 7, 2006

Client Sample ID: 9522-0001-014F  
Sample ID: 176896007

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mt
Carrier/Tracer Recovery	GFPC, Sr90, solid-ALL	FSS			30		(25%-125%)					
Iron-55	Liquid Scint Fe55, Solid-ALL	FS			54		(15%-125%)					
Nickel-63	Liquid Scint Ni63, Solid-ALL	FS			68		(25%-125%)					
Carrier/Tracer Recovery	Liquid Scint Ni63, Solid-ALL	FS			68		(25%-125%)					
Technetium-99	Liquid Scint Tc99, Solid-ALL	FS			77		(15%-125%)					
Carrier/Tracer Recovery	Liquid Scint Tc99, Solid-ALL	FS			77		(15%-125%)					

### Notes:

The Qualifiers in this report are defined as follows :

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

The above sample is reported on a dry weight basis.

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-009F  
Sample ID: 176896008  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 12.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.739	+/-0.142	0.0521	+/-0.142	0.113	pCi/g		MJH1	12/05/06	0942	592140	1
Americium-241	U	0.0274	+/-0.094	0.0651	+/-0.094	0.135	pCi/g						
Bismuth-212		0.641	+/-0.225	0.120	+/-0.225	0.257	pCi/g						
Bismuth-214		0.598	+/-0.0874	0.0329	+/-0.0874	0.0695	pCi/g						
Cesium-134	U	0.0159	+/-0.0259	0.0208	+/-0.0259	0.0442	pCi/g						
Cesium-137		0.116	+/-0.0344	0.0166	+/-0.0344	0.0353	pCi/g						
Cobalt-60	U	-0.00391	+/-0.0203	0.0171	+/-0.0203	0.0373	pCi/g						
Europium-152	U	-0.0172	+/-0.0519	0.0442	+/-0.0519	0.0927	pCi/g						
Europium-154	U	-0.017	+/-0.0525	0.0437	+/-0.0525	0.0958	pCi/g						
Europium-155	U	0.0315	+/-0.0787	0.0532	+/-0.0787	0.110	pCi/g						
Lead-212		0.738	+/-0.0618	0.0265	+/-0.0618	0.0551	pCi/g						
Lead-214		0.582	+/-0.0921	0.0307	+/-0.0921	0.0646	pCi/g						
Manganese-54	U	0.0123	+/-0.0122	0.0188	+/-0.0122	0.0398	pCi/g						
Niobium-94	UI	0.00	+/-0.0402	0.0154	+/-0.0402	0.0327	pCi/g						
Potassium-40		10.4	+/-0.755	0.105	+/-0.755	0.240	pCi/g						
Radium-226		0.598	+/-0.0874	0.0329	+/-0.0874	0.0695	pCi/g						
Silver-108m	U	-0.0134	+/-0.0166	0.0141	+/-0.0166	0.0299	pCi/g						
Thallium-208		0.196	+/-0.0408	0.0168	+/-0.0408	0.0355	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1301	592095

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-009F  
Sample ID: 176896008

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-009FS  
Sample ID: 176896009  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 12.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.730	+/-0.185	0.0552	+/-0.185	0.119	pCi/g		MJH1	12/05/06	1000	592140	1
Americium-241	U	-0.00587	+/-0.116	0.0945	+/-0.116	0.196	pCi/g						
Bismuth-212		0.446	+/-0.236	0.115	+/-0.236	0.248	pCi/g						
Bismuth-214		0.579	+/-0.0782	0.0249	+/-0.0782	0.0536	pCi/g						
Cesium-134	U	0.0171	+/-0.0211	0.0192	+/-0.0211	0.0411	pCi/g						
Cesium-137		0.101	+/-0.0351	0.0147	+/-0.0351	0.0316	pCi/g						
Cobalt-60	U	0.00698	+/-0.0275	0.0174	+/-0.0275	0.0384	pCi/g						
Europium-152	U	-0.0348	+/-0.0476	0.0388	+/-0.0476	0.0819	pCi/g						
Europium-154	U	0.0378	+/-0.0599	0.0546	+/-0.0599	0.119	pCi/g						
Europium-155	U	-0.0146	+/-0.0516	0.0485	+/-0.0516	0.101	pCi/g						
Lead-212		0.630	+/-0.0547	0.0241	+/-0.0547	0.0503	pCi/g						
Lead-214		0.615	+/-0.0857	0.0304	+/-0.0857	0.0638	pCi/g						
Manganese-54	U	0.0051	+/-0.0184	0.0159	+/-0.0184	0.0343	pCi/g						
Niobium-94	U	0.00108	+/-0.0164	0.0142	+/-0.0164	0.0304	pCi/g						
Potassium-40		10.0	+/-0.746	0.105	+/-0.746	0.245	pCi/g						
Radium-226		0.579	+/-0.0782	0.0249	+/-0.0782	0.0536	pCi/g						
Silver-108m	U	-0.00186	+/-0.016	0.0126	+/-0.016	0.0269	pCi/g						
Thallium-208		0.197	+/-0.0403	0.0155	+/-0.0403	0.033	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1301	592095

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-009FS  
Sample ID: 176896009

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

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



# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-008F  
Sample ID: 176896010  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 21%

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	-0.0199	+/-0.0384	0.0538	+/-0.0385	0.202	pCi/g		MXA	12/03/06	0901	592107	1
Curium-242	U	-0.0184	+/-0.0256	0.0488	+/-0.0257	0.202	pCi/g						
Curium-243/244	U	0.0722	+/-0.144	0.0881	+/-0.144	0.270	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0757	+/-0.171	0.111	+/-0.172	0.333	pCi/g		MXA	12/03/06	0901	592108	2
Plutonium-239/240	U	-0.0296	+/-0.0335	0.0639	+/-0.0337	0.239	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	11.0	+/-8.26	6.42	+/-8.34	13.5	pCi/g		MXA	12/05/06	1937	592109	3
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.556	+/-0.158	0.0523	+/-0.158	0.114	pCi/g		MJH1	12/05/06	1132	592140	4
Americium-241	U	0.015	+/-0.106	0.0779	+/-0.106	0.162	pCi/g						
Bismuth-212		0.320	+/-0.217	0.119	+/-0.217	0.257	pCi/g						
Bismuth-214		0.413	+/-0.0879	0.0278	+/-0.0879	0.0596	pCi/g						
Cesium-134	U	0.00824	+/-0.0204	0.0181	+/-0.0204	0.0389	pCi/g						
Cesium-137		0.223	+/-0.0382	0.0143	+/-0.0382	0.0309	pCi/g						
Cobalt-60	U	0.00385	+/-0.0203	0.0177	+/-0.0203	0.0391	pCi/g						
Europium-152	U	-0.00971	+/-0.0465	0.0394	+/-0.0465	0.0834	pCi/g						
Europium-154	U	0.0296	+/-0.0803	0.0504	+/-0.0803	0.111	pCi/g						
Europium-155	U	0.0731	+/-0.066	0.044	+/-0.066	0.0915	pCi/g						
Lead-212		0.571	+/-0.0532	0.0217	+/-0.0532	0.0456	pCi/g						
Lead-214		0.438	+/-0.083	0.0266	+/-0.083	0.0566	pCi/g						
Manganese-54	U	0.0023	+/-0.018	0.0154	+/-0.018	0.0334	pCi/g						
Niobium-94	U	0.0184	+/-0.0164	0.0155	+/-0.0164	0.033	pCi/g						
Potassium-40		9.47	+/-0.736	0.127	+/-0.736	0.291	pCi/g						
Radium-226		0.413	+/-0.0879	0.0278	+/-0.0879	0.0596	pCi/g						
Silver-108m	U	0.0114	+/-0.0153	0.0145	+/-0.0153	0.0308	pCi/g						
Thallium-208		0.165	+/-0.0436	0.0143	+/-0.0436	0.0308	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90	U	0.0361	+/-0.031	0.0212	+/-0.0311	0.0495	pCi/g		KSD1	12/07/06	1151	592186	5
<b>Rad Liquid Scintillation Analysis</b>													

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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: December 7, 2006

Client Sample ID: 9522-0001-008F  
Sample ID: 176896010

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid - 3 pCi/g</i>													
Tritium	U	-0.535	+/-1.20	1.02	+/-1.20	2.10	pCi/g		DFA1	12/06/06	0538	593064	6
<i>Liquid Scint C14, Solid ALL FSS</i>													
Carbon-14	U	-0.00299	+/-0.0942	0.0792	+/-0.0942	0.162	pCi/g		AXD2	12/01/06	2040	592313	8
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	1.47	+/-35.2	26.9	+/-35.2	56.6	pCi/g		MXP1	12/02/06	1905	592304	9
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	-3.88	+/-11.0	9.37	+/-11.0	19.7	pCi/g		MXP1	12/04/06	2104	592310	10
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.135	+/-0.154	0.125	+/-0.154	0.258	pCi/g		KXR1	12/06/06	1825	592312	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1301	592095

### The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	76	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	82	(15%-125%)
Plutonium-241	Liquid Scint Pu241, Solid-ALL FS	75	(25%-125%)
Strontium-90	GFPC, Sr90, solid-ALL FSS	47	(25%-125%)

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-008F  
Sample ID: 176896010

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			47		(25%-125%)						
Iron-55		Liquid Scint Fe55, Solid-ALL FS			66		(15%-125%)						
Nickel-63		Liquid Scint Ni63, Solid-ALL FS			67		(25%-125%)						
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			67		(25%-125%)						
Technetium-99		Liquid Scint Tc99, Solid-ALL FS			79		(15%-125%)						
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			79		(15%-125%)						

### Notes:

The Qualifiers in this report are defined as follows :

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-011F  
Sample ID: 176896011  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 18.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.590	+/-0.186	0.0549	+/-0.186	0.118	pCi/g		MJH1	12/05/06	1133	592140	1
Americium-241	U	0.00418	+/-0.0783	0.0674	+/-0.0783	0.139	pCi/g						
Bismuth-212		0.503	+/-0.236	0.126	+/-0.236	0.269	pCi/g						
Bismuth-214		0.490	+/-0.084	0.0285	+/-0.084	0.0605	pCi/g						
Cesium-134	U	0.0346	+/-0.0206	0.0192	+/-0.0206	0.0408	pCi/g						
Cesium-137		0.177	+/-0.0313	0.0171	+/-0.0313	0.0363	pCi/g						
Cobalt-60	U	0.0132	+/-0.0218	0.0198	+/-0.0218	0.0428	pCi/g						
Europium-152	U	-0.0144	+/-0.0503	0.0434	+/-0.0503	0.0907	pCi/g						
Europium-154	U	0.0136	+/-0.0613	0.0541	+/-0.0613	0.117	pCi/g						
Europium-155	U	0.0698	+/-0.0518	0.0499	+/-0.0518	0.103	pCi/g						
Lead-212		0.587	+/-0.0564	0.0256	+/-0.0564	0.053	pCi/g						
Lead-214		0.555	+/-0.080	0.0291	+/-0.080	0.0611	pCi/g						
Manganese-54	U	-0.0128	+/-0.0204	0.0171	+/-0.0204	0.0364	pCi/g						
Niobium-94	U	-0.00519	+/-0.0168	0.014	+/-0.0168	0.0298	pCi/g						
Potassium-40		10.5	+/-0.780	0.129	+/-0.780	0.289	pCi/g						
Radium-226		0.490	+/-0.084	0.0285	+/-0.084	0.0605	pCi/g						
Silver-108m	U	-0.00727	+/-0.0161	0.0142	+/-0.0161	0.0298	pCi/g						
Thallium-208		0.174	+/-0.042	0.0171	+/-0.042	0.0361	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1301	592095

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-011F  
Sample ID: 176896011

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-013F  
Sample ID: 176896012  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
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	UI	0.00	+/-0.219	0.0557	+/-0.219	0.128	pCi/g		MJH1	12/05/06	1134	592140	1
Americium-241	U	0.0146	+/-0.0256	0.0227	+/-0.0256	0.0478	pCi/g						
Bismuth-212	U	0.0341	+/-0.183	0.160	+/-0.183	0.352	pCi/g						
Bismuth-214		0.265	+/-0.0861	0.0353	+/-0.0861	0.0775	pCi/g						
Cesium-134	U	0.0198	+/-0.0249	0.0233	+/-0.0249	0.0514	pCi/g						
Cesium-137	U	0.0277	+/-0.022	0.0217	+/-0.022	0.0474	pCi/g						
Cobalt-60	U	0.00335	+/-0.025	0.0218	+/-0.025	0.0498	pCi/g						
Europium-152	U	0.000766	+/-0.0527	0.0478	+/-0.0527	0.103	pCi/g						
Europium-154	U	0.0388	+/-0.070	0.0651	+/-0.070	0.147	pCi/g						
Europium-155	U	0.0083	+/-0.0449	0.0415	+/-0.0449	0.0875	pCi/g						
Lead-212		0.289	+/-0.053	0.0281	+/-0.053	0.0595	pCi/g						
Lead-214		0.291	+/-0.0861	0.0332	+/-0.0861	0.0716	pCi/g						
Manganese-54	U	0.00791	+/-0.0184	0.0166	+/-0.0184	0.0377	pCi/g						
Niobium-94	U	0.0194	+/-0.0199	0.019	+/-0.0199	0.0416	pCi/g						
Potassium-40		4.39	+/-0.761	0.144	+/-0.761	0.350	pCi/g						
Radium-226		0.265	+/-0.0861	0.0353	+/-0.0861	0.0775	pCi/g						
Silver-108m	U	0.00653	+/-0.0171	0.0158	+/-0.0171	0.0345	pCi/g						
Thallium-208		0.0611	+/-0.0484	0.0188	+/-0.0484	0.0413	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1301	592095

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-013F  
Sample ID: 176896012

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-005F  
Sample ID: 176896013  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 38.1%

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		1.20	+/-0.268	0.0715	+/-0.268	0.156	pCi/g						
Americium-241	U	-0.00326	+/-0.114	0.0924	+/-0.114	0.192	pCi/g						
Bismuth-212		0.564	+/-0.344	0.202	+/-0.344	0.430	pCi/g						
Bismuth-214		0.824	+/-0.142	0.0414	+/-0.142	0.0883	pCi/g						
Cesium-134	U	0.0305	+/-0.0341	0.0276	+/-0.0341	0.0589	pCi/g						
Cesium-137		0.824	+/-0.106	0.0229	+/-0.106	0.0489	pCi/g						
Cobalt-60	U	0.0508	+/-0.0263	0.0278	+/-0.0263	0.0605	pCi/g						
Europium-152	U	-0.0355	+/-0.0644	0.0543	+/-0.0644	0.115	pCi/g						
Europium-154	U	-0.0437	+/-0.0783	0.0597	+/-0.0783	0.133	pCi/g						
Europium-155	U	0.0828	+/-0.109	0.0575	+/-0.109	0.120	pCi/g						
Lead-212		0.985	+/-0.107	0.0341	+/-0.107	0.0709	pCi/g						
Lead-214		0.915	+/-0.145	0.0395	+/-0.145	0.0831	pCi/g						
Manganese-54	U	0.0129	+/-0.0259	0.0232	+/-0.0259	0.0499	pCi/g						
Niobium-94	U	-0.00613	+/-0.0245	0.0198	+/-0.0245	0.0424	pCi/g						
Potassium-40		11.1	+/-1.20	0.210	+/-1.20	0.471	pCi/g						
Radium-226		0.824	+/-0.142	0.0414	+/-0.142	0.0883	pCi/g						
Silver-108m	U	-0.0154	+/-0.0241	0.0198	+/-0.0241	0.0419	pCi/g						
Thallium-208		0.347	+/-0.0719	0.0218	+/-0.0719	0.0465	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1316	592096

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported



# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-005F  
Sample ID: 176896013

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-006F  
Sample ID: 176896014  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 44.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.943	+/-0.221	0.0666	+/-0.221	0.143	pCi/g						
Americium-241	U	0.0124	+/-0.0994	0.0862	+/-0.0994	0.177	pCi/g						
Bismuth-212		0.583	+/-0.289	0.164	+/-0.289	0.347	pCi/g						
Bismuth-214		0.907	+/-0.145	0.0364	+/-0.145	0.077	pCi/g						
Cesium-134	UI	0.00	+/-0.039	0.0259	+/-0.039	0.0547	pCi/g						
Cesium-137		3.08	+/-0.251	0.0205	+/-0.251	0.0434	pCi/g						
Cobalt-60		0.057	+/-0.0467	0.018	+/-0.0467	0.0399	pCi/g						
Europium-152	U	-0.0255	+/-0.0682	0.0574	+/-0.0682	0.119	pCi/g						
Europium-154	U	-0.0149	+/-0.0692	0.0558	+/-0.0692	0.122	pCi/g						
Europium-155	U	0.0414	+/-0.0671	0.058	+/-0.0671	0.119	pCi/g						
Lead-212		0.888	+/-0.0994	0.0316	+/-0.0994	0.0654	pCi/g						
Lead-214		1.01	+/-0.144	0.041	+/-0.144	0.0853	pCi/g						
Manganese-54	U	-0.000149	+/-0.0266	0.0198	+/-0.0266	0.0423	pCi/g						
Niobium-94	U	0.0105	+/-0.0216	0.0183	+/-0.0216	0.0387	pCi/g						
Potassium-40		8.65	+/-0.992	0.169	+/-0.992	0.376	pCi/g						
Radium-226		0.907	+/-0.145	0.0364	+/-0.145	0.077	pCi/g						
Silver-108m	U	0.00226	+/-0.0251	0.0213	+/-0.0251	0.0444	pCi/g						
Thallium-208		0.286	+/-0.051	0.0191	+/-0.051	0.0405	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1316	592096

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-006F  
Sample ID: 176896014

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-004F  
Sample ID: 176896015  
Matrix: TS  
Collect Date: 09-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 42%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.838	+/-0.155	0.0431	+/-0.155	0.0902	pCi/g						
Americium-241	U	-0.13	+/-0.117	0.088	+/-0.117	0.179	pCi/g						
Bismuth-212		0.537	+/-0.192	0.102	+/-0.192	0.211	pCi/g						
Bismuth-214		0.970	+/-0.111	0.0223	+/-0.111	0.0463	pCi/g						
Cesium-134	UI	0.00	+/-0.0306	0.0161	+/-0.0306	0.0334	pCi/g						
Cesium-137		0.637	+/-0.0598	0.0133	+/-0.0598	0.0275	pCi/g						
Cobalt-60	U	0.0227	+/-0.0158	0.0147	+/-0.0158	0.0309	pCi/g						
Europium-152	U	-0.0052	+/-0.0401	0.0342	+/-0.0401	0.0702	pCi/g						
Europium-154	U	-0.0357	+/-0.0445	0.0362	+/-0.0445	0.0764	pCi/g						
Europium-155	U	0.0616	+/-0.0575	0.039	+/-0.0575	0.0793	pCi/g						
Lead-212		0.981	+/-0.0897	0.0196	+/-0.0897	0.040	pCi/g						
Lead-214		1.10	+/-0.116	0.024	+/-0.116	0.0493	pCi/g						
Manganese-54	U	0.0082	+/-0.0167	0.0132	+/-0.0167	0.0274	pCi/g						
Niobium-94	U	-0.00353	+/-0.0131	0.0111	+/-0.0131	0.0231	pCi/g						
Potassium-40		11.7	+/-0.944	0.113	+/-0.944	0.241	pCi/g						
Radium-226		0.970	+/-0.111	0.0223	+/-0.111	0.0463	pCi/g						
Silver-108m	U	-0.0099	+/-0.014	0.0115	+/-0.014	0.0237	pCi/g						
Thallium-208		0.320	+/-0.0361	0.0116	+/-0.0361	0.0242	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1316	592096

### The following Analytical Methods were performed

Method	Description
I	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-004F  
Sample ID: 176896015

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-016F  
Sample ID: 176896016  
Matrix: TS  
Collect Date: 15-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 23.5%

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		0.619	+/-0.150	0.0562	+/-0.150	0.122	pCi/g						
Americium-241	U	-0.18	+/-0.102	0.0788	+/-0.102	0.162	pCi/g						
Bismuth-212		0.507	+/-0.272	0.112	+/-0.272	0.242	pCi/g						
Bismuth-214		0.592	+/-0.0854	0.0332	+/-0.0854	0.0703	pCi/g						
Cesium-134	UI	0.00	+/-0.0343	0.0216	+/-0.0343	0.0459	pCi/g						
Cesium-137		0.389	+/-0.0492	0.017	+/-0.0492	0.0363	pCi/g						
Cobalt-60	U	0.0115	+/-0.0427	0.0177	+/-0.0427	0.0389	pCi/g						
Europium-152	U	0.0171	+/-0.055	0.0484	+/-0.055	0.101	pCi/g						
Europium-154	U	-0.0361	+/-0.0613	0.0473	+/-0.0613	0.104	pCi/g						
Europium-155	U	0.00617	+/-0.0595	0.0551	+/-0.0595	0.114	pCi/g						
Lead-212		0.689	+/-0.0563	0.0277	+/-0.0563	0.0574	pCi/g						
Lead-214		0.637	+/-0.0859	0.0328	+/-0.0859	0.0688	pCi/g						
Manganese-54	U	0.00642	+/-0.0225	0.0174	+/-0.0225	0.0373	pCi/g						
Niobium-94	U	0.022	+/-0.0272	0.0155	+/-0.0272	0.033	pCi/g						
Potassium-40		8.98	+/-0.762	0.119	+/-0.762	0.274	pCi/g						
Radium-226		0.592	+/-0.0854	0.0332	+/-0.0854	0.0703	pCi/g						
Silver-108m	U	0.00618	+/-0.0203	0.0177	+/-0.0203	0.037	pCi/g						
Thallium-208		0.183	+/-0.0404	0.0166	+/-0.0404	0.0353	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1316	592096

### The following Analytical Methods were performed

Method	Description
I	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-016F  
Sample ID: 176896016

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-017-I  
Sample ID: 176896017  
Matrix: TS  
Collect Date: 16-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 10.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.24	+/-0.228	0.0723	+/-0.228	0.155	pCi/g		MJH1	12/05/06	1145	592140	1
Americium-241	U	-0.154	+/-0.101	0.0713	+/-0.101	0.146	pCi/g						
Bismuth-212		0.586	+/-0.286	0.168	+/-0.286	0.357	pCi/g						
Bismuth-214		0.641	+/-0.110	0.0459	+/-0.110	0.0963	pCi/g						
Cesium-134	U	0.0362	+/-0.0338	0.0276	+/-0.0338	0.0583	pCi/g						
Cesium-137	UI	0.00	+/-0.0479	0.0213	+/-0.0479	0.0451	pCi/g						
Cobalt-60	U	0.0128	+/-0.0296	0.023	+/-0.0296	0.0501	pCi/g						
Europium-152	U	-0.0819	+/-0.068	0.0552	+/-0.068	0.115	pCi/g						
Europium-154	U	0.0535	+/-0.0775	0.0698	+/-0.0775	0.151	pCi/g						
Europium-155	U	0.0508	+/-0.0696	0.0612	+/-0.0696	0.126	pCi/g						
Lead-212		1.21	+/-0.120	0.0318	+/-0.120	0.066	pCi/g						
Lead-214		0.761	+/-0.115	0.0413	+/-0.115	0.0863	pCi/g						
Manganese-54	U	-0.00326	+/-0.0251	0.0205	+/-0.0251	0.0439	pCi/g						
Niobium-94	U	0.0261	+/-0.0226	0.0204	+/-0.0226	0.0431	pCi/g						
Potassium-40		17.9	+/-1.54	0.187	+/-1.54	0.416	pCi/g						
Radium-226		0.641	+/-0.110	0.0459	+/-0.110	0.0963	pCi/g						
Silver-108m	U	-0.0125	+/-0.0207	0.0171	+/-0.0207	0.0361	pCi/g						
Thallium-208		0.340	+/-0.0533	0.0202	+/-0.0533	0.0427	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1316	592096

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported



# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-017-I  
Sample ID: 176896017

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-018-I  
Sample ID: 176896018  
Matrix: TS  
Collect Date: 16-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 9.55%

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		0.820	+/-0.207	0.0916	+/-0.207	0.198	pCi/g		MJH1	12/05/06	1146	592140	1
Americium-241	U	-0.0168	+/-0.0415	0.0375	+/-0.0415	0.0775	pCi/g						
Bismuth-212		0.902	+/-0.393	0.186	+/-0.393	0.400	pCi/g						
Bismuth-214		0.782	+/-0.136	0.0459	+/-0.136	0.0978	pCi/g						
Cesium-134	U	0.0645	+/-0.0428	0.0327	+/-0.0428	0.0696	pCi/g						
Cesium-137		0.0804	+/-0.0483	0.026	+/-0.0483	0.0556	pCi/g						
Cobalt-60	U	0.012	+/-0.0308	0.0185	+/-0.0308	0.0424	pCi/g						
Europium-152	U	-0.0184	+/-0.0724	0.0618	+/-0.0724	0.130	pCi/g						
Europium-154	U	0.0808	+/-0.0972	0.0897	+/-0.0972	0.194	pCi/g						
Europium-155	U	0.0487	+/-0.102	0.0556	+/-0.102	0.116	pCi/g						
Lead-212		0.863	+/-0.0764	0.033	+/-0.0764	0.0691	pCi/g						
Lead-214		0.847	+/-0.128	0.0457	+/-0.128	0.0963	pCi/g						
Manganese-54	U	0.0128	+/-0.0332	0.0291	+/-0.0332	0.062	pCi/g						
Niobium-94	U	0.0143	+/-0.0283	0.0255	+/-0.0283	0.0541	pCi/g						
Potassium-40		13.6	+/-1.13	0.237	+/-1.13	0.528	pCi/g						
Radium-226		0.782	+/-0.136	0.0459	+/-0.136	0.0978	pCi/g						
Silver-108m	U	-0.0114	+/-0.0246	0.0217	+/-0.0246	0.046	pCi/g						
Thallium-208		0.254	+/-0.0665	0.0254	+/-0.0665	0.0541	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1316	592096

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-018-I  
Sample ID: 176896018

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-019-I  
Sample ID: 176896019  
Matrix: TS  
Collect Date: 16-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 10.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		1.05	+/-0.230	0.0936	+/-0.230	0.202	pCi/g		MJH1	12/05/06	1146	592140	1
Americium-241	U	-0.0195	+/-0.0364	0.0313	+/-0.0364	0.0647	pCi/g						
Bismuth-212		0.851	+/-0.420	0.183	+/-0.420	0.395	pCi/g						
Bismuth-214		1.04	+/-0.129	0.0423	+/-0.129	0.0907	pCi/g						
Cesium-134	U	0.0208	+/-0.0354	0.0312	+/-0.0354	0.0666	pCi/g						
Cesium-137	U	0.0495	+/-0.0421	0.0232	+/-0.0421	0.0499	pCi/g						
Cobalt-60	U	0.043	+/-0.043	0.0233	+/-0.043	0.0523	pCi/g						
Europium-152	U	-0.0527	+/-0.0694	0.0556	+/-0.0694	0.118	pCi/g						
Europium-154	U	-0.0241	+/-0.101	0.0827	+/-0.101	0.181	pCi/g						
Europium-155	U	0.0283	+/-0.0573	0.0546	+/-0.0573	0.113	pCi/g						
Lead-212		1.04	+/-0.0756	0.0321	+/-0.0756	0.067	pCi/g						
Lead-214		1.34	+/-0.113	0.0374	+/-0.113	0.0794	pCi/g						
Manganese-54	U	-0.0064	+/-0.0294	0.024	+/-0.0294	0.0518	pCi/g						
Niobium-94	U	-0.0141	+/-0.0267	0.0216	+/-0.0267	0.0465	pCi/g						
Potassium-40		17.9	+/-1.31	0.125	+/-1.31	0.308	pCi/g						
Radium-226		1.04	+/-0.129	0.0423	+/-0.129	0.0907	pCi/g						
Silver-108m	U	0.00609	+/-0.0214	0.0195	+/-0.0214	0.0415	pCi/g						
Thallium-208		0.343	+/-0.0627	0.0205	+/-0.0627	0.0442	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1316	592096

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

#### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-019-I  
Sample ID: 176896019

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-020-I  
Sample ID: 176896020  
Matrix: TS  
Collect Date: 16-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 9.07%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.435	+/-0.128	0.0372	+/-0.128	0.0823	pCi/g						
Americium-241	U	-0.016	+/-0.039	0.0346	+/-0.039	0.0722	pCi/g						
Bismuth-212		0.272	+/-0.192	0.0894	+/-0.192	0.194	pCi/g						
Bismuth-214		0.327	+/-0.068	0.0228	+/-0.068	0.0489	pCi/g						
Cesium-134	U	0.0255	+/-0.0278	0.0156	+/-0.0278	0.0334	pCi/g						
Cesium-137		0.0356	+/-0.0192	0.0124	+/-0.0192	0.0267	pCi/g						
Cobalt-60	U	0.00471	+/-0.014	0.0126	+/-0.014	0.0282	pCi/g						
Europium-152	U	0.0268	+/-0.0343	0.0318	+/-0.0343	0.0673	pCi/g						
Europium-154	U	-0.0589	+/-0.0391	0.0257	+/-0.0391	0.0594	pCi/g						
Europium-155	U	0.0269	+/-0.0493	0.0351	+/-0.0493	0.0731	pCi/g						
Lead-212		0.431	+/-0.0531	0.0188	+/-0.0531	0.0393	pCi/g						
Lead-214		0.354	+/-0.0691	0.0212	+/-0.0691	0.045	pCi/g						
Manganese-54	U	0.00258	+/-0.0128	0.0113	+/-0.0128	0.0247	pCi/g						
Niobium-94	U	-0.000294	+/-0.0122	0.0107	+/-0.0122	0.023	pCi/g						
Potassium-40		6.67	+/-0.722	0.0877	+/-0.722	0.205	pCi/g						
Radium-226		0.327	+/-0.068	0.0228	+/-0.068	0.0489	pCi/g						
Silver-108m	U	-0.00196	+/-0.0119	0.010	+/-0.0119	0.0215	pCi/g						
Thallium-208		0.140	+/-0.0368	0.0108	+/-0.0368	0.0234	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1316	592096

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-020-I  
Sample ID: 176896020

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-021-I  
Sample ID: 176896021  
Matrix: TS  
Collect Date: 16-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 16.3%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.654	+/-0.145	0.0568	+/-0.145	0.120	pCi/g		MJH1	12/04/06	0657	592142	1
Americium-241	U	0.0382	+/-0.0896	0.053	+/-0.0896	0.109	pCi/g						
Bismuth-212		0.394	+/-0.211	0.106	+/-0.211	0.224	pCi/g						
Bismuth-214		0.532	+/-0.0827	0.0298	+/-0.0827	0.0624	pCi/g						
Cesium-134	UI	0.00	+/-0.0308	0.0182	+/-0.0308	0.0383	pCi/g						
Cesium-137		0.519	+/-0.0627	0.0156	+/-0.0627	0.0327	pCi/g						
Cobalt-60	U	0.0253	+/-0.0187	0.0178	+/-0.0187	0.0382	pCi/g						
Europium-152	U	0.00452	+/-0.0502	0.039	+/-0.0502	0.0811	pCi/g						
Europium-154	U	0.0204	+/-0.0518	0.0458	+/-0.0518	0.0985	pCi/g						
Europium-155	U	0.0389	+/-0.0432	0.0425	+/-0.0432	0.0872	pCi/g						
Lead-212		0.680	+/-0.0717	0.0235	+/-0.0717	0.0485	pCi/g						
Lead-214		0.647	+/-0.0859	0.0291	+/-0.0859	0.0605	pCi/g						
Manganese-54	U	-0.0215	+/-0.0186	0.0142	+/-0.0186	0.0301	pCi/g						
Niobium-94	U	0.00638	+/-0.0171	0.0131	+/-0.0171	0.0276	pCi/g						
Potassium-40		9.96	+/-0.889	0.134	+/-0.889	0.294	pCi/g						
Radium-226		0.532	+/-0.0827	0.0298	+/-0.0827	0.0624	pCi/g						
Silver-108m	U	0.00145	+/-0.0171	0.015	+/-0.0171	0.0313	pCi/g						
Thallium-208		0.215	+/-0.042	0.0146	+/-0.042	0.0308	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1316	592096

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported



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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-021-I  
Sample ID: 176896021

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-022-I  
Sample ID: 176896022  
Matrix: TS  
Collect Date: 16-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 10.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.602	+/-0.115	0.0483	+/-0.115	0.103	pCi/g						
Americium-241	U	-0.075	+/-0.111	0.0647	+/-0.111	0.133	pCi/g						
Bismuth-212		0.504	+/-0.155	0.0928	+/-0.155	0.198	pCi/g						
Bismuth-214		0.528	+/-0.0657	0.0249	+/-0.0657	0.0526	pCi/g						
Cesium-134	U	0.0287	+/-0.0233	0.018	+/-0.0233	0.0378	pCi/g						
Cesium-137		0.0653	+/-0.024	0.0156	+/-0.024	0.0328	pCi/g						
Cobalt-60	U	0.0179	+/-0.0176	0.0162	+/-0.0176	0.0349	pCi/g						
Europium-152	U	-0.0225	+/-0.0437	0.037	+/-0.0437	0.0772	pCi/g						
Europium-154	U	0.0195	+/-0.0512	0.0444	+/-0.0512	0.0956	pCi/g						
Europium-155	U	0.0625	+/-0.0513	0.0451	+/-0.0513	0.0925	pCi/g						
Lead-212		0.603	+/-0.0484	0.0231	+/-0.0484	0.0477	pCi/g						
Lead-214		0.550	+/-0.0696	0.0261	+/-0.0696	0.0544	pCi/g						
Manganese-54	U	0.00167	+/-0.017	0.0129	+/-0.017	0.0275	pCi/g						
Niobium-94	U	0.00451	+/-0.0141	0.0127	+/-0.0141	0.0268	pCi/g						
Potassium-40		9.75	+/-0.656	0.127	+/-0.656	0.280	pCi/g						
Radium-226		0.528	+/-0.0657	0.0249	+/-0.0657	0.0526	pCi/g						
Silver-108m	U	-0.00371	+/-0.0147	0.0124	+/-0.0147	0.026	pCi/g						
Thallium-208		0.221	+/-0.038	0.0126	+/-0.038	0.0267	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1316	592096

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-022-I  
Sample ID: 176896022

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

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

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-023-I  
Sample ID: 176896023  
Matrix: TS  
Collect Date: 16-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 11.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.581	+/-0.137	0.0617	+/-0.137	0.131	pCi/g		MJH1	12/04/06	0658	592142	1
Americium-241	U	0.0151	+/-0.0268	0.0248	+/-0.0268	0.0509	pCi/g						
Bismuth-212	U	0.278	+/-0.239	0.147	+/-0.239	0.309	pCi/g						
Bismuth-214		0.446	+/-0.0932	0.0316	+/-0.0932	0.0664	pCi/g						
Cesium-134	U	0.0422	+/-0.048	0.0209	+/-0.048	0.0441	pCi/g						
Cesium-137		0.055	+/-0.0298	0.0202	+/-0.0298	0.0423	pCi/g						
Cobalt-60	U	-0.0147	+/-0.0226	0.0179	+/-0.0226	0.0386	pCi/g						
Europium-152	U	-0.00132	+/-0.051	0.0439	+/-0.051	0.0914	pCi/g						
Europium-154	U	-0.0173	+/-0.063	0.052	+/-0.063	0.112	pCi/g						
Europium-155	U	0.0146	+/-0.0462	0.0406	+/-0.0462	0.0835	pCi/g						
Lead-212		0.533	+/-0.0569	0.0314	+/-0.0569	0.0644	pCi/g						
Lead-214		0.513	+/-0.0809	0.0295	+/-0.0809	0.0616	pCi/g						
Manganese-54	U	-0.00392	+/-0.0219	0.0182	+/-0.0219	0.0384	pCi/g						
Niobium-94	U9.330E-05		+/-0.0191	0.0164	+/-0.0191	0.0345	pCi/g						
Potassium-40		9.21	+/-0.696	0.173	+/-0.696	0.374	pCi/g						
Radium-226		0.446	+/-0.0932	0.0316	+/-0.0932	0.0664	pCi/g						
Silver-108m	U	0.00276	+/-0.0168	0.0153	+/-0.0168	0.032	pCi/g						
Thallium-208		0.193	+/-0.0439	0.017	+/-0.0439	0.0357	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1316	592096

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-023-I  
Sample ID: 176896023

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

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

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-024-1  
Sample ID: 176896024  
Matrix: TS  
Collect Date: 21-NOV-06  
Receive Date: 30-NOV-06  
Collector: Client  
Moisture: 44.9%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.985	+/-0.159	0.0657	+/-0.159	0.141	pCi/g						
Americium-241	U	0.011	+/-0.0288	0.0241	+/-0.0288	0.0495	pCi/g						
Bismuth-212		0.629	+/-0.357	0.145	+/-0.357	0.309	pCi/g						
Bismuth-214		0.975	+/-0.109	0.0328	+/-0.109	0.0695	pCi/g						
Cesium-134	UI	0.00	+/-0.0598	0.0245	+/-0.0598	0.0517	pCi/g						
Cesium-137		0.630	+/-0.0618	0.020	+/-0.0618	0.0424	pCi/g						
Cobalt-60	U	0.00435	+/-0.0255	0.0215	+/-0.0255	0.0468	pCi/g						
Europium-152	U	-0.00564	+/-0.0581	0.0473	+/-0.0581	0.0987	pCi/g						
Europium-154	U	-0.00448	+/-0.0854	0.0608	+/-0.0854	0.132	pCi/g						
Europium-155	U	0.00567	+/-0.0451	0.0401	+/-0.0451	0.0826	pCi/g						
Lead-212		1.03	+/-0.0634	0.0264	+/-0.0634	0.0548	pCi/g						
Lead-214		1.09	+/-0.106	0.034	+/-0.106	0.0711	pCi/g						
Manganese-54	U	0.0017	+/-0.0236	0.0194	+/-0.0236	0.0413	pCi/g						
Niobium-94	U	0.0207	+/-0.0209	0.0186	+/-0.0209	0.0393	pCi/g						
Potassium-40		11.3	+/-0.858	0.204	+/-0.858	0.446	pCi/g						
Radium-226		0.975	+/-0.109	0.0328	+/-0.109	0.0695	pCi/g						
Silver-108m	U	-0.00821	+/-0.0196	0.0165	+/-0.0196	0.0346	pCi/g						
Thallium-208		0.329	+/-0.0512	0.0172	+/-0.0512	0.0366	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	11/30/06	1316	592096

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: December 7, 2006

Client Sample ID: 9522-0001-024-I  
Sample ID: 176896024

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

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

# QUALITY CONTROL DATA



# GENERAL ENGINEERING LABORATORIES, LLC

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## QC Summary

Report Date: December 7, 2006  
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Client : Connecticut Yankee Atomic Power  
362 Injun Hollow Rd

Contact: East Hampton, Connecticut  
Mr. Jack McCarthy

Workorder: 176896

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	592107										
QC1201238057 176896007 DUP											
Americium-241	U	0.105	U	0.0986	pCi/g	6		(0% - 100%)	4XA1	12/03/06	09:01
	Uncert:	+/-0.153		+/-0.182							
	TPU:	+/-0.154		+/-0.183							
Curium-242	U	0.075	U	-0.00937	pCi/g	257		(0% - 100%)			
	Uncert:	+/-0.129		+/-0.0787							
	TPU:	+/-0.130		+/-0.0788							
Curium-243/244	U	0.0863	U	0.00564	pCi/g	175		(0% - 100%)			
	Uncert:	+/-0.154		+/-0.153							
	TPU:	+/-0.154		+/-0.153							
QC1201238059 LCS											
Americium-241		13.5		12.7	pCi/g		94	(75%-125%)			
	Uncert:			+/-1.32							
	TPU:			+/-2.06							
Curium-242			U	0.0185	pCi/g						
	Uncert:			+/-0.0736							
	TPU:			+/-0.0736							
Curium-243/244		11.7		11.1	pCi/g		95	(75%-125%)			
	Uncert:			+/-1.23							
	TPU:			+/-1.84							
QC1201238056 MB											
Americium-241			U	-0.0952	pCi/g						
	Uncert:			+/-0.0629							
	TPU:			+/-0.064							
Curium-242			U	-0.0674	pCi/g						
	Uncert:			+/-0.0467							
	TPU:			+/-0.0475							
Curium-243/244			U	-0.173	pCi/g						
	Uncert:			+/-0.131							
	TPU:			+/-0.133							
QC1201238058 176896007 MS											
Americium-241	U	0.105		12.1	pCi/g		88	(75%-125%)			
	Uncert:	+/-0.153		+/-1.19							
	TPU:	+/-0.154		+/-1.87							
Curium-242	U	0.075	U	0.0267	pCi/g						
	Uncert:	+/-0.129		+/-0.099							
	TPU:	+/-0.130		+/-0.0991							
Curium-243/244	U	0.0863		11.6	pCi/g		98	(75%-125%)			
	Uncert:	+/-0.154		+/-1.17							
	TPU:	+/-0.154		+/-1.80							
Batch	592108										
QC1201238061 176896007 DUP											
Plutonium-238	U	0.0367	U	0.0113	pCi/g	106		(0% - 100%)	4XA1	12/03/06	09:01

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## QC Summary

Workorder: 176896

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time	
Rad Alpha Spec												
Batch	592108											
Plutonium-239/240	U	0.0268	U	Uncert:	+/-0.103	+/-0.107	385	(0% - 100%)				
				TPU:	+/-0.103	+/-0.107						
				Uncert:	+/-0.071	+/-0.0525						
				TPU:	+/-0.0711	+/-0.0535						
QC1201238063	LCS											
Plutonium-238			U	-0.034	pCi/g		(75%-125%)					
Plutonium-239/240	12.0			Uncert:	+/-0.123	10.9	91	(75%-125%)				
				TPU:	+/-0.123							
				Uncert:	+/-1.16							
				TPU:	+/-1.75							
QC1201238060	MB											
Plutonium-238			U	0.0771	pCi/g							
Plutonium-239/240	U		U	Uncert:	+/-0.165	0.0681						
				TPU:	+/-0.165							
				Uncert:	+/-0.228							
				TPU:	+/-0.228							
QC1201238062	176896007	MS										
Plutonium-238		U	0.0367	U	-0.0903	pCi/g		(75%-125%)				
Plutonium-239/240	12.0	U	0.0268	Uncert:	+/-0.103	11.2	93	(75%-125%)				
				TPU:	+/-0.103							+/-0.176
				Uncert:	+/-0.071							+/-1.17
				TPU:	+/-0.0711							+/-1.78
Batch	592109											
QC1201238065	176896007	DUP										
Plutonium-241		U	6.51	U	4.12	pCi/g	0	(0% - 100%)	AXA1	12/05/06	20:09	
Plutonium-241				Uncert:	+/-7.02	136	98	(75%-125%)				
				TPU:	+/-7.05							+/-7.75
				Uncert:	+/-11.8							
				TPU:	+/-17.6							
QC1201238067	LCS											
Plutonium-241		139			pCi/g					12/05/06	20:42	
Plutonium-241			U	Uncert:	+/-6.72	3.78					12/05/06	19:53
				TPU:	+/-6.73							
				Uncert:	+/-18.1							
				TPU:	+/-18.1							
QC1201238066	176896007	MS										
Plutonium-241		141	U	6.51	139	pCi/g	99	(75%-125%)		12/05/06	20:26	
Actinium-228				Uncert:	+/-7.02	0.579	18	(0% - 100%)	MJH1			
				TPU:	+/-7.05							+/-0.0989
				Uncert:	+/-0.169							+/-0.0989
				TPU:	+/-0.169							+/-0.0989
Rad Gamma Spec												
Batch	592140											
QC1201238139	176896001	DUP										
Actinium-228		0.690		0.579	pCi/g	18		(0% - 100%)		12/05/06	11:48	
Actinium-228				Uncert:	+/-0.169	0.579	18	(0% - 100%)	MJH1			
				TPU:	+/-0.169							+/-0.0989
				Uncert:	+/-0.169							+/-0.0989
				TPU:	+/-0.169							+/-0.0989

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## QC Summary

Workorder: 176896

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 592140											
Americium-241	U	TPU:	+/-0.169	U	pCi/g	1090		(0% - 100%)			
			-0.0319								
		Uncert:	+/-0.0718								
Bismuth-212		TPU:	+/-0.0718		pCi/g	55		(0% - 100%)			
			0.737								
		Uncert:	+/-0.318								
Bismuth-214		TPU:	+/-0.318		pCi/g	19		(0% - 100%)			
			0.474								
		Uncert:	+/-0.0988								
Cesium-134	UI	TPU:	+/-0.0988	U	pCi/g	73		(0% - 100%)			
			0.00								
		Uncert:	+/-0.0205								
Cesium-137		TPU:	+/-0.0205		pCi/g	46		(0% - 100%)			
			0.0504								
		Uncert:	+/-0.044								
Cobalt-60	U	TPU:	+/-0.044	UI	pCi/g	104		(0% - 100%)			
			0.0122								
		Uncert:	+/-0.0226								
Europium-152	U	TPU:	+/-0.0226	U	pCi/g	68		(0% - 100%)			
			-0.0356								
		Uncert:	+/-0.0562								
Europium-154	U	TPU:	+/-0.0562	U	pCi/g	883		(0% - 100%)			
			0.0201								
		Uncert:	+/-0.0657								
Europium-155	U	TPU:	+/-0.0657	U	pCi/g	424		(0% - 100%)			
			-0.014								
		Uncert:	+/-0.0582								
Lead-212		TPU:	+/-0.0582		pCi/g	23*		(0% - 20%)			
			0.637								
		Uncert:	+/-0.0778								
Lead-214		TPU:	+/-0.0778		pCi/g	18		(0%-20%)			
			0.591								
		Uncert:	+/-0.0967								
Manganese-54	U	TPU:	+/-0.0967	U	pCi/g	41		(0% - 100%)			
			0.00981								
		Uncert:	+/-0.0206								
Niobium-94	U	TPU:	+/-0.0206	U	pCi/g	62		(0% - 100%)			
			0.0153								
		Uncert:	+/-0.0127								
Potassium-40		TPU:	+/-0.0127		pCi/g	3		(0% - 20%)			
			8.72								
		Uncert:	+/-0.980								
Radium-226		TPU:	+/-0.980		pCi/g	19		(0% - 100%)			
			0.474								
		Uncert:	+/-0.0988								
Silver-108m	U	TPU:	+/-0.0988	U	pCi/g	4		(0% - 100%)			
			-0.00701								
		Uncert:	+/-0.0167								

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## QC Summary

Workorder: 176896

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	592140										
Thallium-208	TPU:	+/-0.0167		+/-0.0104							
		0.169		0.195	pCi/g	14		(0% - 100%)			
	Uncert:	+/-0.0436		+/-0.0329							
	TPU:	+/-0.0436		+/-0.0329							
QC1201238140	LCS										
Actinium-228			U	-0.349	pCi/g					12/04/06	17:43
Americium-241	TPU:			+/-0.544							
		23.4		24.5	pCi/g		105	(75%-125%)			
	Uncert:			+/-1.33							
	TPU:			+/-1.33							
Bismuth-212			U	-0.197	pCi/g						
	Uncert:			+/-0.892							
	TPU:			+/-0.892							
			U	0.0481	pCi/g						
Bismuth-214	Uncert:			+/-0.206							
	TPU:			+/-0.206							
			U	0.0433	pCi/g						
	Uncert:			+/-0.129							
Cesium-134	TPU:			+/-0.129							
		9.52		9.77	pCi/g		103	(75%-125%)			
	Uncert:			+/-0.486							
	TPU:			+/-0.486							
Cesium-137		14.0		14.0	pCi/g		100	(75%-125%)			
	Uncert:			+/-0.633							
	TPU:			+/-0.633							
			U	-0.107	pCi/g						
Europium-152	Uncert:			+/-0.309							
	TPU:			+/-0.309							
			U	-0.022	pCi/g						
	Uncert:			+/-0.237							
Europium-154	TPU:			+/-0.237							
			U	0.200	pCi/g						
	Uncert:			+/-0.264							
	TPU:			+/-0.264							
Lead-212			U	0.133	pCi/g						
	Uncert:			+/-0.139							
	TPU:			+/-0.139							
			U	0.0188	pCi/g						
Lead-214	Uncert:			+/-0.206							
	TPU:			+/-0.206							
			U	0.0506	pCi/g						
	Uncert:			+/-0.122							
Manganese-54	TPU:			+/-0.122							
			U	0.116	pCi/g						
	Uncert:			+/-0.122							
	TPU:			+/-0.122							
Niobium-94			U	0.910	pCi/g						
	Uncert:			+/-0.122							
	TPU:			+/-0.122							
			U	0.910	pCi/g						
Potassium-40			U	0.910	pCi/g						

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## QC Summary

Workorder: 176896

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec										
Batch	592140									
			Uncert:							
			TPU:							
Radium-226		U	0.0481	pCi/g			(75%-125%)			
			Uncert:							
			TPU:							
Silver-108m		U	0.00823	pCi/g						
			Uncert:							
			TPU:							
Thallium-208		U	0.0835	pCi/g						
			Uncert:							
			TPU:							
QC1201238138 MB										
Actinium-228		U	0.00695	pCi/g					12/05/06	11:48
			Uncert:							
			TPU:							
Americium-241		U	0.00711	pCi/g						
			Uncert:							
			TPU:							
Bismuth-212		U	0.139	pCi/g						
			Uncert:							
			TPU:							
Bismuth-214		U	0.0265	pCi/g						
			Uncert:							
			TPU:							
Cesium-134		U	0.00575	pCi/g						
			Uncert:							
			TPU:							
Cesium-137		U	-0.0122	pCi/g						
			Uncert:							
			TPU:							
Cobalt-60		U	0.0207	pCi/g						
			Uncert:							
			TPU:							
Europium-152		U	0.00393	pCi/g						
			Uncert:							
			TPU:							
Europium-154		U	-0.033	pCi/g						
			Uncert:							
			TPU:							
Europium-155		U	0.0303	pCi/g						
			Uncert:							
			TPU:							
Lead-212		U	0.0116	pCi/g						
			Uncert:							
			TPU:							
Lead-214		U	0.0313	pCi/g						
			Uncert:							
			TPU:							

# GENERAL ENGINEERING LABORATORIES, LLC

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## QC Summary

Workorder: 176896

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	592140										
Manganese-54			U	0.00269	pCi/g						
	Uncert:			+/-0.0189							
	TPU:			+/-0.0189							
Niobium-94			U	-0.00121	pCi/g						
	Uncert:			+/-0.0166							
	TPU:			+/-0.0166							
Potassium-40			U	0.0654	pCi/g						
	Uncert:			+/-0.216							
	TPU:			+/-0.216							
Radium-226			U	0.0265	pCi/g						
	Uncert:			+/-0.0542							
	TPU:			+/-0.0542							
Silver-108m			U	-0.0139	pCi/g						
	Uncert:			+/-0.0167							
	TPU:			+/-0.0167							
Thallium-208			U	0.0157	pCi/g						
	Uncert:			+/-0.0195							
	TPU:			+/-0.0195							
Batch	592142										
QC1201238142	176890002	DUP									
Actinium-228		0.499		0.739	pCi/g	39		(0% - 100%)	MJH1	12/04/06	07:00
	Uncert:	+/-0.133		+/-0.139							
	TPU:	+/-0.133		+/-0.139							
Americium-241	U	0.0286	U	0.00936	pCi/g	101		(0% - 100%)			
	Uncert:	+/-0.0593		+/-0.0223							
	TPU:	+/-0.0593		+/-0.0223							
Bismuth-212		0.400		0.367	pCi/g	8		(0% - 100%)			
	Uncert:	+/-0.177		+/-0.223							
	TPU:	+/-0.177		+/-0.223							
Bismuth-214		0.425		0.515	pCi/g	19		(0% - 100%)			
	Uncert:	+/-0.0754		+/-0.0798							
	TPU:	+/-0.0754		+/-0.0798							
Cesium-134	U	0.0213	UI	0.00	pCi/g	91		(0% - 100%)			
	Uncert:	+/-0.0198		+/-0.0286							
	TPU:	+/-0.0198		+/-0.0286							
Cesium-137		0.0722		0.0527	pCi/g	31		(0% - 100%)			
	Uncert:	+/-0.0297		+/-0.0252							
	TPU:	+/-0.0297		+/-0.0252							
Cobalt-60	U	0.0304	U	0.00911	pCi/g	108		(0% - 100%)			
	Uncert:	+/-0.0183		+/-0.0209							
	TPU:	+/-0.0183		+/-0.0209							
Europium-152	U	0.00662	U	-0.00857	pCi/g	1550		(0% - 100%)			
	Uncert:	+/-0.0743		+/-0.0387							
	TPU:	+/-0.0743		+/-0.0387							
Europium-154	U	0.00889	U	-0.0259	pCi/g	409		(0% - 100%)			
	Uncert:	+/-0.098		+/-0.0566							
	TPU:	+/-0.098		+/-0.0566							
Europium-155	U	0.0169	U	0.0258	pCi/g	42		(0% - 100%)			

# GENERAL ENGINEERING LABORATORIES, LLC

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## QC Summary

Workorder: 176896

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	592142										
Lead-212		Uncert: +/-0.0482		+/-0.0557							
		TPU: +/-0.0482		+/-0.0557							
		0.527		0.591	pCi/g	11		(0% - 20%)			
		Uncert: +/-0.0622		+/-0.0454							
		TPU: +/-0.0622		+/-0.0454							
Lead-214		0.556		0.640	pCi/g	14		(0% - 20%)			
		Uncert: +/-0.0808		+/-0.0736							
		TPU: +/-0.0808		+/-0.0736							
Manganese-54		U 0.00229	U	0.00242	pCi/g	5		(0% - 100%)			
		Uncert: +/-0.0177		+/-0.0176							
		TPU: +/-0.0177		+/-0.0176							
Niobium-94		U -0.0108	U	-0.00432	pCi/g	86		(0% - 100%)			
		Uncert: +/-0.0173		+/-0.0161							
		TPU: +/-0.0173		+/-0.0161							
Potassium-40		11.4		10.1	pCi/g	12		(0% - 20%)			
		Uncert: +/-0.994		+/-0.786							
		TPU: +/-0.994		+/-0.786							
Radium-226		0.425		0.515	pCi/g	19		(0% - 100%)			
		Uncert: +/-0.0754		+/-0.0798							
		TPU: +/-0.0754		+/-0.0798							
Silver-108m		U 0.0032	U	0.0106	pCi/g	107		(0% - 100%)			
		Uncert: +/-0.0141		+/-0.0144							
		TPU: +/-0.0141		+/-0.0144							
Thallium-208		0.144		0.188	pCi/g	26		(0% - 100%)			
		Uncert: +/-0.0319		+/-0.0358							
		TPU: +/-0.0319		+/-0.0358							
QC1201238143	LCS										
Actinium-228			U	-0.0385	pCi/g					12/04/06	07:02
		Uncert: +/-0.615		+/-0.615							
		TPU: +/-0.615		+/-0.615							
Americium-241		23.4		24.4	pCi/g		104	(75%-125%)			
		Uncert: +/-0.541		+/-0.541							
		TPU: +/-0.541		+/-0.541							
Bismuth-212			U	-0.109	pCi/g						
		Uncert: +/-0.957		+/-0.957							
		TPU: +/-0.957		+/-0.957							
Bismuth-214			U	-0.146	pCi/g						
		Uncert: +/-0.217		+/-0.217							
		TPU: +/-0.217		+/-0.217							
Cesium-134			U	-0.0676	pCi/g						
		Uncert: +/-0.149		+/-0.149							
		TPU: +/-0.149		+/-0.149							
Cesium-137		9.52		10.4	pCi/g		109	(75%-125%)			
		Uncert: +/-0.503		+/-0.503							
		TPU: +/-0.503		+/-0.503							
Cobalt-60		14.0		14.5	pCi/g		104	(75%-125%)			
		Uncert: +/-0.677		+/-0.677							
		TPU: +/-0.677		+/-0.677							

# GENERAL ENGINEERING LABORATORIES, LLC

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

## QC Summary

Workorder: 176896

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	592142										
Europium-152			U	-0.0484	pCi/g						
	Uncert:			+/-0.266							
	TPU:			+/-0.266							
Europium-154			U	0.090	pCi/g						
	Uncert:			+/-0.250							
	TPU:			+/-0.250							
Europium-155			U	0.144	pCi/g						
	Uncert:			+/-0.227							
	TPU:			+/-0.227							
Lead-212			U	-0.0264	pCi/g						
	Uncert:			+/-0.146							
	TPU:			+/-0.146							
Lead-214			U	0.0333	pCi/g						
	Uncert:			+/-0.193							
	TPU:			+/-0.193							
Manganese-54			U	0.0139	pCi/g						
	Uncert:			+/-0.142							
	TPU:			+/-0.142							
Niobium-94			U	-0.0307	pCi/g						
	Uncert:			+/-0.116							
	TPU:			+/-0.116							
Potassium-40			U	0.0841	pCi/g						
	Uncert:			+/-0.896							
	TPU:			+/-0.896							
Radium-226			U	-0.146	pCi/g			(75%-125%)			
	Uncert:			+/-0.217							
	TPU:			+/-0.217							
Silver-108m			U	0.019	pCi/g						
	Uncert:			+/-0.109							
	TPU:			+/-0.109							
Thallium-208			U	-0.0275	pCi/g						
	Uncert:			+/-0.125							
	TPU:			+/-0.125							
QC1201238141	MB										
Actinium-228			U	0.016	pCi/g					12/04/06	07:00
	Uncert:			+/-0.0236							
	TPU:			+/-0.0236							
Americium-241			U	0.00128	pCi/g						
	Uncert:			+/-0.0195							
	TPU:			+/-0.0195							
Bismuth-212			U	0.0245	pCi/g						
	Uncert:			+/-0.102							
	TPU:			+/-0.102							
Bismuth-214			U	0.0232	pCi/g						
	Uncert:			+/-0.0167							
	TPU:			+/-0.0167							
Cesium-134			U	-0.00374	pCi/g						
	Uncert:			+/-0.00763							



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## QC Summary

Workorder: 176896

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>										
Batch	592142									
Cesium-137	TPU:		+/-0.00763							
		U	-0.00427	pCi/g						
	Uncert:		+/-0.00666							
Cobalt-60	TPU:		+/-0.00666							
		U	0.00632	pCi/g						
	Uncert:		+/-0.00816							
Europium-152	TPU:		+/-0.00816							
		U	-0.0022	pCi/g						
	Uncert:		+/-0.0183							
Europium-154	TPU:		+/-0.0183							
		U	-0.0122	pCi/g						
	Uncert:		+/-0.019							
Europium-155	TPU:		+/-0.019							
		U	0.00667	pCi/g						
	Uncert:		+/-0.0183							
Lead-212	TPU:		+/-0.0183							
		U	0.0162	pCi/g						
	Uncert:		+/-0.0249							
Lead-214	TPU:		+/-0.0249							
		U	0.00126	pCi/g						
	Uncert:		+/-0.0145							
Manganese-54	TPU:		+/-0.0145							
		U	0.00222	pCi/g						
	Uncert:		+/-0.00775							
Niobium-94	TPU:		+/-0.00775							
		U	0.00384	pCi/g						
	Uncert:		+/-0.00734							
Potassium-40	TPU:		+/-0.00734							
		U	0.158	pCi/g						
	Uncert:		+/-0.098							
Radium-226	TPU:		+/-0.098							
		U	0.0232	pCi/g						
	Uncert:		+/-0.0167							
Silver-108m	TPU:		+/-0.0167							
		U	0.00867	pCi/g						
	Uncert:		+/-0.0121							
Thallium-208	TPU:		+/-0.0121							
		UI	0.00	pCi/g						
	Uncert:		+/-0.00876							
	TPU:		+/-0.00876							
<b>Rad Gas Flow</b>										
Batch	592186									
QC1201238232	176896007	DUP								
Strontium-90		0.766	0.315	pCi/g	84*		(0% - 20%) KSD1		12/07/06	12:19
	Uncert:	+/-0.116	+/-0.0715							
	TPU:	+/-0.118	+/-0.0719							
QC1201238234	LCS									
Strontium-90	4390		4740	pCi/g		108	(75%-125%)		12/07/06	12:24

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## QC Summary

Workorder: 176896

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	592186										
				Uncert:							
				TPU:							
QC1201238231	MB										
Strontium-90			U	0.00521	pCi/g					12/07/06	12:18
				Uncert:							
				TPU:							
QC1201238233	176896007	MS									
Strontium-90				4390	0.766	4830	pCi/g	110 (75%-125%)		12/07/06	12:23
				Uncert:	+/-0.116	+/-5.59					
				TPU:	+/-0.118	+/-120					
Rad Liquid Scintillation											
Batch	592304										
QC1201238527	176518004	DUP									
Iron-55			U	-16.5	U	-9.15	pCi/g	0 (0% - 100%) MXP1		12/02/06	19:38
				Uncert:		+/-39.7					
				TPU:		+/-39.7					
QC1201238529	LCS										
Iron-55				797		803	pCi/g	101 (75%-125%)		12/02/06	20:11
				Uncert:		+/-60.4					
				TPU:		+/-107					
QC1201238526	MB										
Iron-55			U	-10.8			pCi/g			12/02/06	19:22
				Uncert:		+/-29.0					
				TPU:		+/-29.0					
QC1201238528	176518004	MS									
Iron-55			U	806	-16.5	789	pCi/g	98 (75%-125%)		12/02/06	19:54
				Uncert:	+/-39.7	+/-72.2					
				TPU:	+/-39.7	+/-126					
Batch	592310										
QC1201238547	176896007	DUP									
Nickel-63			U	-2.44	U	4.04	pCi/g	0 (0% - 100%) MXP1		12/04/06	21:37
				Uncert:		+/-12.1					
				TPU:		+/-12.1					
QC1201238549	LCS										
Nickel-63				513		503	pCi/g	98 (75%-125%)		12/04/06	22:10
				Uncert:		+/-27.8					
				TPU:		+/-32.8					
QC1201238546	MB										
Nickel-63			U	-3.04			pCi/g			12/04/06	21:20
				Uncert:		+/-10.4					
				TPU:		+/-10.4					
QC1201238548	176896007	MS									
Nickel-63			U	513	-2.44	595	pCi/g	116 (75%-125%)		12/04/06	21:53
				Uncert:	+/-12.1	+/-32.5					
				TPU:	+/-12.1	+/-38.5					
Batch	592312										
QC1201238555	176896007	DUP									
Technetium-99			U	0.194	U	0.175	pCi/g	11 (0% - 100%) KXR1		12/06/06	19:28

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## QC Summary

Workorder: 176896

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time	
Rad Liquid Scintillation												
Batch	592312											
				Uncert:								
				TPU:								
QC1201238557	LCS											
Technetium-99				12.9				12.7	pCi/g	99	(75%-125%)	12/06/06 20:32
				Uncert:				+/-0.375				
				TPU:				+/-0.471				
QC1201238554	MB											
Technetium-99								0.283	pCi/g			12/06/06 18:57
				Uncert:				+/-0.148				
				TPU:				+/-0.148				
QC1201238556	176896007	MS										
Technetium-99				12.9	U	0.194		12.6	pCi/g	98	(75%-125%)	12/06/06 20:00
				Uncert:		+/-0.161		+/-0.388				
				TPU:		+/-0.162		+/-0.480				
Batch	592313											
QC1201238559	176896007	DUP										
Carbon-14				U	-0.0179	U	-0.0249	pCi/g	0		(0% - 100%)	AXD2 12/01/06 22:47
				Uncert:	+/-0.0898		+/-0.0889					
				TPU:	+/-0.0898		+/-0.0889					
QC1201238561	LCS											
Carbon-14				6.69				7.10	pCi/g	106	(75%-125%)	12/02/06 00:53
				Uncert:				+/-0.201				
				TPU:				+/-0.229				
QC1201238558	MB											
Carbon-14						U	0.000718	pCi/g				12/01/06 21:43
				Uncert:			+/-0.0906					
				TPU:			+/-0.0906					
QC1201238560	176896007	MS										
Carbon-14				6.86	U	-0.0179		6.91	pCi/g	101	(75%-125%)	12/01/06 23:50
				Uncert:		+/-0.0898		+/-0.202				
				TPU:		+/-0.0898		+/-0.228				
Batch	593064											
QC1201240326	176890008	DUP										
Tritium				U	-1.0	U	-1.35	pCi/g	0		(0% - 100%)	DFA1 12/06/06 09:52
				Uncert:	+/-1.29		+/-1.29					
				TPU:	+/-1.29		+/-1.29					
QC1201240328	LCS											
Tritium				15.2				15.3	pCi/g	100	(75%-125%)	12/06/06 14:05
				Uncert:				+/-0.929				
				TPU:				+/-0.965				
QC1201240325	MB											
Tritium						U	-0.759	pCi/g				12/06/06 07:45
				Uncert:			+/-0.578					
				TPU:			+/-0.578					
QC1201240327	176890008	MS										
Tritium				19.8	U	-1.0		16.3	pCi/g	83	(75%-125%)	12/06/06 11:59
				Uncert:		+/-1.29		+/-2.05				
				TPU:		+/-1.29		+/-2.07				

# GENERAL ENGINEERING LABORATORIES, LLC

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## QC Summary

Workorder: 176896

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
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### Notes:

The Qualifiers in this report are defined as follows:

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

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

\*\* Indicates analyte is a surrogate compound.

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

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

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

# **General Narrative**

**General Narrative  
for  
Connecticut Yankee Atomic Power Co.  
Work Order: 174936  
SDG: MSR#06-1407**

**October 30, 2006**

**Laboratory Identification:**

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

**Summary**

**Sample receipt**

The samples arrived at General Engineering Laboratories, LLC, Charleston, South Carolina on October 26, 2006 for analysis. Shipping container temperatures were checked, documented, and within specifications. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

**Sample Identification** The laboratory received the following samples:

<b><u>Laboratory Identification</u></b>	<b><u>Sample Description</u></b>
174936001	9522-01-005C
174936002	9522-01-007C
174936003	9520-0004-016F
174936004	9520-0004-017F
174936005	9504-0-010C
174936006	9504-0-013C
174936007	9520-0005-019F

**Items of Note**

There are no items to note.

**Case Narrative**

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

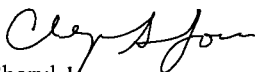
**Analytical Request**

Four soil samples were analyzed for CHALL. Three soil samples were analyzed for FSSGAM.

**Data Package**

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

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



Cheryl Jones  
Project Manager

**List of current GEL Certifications as of 30 October 2006**

<b>State</b>	<b>Certification</b>
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**

## Chain of Custody Form

No. 2006-00637

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

Project Name: Haddam Neck Decommissioning						Analyses Requested							Lab Use Only																						
Contact Name & Phone: Jack McCarthy 860-267-3924						Media Code	Sample Type Code	Container Size- & Type Code							Comments:																				
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"/> 14 D. <input checked="" type="checkbox"/> 7 D. Other:																																			
Sample Designation																																			
Date	Time																																		
9522-01-005C	10-18-06	1355	TS	G	BP	X																													
9522-01-007C	10-18-06	1425	IS	E	BP	X																													
NOTES: PO #: 002332      MSR #: 06-1407 <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.: 18 Deg. C  Custody Sealed? YX N Custody Seal Intact?																						
1) Relinquished By <i>[Signature]</i>						Date/Time 10/25/06 1430						2) Received By <i>[Signature]</i>						Date/Time 10/26/06 9:00																	
3) Relinquished By						Date/Time						4) Received By						Date/Time																	
5) Relinquished By						Date/Time						6) Received By						Date/Time																	
												Bill of Lading # 798028343252												YX N											

## Chain of Custody Form

No. 2006-00638

362 Injun Hollow Road, East Hampton, CT 06424

860-267-2556

[illegible]

Connecticut Yankee Atomic Power Company						Chain of Custody Form						No. 2006-00639	
362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556													
Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested						Lab Use Only	
Contact Name & Phone: Jack McCarthy 860-267-3924						CHALL							Comments:  1749361
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"/> 14 D. <input checked="" type="checkbox"/> 7 D. Other:													
Sample Designation	Date	Time									Comment, Preservation	Lab Sample ID	
9504-0-010C	10/10/06	1035	TS	G	BP	X							
9504-0-013C	10/10/06	0820	TS	G	BP	X							
NOTES: PO #: 002332      MSR #: 06-1407 <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.: 18 Deg. C  Custody Sealed? <input checked="" type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? <input checked="" type="checkbox"/> N <input type="checkbox"/>	
1) Relinquished By <i>[Signature]</i> Date/Time 10/25/06 1430			2) Received By <i>[Signature]</i> Date/Time 10/26/06 9:00			7980 2834 3252 Bill of Lading #						<i>[Signature]</i> N <input type="checkbox"/>	
3) Relinquished By      Date/Time			4) Received By      Date/Time										
5) Relinquished By      Date/Time			6) Received By      Date/Time										

## No. 2006-00640

860-267-2556

[illegible]

Figure 1. Sample Check-in List

Date/Time Received: 9100 10/26/06

SDG#: MSR#06-1407

Work Order Number: 1749361

Shipping Container ID: 1980 2834 3252 Chain of Custody # 2006-00640-00637  
00639  
00638

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 18°
5. Vermiculite/packing materials is: Wet ☐ Dry ☒
6. Number of samples in shipping container: 7
7. Sample holding times exceeded? Yes ☐ No ☒

8. Samples have:

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

9. Samples are:

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

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

11. Description of anomalies (include sample numbers): \_\_\_\_\_

Sample Custodian/Laboratory: Chase Date: 10/26/06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

# **Data Review Qualifier Definitions**

## Data Review Qualifier Definitions

Qualifier	Explanation
-----------	-------------

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



# **RADIOLOGICAL ANALYSIS**

**Radiochemistry Case Narrative  
Connecticut Yankee Atomic Power Co. (YANK)  
Work Order 174936**

**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:	583311
Prep Batch Number:	583211
Dry Soil Prep GL-RAD-A-021 Batch Number:	583196

<b>Sample ID</b>	<b>Client ID</b>
174936001	9522-01-005C
174936002	9522-01-007C
174936005	9504-0-010C
174936006	9504-0-013C
1201216888	Method Blank (MB)
1201216890	174936001(9522-01-005C) Matrix Spike (MS)
1201216891	Laboratory Control Sample (LCS)
1201217370	174936001(9522-01-005C) Sample Duplicate (DUP)

**SOP Reference**

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

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

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

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

**Designated QC**

The following sample was used for QC: 174936001 (9522-01-005C).

**QC Information**

All of the QC samples met the required acceptance limits.

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

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

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

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

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

The blank, 1201216888 (MB), did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots. All other samples met the detection limits.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>Alphaspec Pu, 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:	583312
Prep Batch Number:	583211
Dry Soil Prep GL-RAD-A-021 Batch Number:	583196

<b>Sample ID</b>	<b>Client ID</b>
174936001	9522-01-005C
174936002	9522-01-007C
174936005	9504-0-010C
174936006	9504-0-013C
1201216892	Method Blank (MB)
1201216893	174936001(9522-01-005C) Sample Duplicate (DUP)
1201216894	174936001(9522-01-005C) Matrix Spike (MS)
1201216895	Laboratory Control Sample (LCS)

#### **SOP Reference**

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

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

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

##### **Sample Geometry**

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

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

##### **Blank Information**

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

##### **Designated QC**

The following sample was used for QC: 174936001 (9522-01-005C).

##### **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:	583313
Prep Batch Number:	583211
Dry Soil Prep GL-RAD-A-021 Batch Number:	583196

<b>Sample ID</b>	<b>Client ID</b>
174936001	9522-01-005C
174936002	9522-01-007C
174936005	9504-0-010C
174936006	9504-0-013C
1201216896	Method Blank (MB)
1201216897	174936001(9522-01-005C) Sample Duplicate (DUP)
1201216898	174936001(9522-01-005C) Matrix Spike (MS)
1201216899	Laboratory Control Sample (LCS)

#### **SOP Reference**

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

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

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

##### **Sample Geometry**

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

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

##### **Blank Information**

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

##### **Designated QC**

The following sample was used for QC: 174936001 (9522-01-005C).

##### **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**

The batch was recounted due to a low LCS 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.

#### **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:	583389
Prep Batch Number:	583196

<b>Sample ID</b>	<b>Client ID</b>
174936001	9522-01-005C
174936002	9522-01-007C
174936003	9520-0004-016F
174936004	9520-0004-017F
174936005	9504-0-010C
174936006	9504-0-013C
174936007	9520-0005-019F
1201217095	Method Blank (MB)
1201217096	174911001(9801-0-R101-SFCC-01-C1 (0-2in)) Sample Duplicate (DUP)
1201217097	Laboratory Control Sample (LCS)

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 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: 174911001 (9801-0-R101-SFCC-01-C1 (0-2in)).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

**Miscellaneous Information:**

**NCR Documentation**

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

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**



Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high counting uncertainty.	Bismuth-212	1201217096
UI	Data rejected due to high peak-width.	Cesium-134	1201217095
UI	Data rejected due to interference.	Europium-155	174936002
		Manganese-54	174936002
			174936005
UI	Data rejected due to low abundance.	Cesium-134	174936001
			174936002
			174936005
			174936007
			1201217096
		Lead-214	1201217095

#### **Method/Analysis Information**

**Product:** GFPC, Sr90, solid-ALL FSS  
**Analytical Method:** EPA 905.0 Modified  
**Prep Method:** Ash Soil Prep  
**Dry Soil Prep GL-RAD-A-021 Method:** Dry Soil Prep  
**Analytical Batch Number:** 583243  
**Prep Batch Number:** 583211  
**Dry Soil Prep GL-RAD-A-021 Batch Number:** 583196

Sample ID	Client ID
174936001	9522-01-005C
174936002	9522-01-007C
174936005	9504-0-010C
174936006	9504-0-013C
1201216717	Method Blank (MB)
1201216718	174936001(9522-01-005C) Sample Duplicate (DUP)
1201216719	174936001(9522-01-005C) Matrix Spike (MS)
1201216720	Laboratory Control Sample (LCS)

**SOP Reference**

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

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

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

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

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

**Designated QC**

The following sample was used for QC: 174936001 (9522-01-005C).

**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 being originally counted on detectors with expired calibrations.

**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 blank result for 1201216717 (MB) is greater than the MDA but less than the detection limit.

### **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:** 583233

<b>Sample ID</b>	<b>Client ID</b>
174936001	9522-01-005C
174936002	9522-01-007C
174936005	9504-0-010C
174936006	9504-0-013C
1201216689	Method Blank (MB)
1201216690	174936001(9522-01-005C) Sample Duplicate (DUP)
1201216691	174936001(9522-01-005C) Matrix Spike (MS)
1201216692	Laboratory Control Sample (LCS)

### **SOP Reference**

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

### **Calibration Information:**

#### **Calibration Information**

All initial and continuing calibration requirements have been met.

#### **Standards Information**

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

#### **Sample Geometry**

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

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

#### **Blank Information**

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

#### **Designated QC**

The following sample was used for QC: 174936001 (9522-01-005C).

#### **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 174936001 (9522-01-005C) and 174936002 (9522-01-007C) were recounted due to spectral interference.

**Miscellaneous Information:**

**NCR Documentation**

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

**Additional Comments**

The result for sample 174936006 (9504-0-013C) is biased high due to spectral interference.

**Qualifier information**

Qualifier	Reason	Analyte	Sample
X	Sample result biased high due to spectral interference.	Technetium-99	174936006

**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:	583239
Prep Batch Number:	583211
Dry Soil Prep GL-RAD-A-021 Batch Number:	583196

<b>Sample ID</b>	<b>Client ID</b>
174936001	9522-01-005C
174936002	9522-01-007C
174936005	9504-0-010C
174936006	9504-0-013C
1201216709	Method Blank (MB)
1201216710	174936001(9522-01-005C) Sample Duplicate (DUP)
1201216711	174936001(9522-01-005C) Matrix Spike (MS)
1201216712	Laboratory Control Sample (LCS)

### **SOP Reference**

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

### **Calibration Information:**

#### **Calibration Information**

All initial and continuing calibration requirements have been met.

#### **Standards Information**

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

#### **Sample Geometry**

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

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

#### **Blank Information**

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

#### **Designated QC**

The following sample was used for QC: 174936001 (9522-01-005C).

#### **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 Ni63, Solid-ALL FSS</b>
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:	583241
Prep Batch Number:	583211
Dry Soil Prep GL-RAD-A-021 Batch Number:	583196

<b>Sample ID</b>	<b>Client ID</b>
174936001	9522-01-005C
174936002	9522-01-007C
174936005	9504-0-010C
174936006	9504-0-013C
1201216713	Method Blank (MB)
1201216714	174936001(9522-01-005C) Sample Duplicate (DUP)
1201216715	174936001(9522-01-005C) Matrix Spike (MS)
1201216716	Laboratory Control Sample (LCS)

**SOP Reference**

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

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

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

**Quality Control (QC) Information:**

**Blank Information**

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

**Designated QC**

The following sample was used for QC: 174936001 (9522-01-005C).

**QC Information**

All of the QC samples met the required acceptance limits.

**Technical Information:**

**Holding Time**

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

**Miscellaneous Information:**

**NCR Documentation**

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

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** LSC, Tritium Dist, Solid-HTD2,ALL FSS  
**Analytical Method:** EPA 906.0 Modified  
**Analytical Batch Number:** 583234

<b>Sample ID</b>	<b>Client ID</b>
174936001	9522-01-005C
174936002	9522-01-007C
174936005	9504-0-010C
174936006	9504-0-013C
1201216693	Method Blank (MB)
1201216694	174936001(9522-01-005C) Sample Duplicate (DUP)
1201216695	174936001(9522-01-005C) Matrix Spike (MS)
1201216696	Laboratory Control Sample (LCS)

#### **SOP Reference**

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

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

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

##### **Sample Geometry**

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

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

##### **Blank Information**

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

##### **Designated QC**

The following sample was used for QC: 174936001 (9522-01-005C).

##### **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 174936005 (9504-0-010C) was recounted due to high MDA.

**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 C14, Solid All,FSS</b>
Analytical Method:	EPA EERF C-01 Modified
Analytical Batch Number:	583236

<b>Sample ID</b>	<b>Client ID</b>
174936001	9522-01-005C
174936002	9522-01-007C
174936005	9504-0-010C
174936006	9504-0-013C
1201216701	Method Blank (MB)
1201216702	174936001(9522-01-005C) Sample Duplicate (DUP)
1201216703	174936001(9522-01-005C) Matrix Spike (MS)
1201216704	Laboratory Control Sample (LCS)

**SOP Reference**

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

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

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

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

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

**Designated QC**

The following sample was used for QC: 174936001 (9522-01-005C).

**QC Information**

All of the QC samples met the required acceptance limits.

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

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

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

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

**Additional Comments**

Additional comments were not required for this sample set.

**Qualifier information**

Manual qualifiers were not required.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation:**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

**The following data validator verified the information presented in this case narrative:**

**Reviewer/Date:**

*Pamela Williams* 11/2/06

# SAMPLE DATA SUMMARY

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis Report for

YANK001 Connecticut Yankee Atomic Power Co.

Client SDG: MSR#06-1407 GEL Work Order: 174936

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

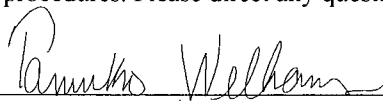
- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- ND The analyte concentration is not detected above the detection limit.

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

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

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

Reviewed by



# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: November 2, 2006

Client Sample ID: 9522-01-005C  
Sample ID: 174936001  
Matrix: TS  
Collect Date: 18-OCT-06  
Receive Date: 26-OCT-06  
Collector: Client  
Moisture: 37.8%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.00136	+/-0.138	0.115	+/-0.138	0.327	pCi/g		MXA	10/30/06	1058	583311	1
Curium-242	U	0.0391	+/-0.110	0.0674	+/-0.110	0.237	pCi/g						
Curium-243/244	U	-0.0385	+/-0.139	0.132	+/-0.140	0.361	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.104	+/-0.112	0.133	+/-0.113	0.352	pCi/g		MXA	10/30/06	1058	583312	2
Plutonium-239/240	U	-0.137	+/-0.0631	0.120	+/-0.0652	0.326	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	-5.01	+/-7.31	6.36	+/-7.31	13.4	pCi/g		MXA	11/02/06	0824	583313	3
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma,Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.942	+/-0.216	0.0684	+/-0.216	0.148	pCi/g		MJH1	10/31/06	0910	583389	5
Americium-241		0.232	+/-0.147	0.0857	+/-0.147	0.177	pCi/g						
Bismuth-212		1.25	+/-0.452	0.152	+/-0.452	0.326	pCi/g						
Bismuth-214		1.01	+/-0.155	0.0431	+/-0.155	0.091	pCi/g						
Cesium-134	UI	0.00	+/-0.0505	0.0289	+/-0.0505	0.061	pCi/g						
Cesium-137		1.58	+/-0.100	0.0221	+/-0.100	0.0469	pCi/g						
Cobalt-60	U	0.0278	+/-0.0308	0.0272	+/-0.0308	0.0585	pCi/g						
Europium-152	U	-0.0437	+/-0.0735	0.0588	+/-0.0735	0.123	pCi/g						
Europium-154	U	0.0164	+/-0.0885	0.0637	+/-0.0885	0.139	pCi/g						
Europium-155	U	0.0621	+/-0.0836	0.0693	+/-0.0836	0.143	pCi/g						
Lead-212		1.10	+/-0.0891	0.0406	+/-0.0891	0.0838	pCi/g						
Lead-214		0.962	+/-0.132	0.044	+/-0.132	0.0921	pCi/g						
Manganese-54	U	-0.00466	+/-0.0271	0.0223	+/-0.0271	0.0474	pCi/g						
Niobium-94	U	-0.0112	+/-0.0232	0.0188	+/-0.0232	0.0401	pCi/g						
Potassium-40		12.1	+/-1.00	0.191	+/-1.00	0.423	pCi/g						
Radium-226		1.01	+/-0.155	0.0431	+/-0.155	0.091	pCi/g						
Silver-108m	U3.670E-05		+/-0.026	0.0213	+/-0.026	0.0446	pCi/g						
Thallium-208		0.306	+/-0.0549	0.0218	+/-0.0549	0.0461	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.0263	+/-0.0109	0.00825	+/-0.011	0.0172	pCi/g		KSD1	11/01/06	2100	583243	6

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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: November 2, 2006

Client Sample ID: 9522-01-005C  
Sample ID: 174936001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	3.72	+/-5.94	4.71	+/-5.94	10.2	pCi/g	DFA1	10/28/06	0650	583234	7	
<i>Liquid Scint C14, Solid ALL FSS</i>													
Carbon-14	U	0.179	+/-0.112	0.0898	+/-0.112	0.184	pCi/g	AXD2	10/27/06	2110	583236	8	
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	14.2	+/-19.7	12.8	+/-19.7	27.0	pCi/g	MXPI	11/01/06	1809	583239	9	
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	-0.799	+/-7.83	6.60	+/-7.83	13.8	pCi/g	MXPI	11/01/06	1536	583241	10	
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.320	+/-0.221	0.181	+/-0.221	0.367	pCi/g	KXR1	10/31/06	2145	583233	1	

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	WXL1	10/26/06	1442	583196

### 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	DOE EML HASL-300, Pu-11-RC Modified
5	EML HASL 300, 4.5.2.3
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 Ni-1, Modified
11	DOE EML HASL-300, Tc-02-RC Modified
12	DOE EML HASL-300, Tc-02-RC Modified
13	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	92	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	93	(15%-125%)

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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: November 2, 2006

Client Sample ID: 9522-01-005C  
Sample ID: 174936001

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtr
Plutonium-241		Liquid Scint Pu241, Solid-ALL FS			88		(25%-125%)					
Strontium-90		GFPC, Sr90, solid-ALL FSS			76		(25%-125%)					
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			76		(25%-125%)					
Iron-55		Liquid Scint Fe55, Solid-ALL FS			83		(15%-125%)					
Nickel-63		Liquid Scint Ni63, Solid-ALL FS			88		(25%-125%)					
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			88		(25%-125%)					
Technetium-99		Liquid Scint Tc99, Solid-ALL FS			50		(15%-125%)					
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			50		(15%-125%)					

### Notes:

The Qualifiers in this report are defined as follows :

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



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## Certificate of Analysis

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

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

Report Date: November 2, 2006

Client Sample ID: 9522-01-007C  
Sample ID: 174936002  
Matrix: TS  
Collect Date: 18-OCT-06  
Receive Date: 26-OCT-06  
Collector: Client  
Moisture: 18%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.0547	+/-0.122	0.0789	+/-0.123	0.237	pCi/g		MXA	10/30/06	1058	583311	1
Curium-242	U	0.0395	+/-0.0893	0.048	+/-0.0894	0.180	pCi/g						
Curium-243/244	U	-0.0258	+/-0.0943	0.0912	+/-0.0944	0.262	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.0671	+/-0.0439	0.0837	+/-0.0444	0.252	pCi/g		MXA	10/30/06	1058	583312	2
Plutonium-239/240	U	0.0733	+/-0.145	0.0925	+/-0.145	0.269	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	4.10	+/-7.32	5.96	+/-7.33	12.5	pCi/g		MXA	11/02/06	0840	583313	3
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		4.39	+/-0.204	0.0457	+/-0.204	0.0959	pCi/g		MJH1	10/31/06	0925	583389	5
Americium-241	U	-0.147	+/-0.0988	0.0841	+/-0.0988	0.170	pCi/g						
Bismuth-212		2.99	+/-0.322	0.128	+/-0.322	0.264	pCi/g						
Bismuth-214		1.41	+/-0.0972	0.0296	+/-0.0972	0.0611	pCi/g						
Cesium-134	UI	0.00	+/-0.0358	0.0276	+/-0.0358	0.0564	pCi/g						
Cesium-137		2.55	+/-0.0752	0.0187	+/-0.0752	0.0386	pCi/g						
Cobalt-60	U	0.0262	+/-0.0175	0.0166	+/-0.0175	0.0351	pCi/g						
Europium-152	U	-0.03	+/-0.059	0.0503	+/-0.059	0.103	pCi/g						
Europium-154	U	0.0248	+/-0.0468	0.0422	+/-0.0468	0.0893	pCi/g						
Europium-155	UI	0.00	+/-0.0881	0.056	+/-0.0881	0.114	pCi/g						
Lead-212		4.38	+/-0.0865	0.0288	+/-0.0865	0.0585	pCi/g						
Lead-214		1.56	+/-0.100	0.0346	+/-0.100	0.0707	pCi/g						
Manganese-54	UI	0.00	+/-0.0272	0.0159	+/-0.0272	0.0331	pCi/g						
Niobium-94	U	0.0109	+/-0.0182	0.0162	+/-0.0182	0.0335	pCi/g						
Potassium-40		2.51	+/-0.375	0.124	+/-0.375	0.266	pCi/g						
Radium-226		1.41	+/-0.0972	0.0296	+/-0.0972	0.0611	pCi/g						
Silver-108m	U	-0.00514	+/-0.0191	0.0173	+/-0.0191	0.0353	pCi/g						
Thallium-208		1.40	+/-0.0595	0.0174	+/-0.0595	0.0359	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.0327	+/-0.00864	0.00613	+/-0.00866	0.0128	pCi/g		KSD1	11/01/06	2100	583243	6
<b>Rad Liquid Scintillation Analysis</b>													

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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: November 2, 2006

Client Sample ID: 9522-01-007C  
Sample ID: 174936002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	3.14	+/-7.71	6.23	+/-7.71	13.5	pCi/g		DFA1	10/28/06	0706	583234	7
<i>Liquid Scint C14, Solid ALL FSS</i>													
Carbon-14	U	0.0254	+/-0.113	0.0944	+/-0.113	0.194	pCi/g		AXD2	10/27/06	2158	583236	8
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	8.48	+/-18.0	11.8	+/-18.0	24.9	pCi/g		MXP1	11/01/06	1825	583239	9
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	2.80	+/-7.02	5.78	+/-7.02	12.1	pCi/g		MXP1	11/01/06	1558	583241	1
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99		0.321	+/-0.163	0.126	+/-0.163	0.262	pCi/g		KXR1	10/31/06	2246	583233	1

### **The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	WXL1	10/26/06	1442	583196

### **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	DOE EML HASL-300, Pu-11-RC Modified
5	EML HASL 300, 4.5.2.3
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 Ni-1, Modified
11	DOE EML HASL-300, Tc-02-RC Modified
12	DOE EML HASL-300, Tc-02-RC Modified
13	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	93	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	91	(15%-125%)

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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: November 2, 2006

Client Sample ID: 9522-01-007C  
Sample ID: 174936002

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtr
Plutonium-241		Liquid Scint Pu241, Solid-ALL FS			94		(25%-125%)					
Strontium-90		GFPC, Sr90, solid-ALL FSS			100		(25%-125%)					
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			100		(25%-125%)					
Iron-55		Liquid Scint Fe55, Solid-ALL FS			86		(15%-125%)					
Nickel-63		Liquid Scint Ni63, Solid-ALL FS			90		(25%-125%)					
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			90		(25%-125%)					
Technetium-99		Liquid Scint Tc99, Solid-ALL FS			113		(15%-125%)					
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			113		(15%-125%)					

### Notes:

The Qualifiers in this report are defined as follows :

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

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## Certificate of Analysis

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

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

Report Date: November 2, 2006

Client Sample ID: 9520-0004-016F  
Sample ID: 174936003  
Matrix: TS  
Collect Date: 19-OCT-06  
Receive Date: 26-OCT-06  
Collector: Client  
Moisture: 15.4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.747	+/-0.134	0.0498	+/-0.134	0.105	pCi/g		MJH1	10/31/06	0927	583389	
Americium-241	U	0.0504	+/-0.105	0.0823	+/-0.105	0.169	pCi/g						
Bismuth-212		0.654	+/-0.242	0.105	+/-0.242	0.221	pCi/g						
Bismuth-214		0.970	+/-0.0713	0.026	+/-0.0713	0.0544	pCi/g						
Cesium-134	U	0.0184	+/-0.0256	0.0177	+/-0.0256	0.0372	pCi/g						
Cesium-137		0.125	+/-0.0228	0.0129	+/-0.0228	0.0273	pCi/g						
Cobalt-60	U	-0.00778	+/-0.0166	0.0131	+/-0.0166	0.0286	pCi/g						
Europium-152	U	0.00444	+/-0.044	0.0366	+/-0.044	0.076	pCi/g						
Europium-154	U	-0.0216	+/-0.0534	0.0432	+/-0.0534	0.0927	pCi/g						
Europium-155	U	0.0674	+/-0.0698	0.0415	+/-0.0698	0.0852	pCi/g						
Lead-212		0.838	+/-0.0517	0.0219	+/-0.0517	0.045	pCi/g						
Lead-214		1.12	+/-0.0838	0.0267	+/-0.0838	0.0553	pCi/g						
Manganese-54	U	0.0154	+/-0.0174	0.0152	+/-0.0174	0.032	pCi/g						
Niobium-94	U	-0.00323	+/-0.015	0.0124	+/-0.015	0.026	pCi/g						
Potassium-40		12.1	+/-0.758	0.140	+/-0.758	0.303	pCi/g						
Radium-226		0.970	+/-0.0713	0.026	+/-0.0713	0.0544	pCi/g						
Silver-108m	U	-0.00181	+/-0.0144	0.0125	+/-0.0144	0.0261	pCi/g						
Thallium-208		0.238	+/-0.0369	0.013	+/-0.0369	0.0273	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	WXL1	10/26/06	1443	583196

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

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## Certificate of Analysis

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

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

Report Date: November 2, 2006

Client Sample ID: 9520-0004-016F  
Sample ID: 174936003

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

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

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## Certificate of Analysis

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

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

Report Date: November 2, 2006

Client Sample ID: 9520-0004-017F  
Sample ID: 174936004  
Matrix: TS  
Collect Date: 19-OCT-06  
Receive Date: 26-OCT-06  
Collector: Client  
Moisture: 18.7%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtc
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.492	+/-0.157	0.0658	+/-0.157	0.140	pCi/g		MJH1	10/31/06	0927	583389	1
Americium-241	U	-0.0222	+/-0.0995	0.0726	+/-0.0995	0.149	pCi/g						
Bismuth-212		0.424	+/-0.289	0.143	+/-0.289	0.303	pCi/g						
Bismuth-214		0.778	+/-0.115	0.0326	+/-0.115	0.0688	pCi/g						
Cesium-134	U	0.00206	+/-0.0338	0.0207	+/-0.0338	0.0438	pCi/g						
Cesium-137		0.168	+/-0.0358	0.0171	+/-0.0358	0.0363	pCi/g						
Cobalt-60	U	-0.0183	+/-0.024	0.0187	+/-0.024	0.0408	pCi/g						
Europium-152	U	-0.00147	+/-0.061	0.0498	+/-0.061	0.103	pCi/g						
Europium-154	U	-0.0213	+/-0.0645	0.0528	+/-0.0645	0.115	pCi/g						
Europium-155	U	0.00598	+/-0.0551	0.0479	+/-0.0551	0.0986	pCi/g						
Lead-212		0.616	+/-0.0645	0.0293	+/-0.0645	0.0603	pCi/g						
Lead-214		0.926	+/-0.0913	0.0374	+/-0.0913	0.0776	pCi/g						
Manganese-54	U	0.0215	+/-0.0229	0.0202	+/-0.0229	0.0426	pCi/g						
Niobium-94	U	0.00767	+/-0.0209	0.0179	+/-0.0209	0.0376	pCi/g						
Potassium-40		9.31	+/-0.909	0.166	+/-0.909	0.366	pCi/g						
Radium-226		0.778	+/-0.115	0.0326	+/-0.115	0.0688	pCi/g						
Silver-108m	U	-0.00183	+/-0.0211	0.0168	+/-0.0211	0.0352	pCi/g						
Thallium-208		0.222	+/-0.0438	0.0192	+/-0.0438	0.0402	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	WXL1	10/26/06	1444	583196

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: November 2, 2006

Client Sample ID: 9520-0004-017F  
Sample ID: 174936004

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

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

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## Certificate of Analysis

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

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

Report Date: November 2, 2006

Client Sample ID: 9504-0-010C  
Sample ID: 174936005  
Matrix: TS  
Collect Date: 10-OCT-06  
Receive Date: 26-OCT-06  
Collector: Client  
Moisture: 43.4%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	0.0682	+/-0.103	0.0315	+/-0.103	0.158	pCi/g		MXA	10/30/06	1058	583311	1
Curium-242	U	-0.046	+/-0.0403	0.0769	+/-0.0408	0.258	pCi/g						
Curium-243/244	U	-0.10	+/-0.0956	0.126	+/-0.0966	0.348	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	0.0235	+/-0.087	0.0589	+/-0.087	0.197	pCi/g		MXA	10/30/06	1058	583312	2
Plutonium-239/240	U	0.0235	+/-0.0869	0.0588	+/-0.087	0.197	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	0.00	+/-6.56	5.51	+/-6.56	11.6	pCi/g		MXA	11/02/06	0856	583313	3
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.635	+/-0.167	0.0577	+/-0.167	0.129	pCi/g		MJH1	10/31/06	0928	583389	5
Americium-241	U	0.0432	+/-0.109	0.0836	+/-0.109	0.174	pCi/g						
Bismuth-212		0.532	+/-0.302	0.151	+/-0.302	0.329	pCi/g						
Bismuth-214		0.566	+/-0.113	0.0405	+/-0.113	0.0866	pCi/g						
Cesium-134	UI	0.00	+/-0.0454	0.0264	+/-0.0454	0.0566	pCi/g						
Cesium-137		0.402	+/-0.057	0.0194	+/-0.057	0.042	pCi/g						
Cobalt-60	U	0.00339	+/-0.0231	0.0198	+/-0.0231	0.0448	pCi/g						
Europium-152	U	0.00635	+/-0.0624	0.0514	+/-0.0624	0.109	pCi/g						
Europium-154	U	-0.00961	+/-0.0889	0.0634	+/-0.0889	0.141	pCi/g						
Europium-155	U	0.0463	+/-0.0667	0.0601	+/-0.0667	0.125	pCi/g						
Lead-212		0.655	+/-0.0666	0.0278	+/-0.0666	0.0584	pCi/g						
Lead-214		0.611	+/-0.108	0.038	+/-0.108	0.0804	pCi/g						
Manganese-54	UI	0.00	+/-0.0682	0.0185	+/-0.0682	0.0405	pCi/g						
Niobium-94	U	-0.0145	+/-0.0248	0.0196	+/-0.0248	0.0421	pCi/g						
Potassium-40		10.0	+/-1.01	0.181	+/-1.01	0.414	pCi/g						
Radium-226		0.566	+/-0.113	0.0405	+/-0.113	0.0866	pCi/g						
Silver-108m	U	-0.0205	+/-0.0201	0.0159	+/-0.0201	0.0342	pCi/g						
Thallium-208		0.223	+/-0.0488	0.0181	+/-0.0488	0.0392	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.0342	+/-0.00877	0.00599	+/-0.0088	0.0126	pCi/g		KSD1	11/01/06	2100	583243	6
<b>Rad Liquid Scintillation Analysis</b>													



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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

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

Report Date: November 2, 2006

Client Sample ID: 9504-0-010C  
Sample ID: 174936005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	-0.632	+/-6.79	5.72	+/-6.79	11.9	pCi/g		DFA1	11/01/06	0800	583234	8
<i>Liquid Scint C14, Solid All, FSS</i>													
Carbon-14	U	0.0868	+/-0.115	0.0942	+/-0.115	0.193	pCi/g		AXD2	10/27/06	2245	583236	9
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	2.22	+/-18.6	12.4	+/-18.6	26.3	pCi/g		MXPI	11/01/06	1842	583239	10
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	-4.66	+/-6.33	5.51	+/-6.33	11.5	pCi/g		MXPI	11/01/06	1619	583241	11
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	U	0.475	+/-0.296	0.236	+/-0.296	0.486	pCi/g		KXR1	10/31/06	0310	583233	12

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	WXL1	10/26/06	1444	583196

### 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	DOE EML HASL-300, Pu-11-RC Modified
5	EML HASL 300, 4.5.2.3
6	EPA 905.0 Modified
7	EPA 905.0 Modified
8	EPA 906.0 Modified
9	EPA EERF C-01 Modified
10	DOE RESL Fe-1, Modified
11	DOE RESL Ni-1, Modified
12	DOE EML HASL-300, Tc-02-RC Modified
13	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	85	(15%-125%)
Plutonium-242	Alphaspec Pu, Solid-ALL FSS	95	(15%-125%)

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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: November 2, 2006

Client Sample ID: 9504-0-010C  
Sample ID: 174936005

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time Batch	Mtc
Plutonium-241		Liquid Scint Pu241, Solid-ALL FS			102		(25%-125%)					
Strontium-90		GFPC, Sr90, solid-ALL FSS			84		(25%-125%)					
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			84		(25%-125%)					
Iron-55		Liquid Scint Fe55, Solid-ALL FS			82		(15%-125%)					
Nickel-63		Liquid Scint Ni63, Solid-ALL FS			93		(25%-125%)					
Carrier/Tracer Recovery		Liquid Scint Ni63, Solid-ALL FS			93		(25%-125%)					
Technetium-99		Liquid Scint Tc99, Solid-ALL FS			78		(15%-125%)					
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			78		(15%-125%)					

### Notes:

The Qualifiers in this report are defined as follows :

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

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## Certificate of Analysis

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

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

Report Date: November 2, 2006

Client Sample ID: 9504-0-013C  
Sample ID: 174936006  
Matrix: TS  
Collect Date: 10-OCT-06  
Receive Date: 26-OCT-06  
Collector: Client  
Moisture: 48.5%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Alpha Spec Analysis</b>													
<i>Alphaspec Am241, Cm, Solid ALL FSS</i>													
Americium-241	U	-0.0277	+/-0.0621	0.0513	+/-0.0621	0.180	pCi/g	MXA	10/30/06	1058	583311	1	1
Curium-242	U	0.0786	+/-0.108	0.0396	+/-0.108	0.164	pCi/g						
Curium-243/244	U	-0.109	+/-0.0823	0.115	+/-0.0836	0.307	pCi/g						
<i>Alphaspec Pu, Solid-ALL FSS</i>													
Plutonium-238	U	-0.00331	+/-0.105	0.0892	+/-0.105	0.253	pCi/g	MXA	10/30/06	1058	583312	2	2
Plutonium-239/240	U	0.120	+/-0.149	0.082	+/-0.150	0.239	pCi/g						
<i>Liquid Scint Pu241, Solid-ALL FSS</i>													
Plutonium-241	U	-0.741	+/-6.61	5.58	+/-6.61	11.7	pCi/g	MXA	11/02/06	0913	583313	3	3
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.506	+/-0.193	0.0706	+/-0.193	0.151	pCi/g	MJH1	10/31/06	0929	583389	5	5
Americium-241	U	-0.00807	+/-0.113	0.0819	+/-0.113	0.169	pCi/g						
Bismuth-212		0.519	+/-0.319	0.151	+/-0.319	0.322	pCi/g						
Bismuth-214		0.717	+/-0.116	0.0427	+/-0.116	0.0896	pCi/g						
Cesium-134	U	0.00314	+/-0.029	0.0232	+/-0.029	0.0493	pCi/g						
Cesium-137		0.684	+/-0.076	0.0208	+/-0.076	0.044	pCi/g						
Cobalt-60	U	-0.000581	+/-0.0261	0.0212	+/-0.0261	0.0462	pCi/g						
Europium-152	U	-0.0282	+/-0.0661	0.0534	+/-0.0661	0.111	pCi/g						
Europium-154	U	0.0313	+/-0.076	0.0646	+/-0.076	0.140	pCi/g						
Europium-155	U	0.0397	+/-0.0774	0.0508	+/-0.0774	0.105	pCi/g						
Lead-212		0.596	+/-0.0656	0.0366	+/-0.0656	0.0753	pCi/g						
Lead-214		0.676	+/-0.107	0.0383	+/-0.107	0.0799	pCi/g						
Manganese-54	U	0.0203	+/-0.0251	0.0222	+/-0.0251	0.047	pCi/g						
Niobium-94	U	-0.00724	+/-0.0293	0.0199	+/-0.0293	0.042	pCi/g						
Potassium-40		5.95	+/-0.804	0.187	+/-0.804	0.412	pCi/g						
Radium-226		0.717	+/-0.116	0.0427	+/-0.116	0.0896	pCi/g						
Silver-108m	U	0.00332	+/-0.0405	0.0182	+/-0.0405	0.0383	pCi/g						
Thallium-208		0.180	+/-0.0485	0.0208	+/-0.0485	0.0439	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>													
<i>GFPC, Sr90, solid-ALL FSS</i>													
Strontium-90		0.178	+/-0.0136	0.00626	+/-0.0145	0.0131	pCi/g	KSD1	11/01/06	2100	583243	6	6
<b>Rad Liquid Scintillation Analysis</b>													

# GENERAL ENGINEERING LABORATORIES, LLC

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

## Certificate of Analysis

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

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

Report Date: November 2, 2006

Client Sample ID: 9504-0-013C  
Sample ID: 174936006

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
<b>Rad Liquid Scintillation Analysis</b>													
<i>LSC, Tritium Dist, Solid-HTD2, ALL FSS</i>													
Tritium	U	-1.43	+/-6.02	5.17	+/-6.02	11.2	pCi/g		DFA1	10/28/06	0738	583234	8
<i>Liquid Scint C14, Solid ALL FSS</i>													
Carbon-14	U	0.190	+/-0.121	0.0969	+/-0.121	0.199	pCi/g		AXD2	10/27/06	2332	583236	9
<i>Liquid Scint Fe55, Solid-ALL FSS</i>													
Iron-55	U	4.58	+/-18.8	12.4	+/-18.8	26.2	pCi/g		MXP1	11/01/06	1858	583239	1
<i>Liquid Scint Ni63, Solid-ALL FSS</i>													
Nickel-63	U	-3.51	+/-7.96	6.83	+/-7.96	14.3	pCi/g		MXP1	11/01/06	1641	583241	1
<i>Liquid Scint Tc99, Solid-ALL FSS</i>													
Technetium-99	X	1.20	+/-0.319	0.237	+/-0.320	0.489	pCi/g		KXR1	10/31/06	0327	583233	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	WXL1	10/26/06	1445	583196

### 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	DOE EML HASL-300, Pu-11-RC Modified
5	EML HASL 300, 4.5.2.3
6	EPA 905.0 Modified
7	EPA 905.0 Modified
8	EPA 906.0 Modified
9	EPA EERF C-01 Modified
10	DOE RESL Fe-1, Modified
11	DOE RESL Ni-1, Modified
12	DOE EML HASL-300, Tc-02-RC Modified
13	DOE EML HASL-300, Tc-02-RC Modified
14	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243	Alphaspec Am241, Cm, Solid ALL	98	(15%-125%)

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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: November 2, 2006

Client Sample ID: 9504-0-013C  
Sample ID: 174936006

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mt
Plutonium-242		Alphaspec Pu, Solid-ALL FSS			99		(15%-125%)						
Plutonium-241		Liquid Scint Pu241, Solid-ALL FS			101		(25%-125%)						
Strontium-90		GFPC, Sr90, solid-ALL FSS			95		(25%-125%)						
Carrier/Tracer Recovery		GFPC, Sr90, solid-ALL FSS			95		(25%-125%)						
Iron-55		Liquid Scint Fe55, Solid-ALL FS			88		(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			79		(15%-125%)						
Carrier/Tracer Recovery		Liquid Scint Tc99, Solid-ALL FS			79		(15%-125%)						

### Notes:

The Qualifiers in this report are defined as follows :

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

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## Certificate of Analysis

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

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

Report Date: November 2, 2006

Client Sample ID: 9520-0005-019F  
Sample ID: 174936007  
Matrix: TS  
Collect Date: 23-OCT-06  
Receive Date: 26-OCT-06  
Collector: Client  
Moisture: 8.59%

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

Parameter	Qualifier	Result	Uncertainty	LC	TPU	MDA	Units	DF	Analyst	Date	Time	Batch	Mtr
<b>Rad Gamma Spec Analysis</b>													
<i>Gamma, Solid-FSS GAM &amp; ALL FSS 226 Ingrowth</i>													
<i>Waived</i>													
Actinium-228		0.956	+/-0.140	0.0577	+/-0.140	0.125	pCi/g		MJH1	10/31/06	0930	583389	1
Americium-241	U	-0.0344	+/-0.0932	0.0853	+/-0.0932	0.176	pCi/g						
Bismuth-212		0.469	+/-0.323	0.150	+/-0.323	0.320	pCi/g						
Bismuth-214		0.547	+/-0.0937	0.0337	+/-0.0937	0.0717	pCi/g						
Cesium-134	UI	0.00	+/-0.0287	0.0245	+/-0.0287	0.0518	pCi/g						
Cesium-137		0.128	+/-0.041	0.0183	+/-0.041	0.0391	pCi/g						
Cobalt-60	U	0.0143	+/-0.0233	0.0193	+/-0.0233	0.0426	pCi/g						
Europium-152	U	-0.0255	+/-0.0562	0.0466	+/-0.0562	0.0979	pCi/g						
Europium-154	U	-0.0349	+/-0.0722	0.0565	+/-0.0722	0.123	pCi/g						
Europium-155	U	0.0307	+/-0.0645	0.0594	+/-0.0645	0.122	pCi/g						
Lead-212		0.754	+/-0.0632	0.029	+/-0.0632	0.0601	pCi/g						
Lead-214		0.623	+/-0.085	0.0372	+/-0.085	0.0779	pCi/g						
Manganese-54	U	0.0044	+/-0.0225	0.0196	+/-0.0225	0.0417	pCi/g						
Niobium-94	U	0.00264	+/-0.0188	0.0164	+/-0.0188	0.0351	pCi/g						
Potassium-40		11.2	+/-0.971	0.126	+/-0.971	0.290	pCi/g						
Radium-226		0.547	+/-0.0937	0.0337	+/-0.0937	0.0717	pCi/g						
Silver-108m	U	0.0078	+/-0.0199	0.0172	+/-0.0199	0.0363	pCi/g						
Thallium-208		0.265	+/-0.044	0.0179	+/-0.044	0.038	pCi/g						

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	WXL1	10/26/06	1445	583196

### The following Analytical Methods were performed

Method	Description
1	EML HASL 300, 4.5.2.3

### Notes:

The Qualifiers in this report are defined as follows :

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

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

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

Report Date: November 2, 2006

Client Sample ID: 9520-0005-019F  
Sample ID: 174936007

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

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

# QUALITY CONTROL DATA



# GENERAL ENGINEERING LABORATORIES, LLC

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

## QC Summary

Report Date: November 2, 2006

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Client : Connecticut Yankee Atomic Power  
362 Injun Hollow Rd

Contact: East Hampton, Connecticut  
Mr. Jack McCarthy

Workorder: 174936

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	583311										
QC1201217370	174936001	DUP									
Americium-241	U	0.00136	U	-0.0141	pCi/g	243	(0% - 100%)	AXA1	10/30/06	10:58	
	Uncert:	+/-0.138		+/-0.0635							
	TPU:	+/-0.138		+/-0.0635							
Curium-242	U	0.0391	U	-0.0144	pCi/g	433	(0% - 100%)				
	Uncert:	+/-0.110		+/-0.020							
	TPU:	+/-0.110		+/-0.020							
Curium-243/244	U	-0.0385	U	0.0308	pCi/g	1800	(0% - 100%)				
	Uncert:	+/-0.139		+/-0.104							
	TPU:	+/-0.140		+/-0.104							
QC1201216891	LCS										
Americium-241	2.69			2.51	pCi/g		93	(75%-125%)		10/30/06	10:58
	Uncert:			+/-0.236							
	TPU:			+/-0.371							
Curium-242			U	-0.00394	pCi/g						
	Uncert:			+/-0.0135							
	TPU:			+/-0.0135							
Curium-243/244	3.24			2.95	pCi/g		91	(75%-125%)			
	Uncert:			+/-0.256							
	TPU:			+/-0.422							
QC1201216888	MB										
Americium-241			U	-0.0169	pCi/g					10/30/06	10:58
	Uncert:			+/-0.0283							
	TPU:			+/-0.0284							
Curium-242			U	0.0056	pCi/g						
	Uncert:			+/-0.030							
	TPU:			+/-0.030							
Curium-243/244			U	0.0146	pCi/g						
	Uncert:			+/-0.0557							
	TPU:			+/-0.0557							
QC1201216890	174936001	MS									
Americium-241	13.7	U	0.00136		13.4	pCi/g	98	(75%-125%)		10/30/06	10:58
	Uncert:		+/-0.138		+/-1.31						
	TPU:		+/-0.138		+/-2.08						
Curium-242		U	0.0391	U	0.0528	pCi/g					
	Uncert:		+/-0.110		+/-0.0991						
	TPU:		+/-0.110		+/-0.0993						
Curium-243/244	16.5	U	-0.0385		16.0	pCi/g	97	(75%-125%)			
	Uncert:		+/-0.139		+/-1.43						
	TPU:		+/-0.140		+/-2.41						
Batch	583312										
QC1201216893	174936001	DUP									
Plutonium-238	U	-0.104	U	-0.0623	pCi/g	50	(0% - 100%)	AXA1	10/30/06	10:58	

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## QC Summary

Workorder: 174936

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	583312										
Plutonium-239/240	U		U	Uncert:							
				TPU:							
				-0.137	-0.0217	pCi/g	145	(0% - 100%)			
				Uncert:							
				TPU:							
QC1201216895	LCS										
Plutonium-238			U	0.00501	pCi/g			(75%-125%)		10/30/06	10:58
				Uncert:							
				TPU:							
Plutonium-239/240	2.49			2.37	pCi/g		95	(75%-125%)			
				Uncert:							
				TPU:							
QC1201216892	MB										
Plutonium-238			U	-0.0011	pCi/g					10/30/06	10:58
				Uncert:							
				TPU:							
Plutonium-239/240			U	0.000219	pCi/g						
				Uncert:							
				TPU:							
QC1201216894	174936001	MS									
Plutonium-238	U		U	-0.104	pCi/g			(75%-125%)		10/30/06	10:58
				Uncert:							
				TPU:							
Plutonium-239/240	12.6	U		-0.137	pCi/g		102	(75%-125%)			
				Uncert:							
				TPU:							
Batch	583313										
QC1201216897	174936001	DUP									
Plutonium-241	U		U	-5.01	pCi/g	0		(0% - 100%)	MXA1	11/02/06	09:45
				Uncert:							
				TPU:							
QC1201216899	LCS										
Plutonium-241	35.9			27.9	pCi/g		78	(75%-125%)		11/02/06	10:18
				Uncert:							
				TPU:							
QC1201216896	MB										
Plutonium-241			U	4.08	pCi/g					11/02/06	09:29
				Uncert:							
				TPU:							
QC1201216898	174936001	MS									
Plutonium-241	141	U		-5.01	pCi/g		88	(75%-125%)		11/02/06	10:01
				Uncert:							
				TPU:							
Rad Gamma Spec											
Batch	583389										
QC1201217096	174911001	DUP									
Actinium-228				0.325	pCi/g	2		(0% - 100%)	MJH1	10/31/06	10:33
				Uncert:							

# GENERAL ENGINEERING LABORATORIES, LLC

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## QC Summary

Workorder: 174936

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	583389										
Americium-241	U	TPU:	+/-0.119	U	pCi/g	6		(0% - 100%)			
			0.018								
		Uncert:	+/-0.0921								
Bismuth-212	UI	TPU:	+/-0.0921	UI	pCi/g	36		(0% - 100%)			
			0.274								
		Uncert:	+/-0.157								
Bismuth-214	U	TPU:	+/-0.157	U	pCi/g	6		(0% - 100%)			
			0.423								
		Uncert:	+/-0.070								
Cesium-134	UI	TPU:	+/-0.070	UI	pCi/g	16		(0% - 100%)			
			0.00								
		Uncert:	+/-0.033								
Cesium-137	U	TPU:	+/-0.033	U	pCi/g	208		(0% - 100%)			
			0.00								
		Uncert:	+/-0.0281								
Cobalt-60	U	TPU:	+/-0.0281	U	pCi/g	827		(0% - 100%)			
			-0.013								
		Uncert:	+/-0.0169								
Europium-152	U	TPU:	+/-0.0169	U	pCi/g	36		(0% - 100%)			
			0.024								
		Uncert:	+/-0.041								
Europium-154	U	TPU:	+/-0.041	U	pCi/g	216		(0% - 100%)			
			0.00185								
		Uncert:	+/-0.0495								
Europium-155	U	TPU:	+/-0.0495	U	pCi/g	612		(0% - 100%)			
			0.0651								
		Uncert:	+/-0.0432								
Lead-212	U	TPU:	+/-0.0432	U	pCi/g	19		(0% - 100%)			
			0.285								
		Uncert:	+/-0.0477								
Lead-214	U	TPU:	+/-0.0477	U	pCi/g	4		(0% - 100%)			
			0.402								
		Uncert:	+/-0.0695								
Manganese-54	U	TPU:	+/-0.0695	U	pCi/g	191		(0% - 100%)			
			0.000309								
		Uncert:	+/-0.0169								
Niobium-94	U	TPU:	+/-0.0169	U	pCi/g	21		(0% - 100%)			
			0.00718								
		Uncert:	+/-0.0145								
Potassium-40	U	TPU:	+/-0.0145	U	pCi/g	8		(0% - 20%)			
			7.04								
		Uncert:	+/-0.674								
Radium-226	U	TPU:	+/-0.674	U	pCi/g	6		(0% - 100%)			
			0.423								
		Uncert:	+/-0.070								
Silver-108m	U	TPU:	+/-0.070	U	pCi/g	1360		(0% - 100%)			
			0.00582								
		Uncert:	+/-0.0134								

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## QC Summary

Workorder: 174936

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	583389										
Thallium-208	TPU:	+/-0.0134		+/-0.0162							
		0.107		0.108	pCi/g	2		(0% - 100%)			
	Uncert:	+/-0.031		+/-0.036							
	TPU:	+/-0.031		+/-0.036							
QC1201217097 LCS											
Actinium-228			U	0.166	pCi/g					10/31/06	10:56
	Uncert:			+/-0.579							
	TPU:			+/-0.579							
Americium-241	23.4			25.2	pCi/g		108	(75%-125%)			
	Uncert:			+/-1.33							
	TPU:			+/-1.33							
Bismuth-212			U	0.169	pCi/g						
	Uncert:			+/-0.989							
	TPU:			+/-0.989							
Bismuth-214			U	0.208	pCi/g						
	Uncert:			+/-0.235							
	TPU:			+/-0.235							
Cesium-134			U	0.0196	pCi/g						
	Uncert:			+/-0.149							
	TPU:			+/-0.149							
Cesium-137	9.54			10.1	pCi/g		106	(75%-125%)			
	Uncert:			+/-0.474							
	TPU:			+/-0.474							
Cobalt-60	14.2			14.4	pCi/g		101	(75%-125%)			
	Uncert:			+/-0.640							
	TPU:			+/-0.640							
Europium-152			U	-0.0221	pCi/g						
	Uncert:			+/-0.301							
	TPU:			+/-0.301							
Europium-154			U	-0.0891	pCi/g						
	Uncert:			+/-0.300							
	TPU:			+/-0.300							
Europium-155			U	0.246	pCi/g						
	Uncert:			+/-0.296							
	TPU:			+/-0.296							
Lead-212			U	0.0927	pCi/g						
	Uncert:			+/-0.160							
	TPU:			+/-0.160							
Lead-214			U	-0.0668	pCi/g						
	Uncert:			+/-0.216							
	TPU:			+/-0.216							
Manganese-54			U	0.0637	pCi/g						
	Uncert:			+/-0.141							
	TPU:			+/-0.141							
Niobium-94			U	-0.0941	pCi/g						
	Uncert:			+/-0.131							
	TPU:			+/-0.131							
Potassium-40			U	0.512	pCi/g						

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## QC Summary

Workorder: 174936

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec Batch 583389										
Radium-226	Uncert: +/-1.01 TPU: +/-1.01	U	0.208	pCi/g			(75%-125%)			
Silver-108m	Uncert: +/-0.235 TPU: +/-0.235	U	0.00145	pCi/g						
Thallium-208	Uncert: +/-0.116 TPU: +/-0.116	U	0.109	pCi/g						
QC1201217095 MB Actinium-228	Uncert: +/-0.124 TPU: +/-0.124	U	0.017	pCi/g					10/31/06	09:31
Americium-241	Uncert: +/-0.0424 TPU: +/-0.0424	U	0.00734	pCi/g						
Bismuth-212	Uncert: +/-0.0106 TPU: +/-0.0106	U	0.000324	pCi/g						
Bismuth-214	Uncert: +/-0.0883 TPU: +/-0.0883	U	0.0233	pCi/g						
Cesium-134	Uncert: +/-0.033 TPU: +/-0.033	UI	0.00	pCi/g						
Cesium-137	Uncert: +/-0.0377 TPU: +/-0.0377	U	-0.00239	pCi/g						
Cobalt-60	Uncert: +/-0.0102 TPU: +/-0.0102	U	0.0115	pCi/g						
Europium-152	Uncert: +/-0.0112 TPU: +/-0.0112	U	-0.00208	pCi/g						
Europium-154	Uncert: +/-0.0274 TPU: +/-0.0274	U	0.0176	pCi/g						
Europium-155	Uncert: +/-0.030 TPU: +/-0.030	U	0.00314	pCi/g						
Lead-212	Uncert: +/-0.0186 TPU: +/-0.0186	U	0.0227	pCi/g						
Lead-214	Uncert: +/-0.0166 TPU: +/-0.0166	UI	0.00	pCi/g						
	Uncert: +/-0.0396 TPU: +/-0.0396									

# GENERAL ENGINEERING LABORATORIES, LLC

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## QC Summary

Workorder: 174936

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	583389										
Manganese-54			U	-0.00543	pCi/g						
		Uncert:		+/-0.0113							
		TPU:		+/-0.0113							
Niobium-94			U	0.00493	pCi/g						
		Uncert:		+/-0.0109							
		TPU:		+/-0.0109							
Potassium-40			U	0.356	pCi/g						
		Uncert:		+/-0.179							
		TPU:		+/-0.179							
Radium-226			U	0.0233	pCi/g						
		Uncert:		+/-0.033							
		TPU:		+/-0.033							
Silver-108m			U	-0.00346	pCi/g						
		Uncert:		+/-0.00831							
		TPU:		+/-0.00831							
Thallium-208			U	0.0108	pCi/g						
		Uncert:		+/-0.0183							
		TPU:		+/-0.0183							
<b>Rad Gas Flow</b>											
Batch	583243										
QC1201216718	174936001	DUP									
Strontium-90			0.0263	0.0557	pCi/g	72		(0% - 100%) KSD1		11/02/06	09:35
		Uncert:	+/-0.0109	+/-0.019							
		TPU:	+/-0.011	+/-0.019							
QC1201216720	LCS										
Strontium-90			1.64	1.34	pCi/g		82	(75%-125%)		11/02/06	09:35
		Uncert:		+/-0.0863							
		TPU:		+/-0.0946							
QC1201216717	MB										
Strontium-90				0.0333	pCi/g					11/02/06	09:35
		Uncert:		+/-0.0137							
		TPU:		+/-0.0137							
QC1201216719	174936001	MS									
Strontium-90			5.18	0.0263	pCi/g		89	(75%-125%)		11/02/06	09:35
		Uncert:	+/-0.0109	+/-0.304							
		TPU:	+/-0.011	+/-0.330							
<b>Rad Liquid Scintillation</b>											
Batch	583233										
QC1201216690	174936001	DUP									
Technetium-99			U	0.320	pCi/g	0		(0% - 100%) KXR1		10/31/06	04:00
		Uncert:		+/-0.221							
		TPU:		+/-0.221							
QC1201216692	LCS										
Technetium-99			13.0	12.9	pCi/g		99	(75%-125%)		10/31/06	04:32
		Uncert:		+/-0.501							
		TPU:		+/-0.601							
QC1201216689	MB										
Technetium-99			U	0.047	pCi/g					10/31/06	03:43

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## QC Summary

Workorder: 174936

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation											
Batch	583233										
		Uncert:		+/-0.238							
		TPU:		+/-0.238							
QC1201216691	174936001	MS									
Technetium-99		13.1	U	0.320	12.5	pCi/g	96	(75%-125%)		10/31/06	04:16
		Uncert:		+/-0.221	+/-0.543						
		TPU:		+/-0.221	+/-0.631						
Batch	583234										
QC1201216694	174936001	DUP									
Tritium			U	3.72	-6.31	pCi/g	0	(0% - 100%)	DFA1	10/28/06	08:10
		Uncert:		+/-5.94	+/-6.86						
		TPU:		+/-5.94	+/-6.86						
QC1201216696	LCS										
Tritium		51.5			45.3	pCi/g	88	(75%-125%)		10/28/06	08:42
		Uncert:			+/-8.97						
		TPU:			+/-9.01						
QC1201216693	MB										
Tritium			U		-0.82	pCi/g				10/28/06	07:54
		Uncert:			+/-5.74						
		TPU:			+/-5.74						
QC1201216695	174936001	MS									
Tritium		60.3	U	3.72	48.1	pCi/g	80	(75%-125%)		10/28/06	08:26
		Uncert:		+/-5.94	+/-10.1						
		TPU:		+/-5.94	+/-10.1						
Batch	583236										
QC1201216702	174936001	DUP									
Carbon-14			U	0.179	0.0712	pCi/g	0	(0% - 100%)	AXD2	10/28/06	01:06
		Uncert:		+/-0.112	+/-0.108						
		TPU:		+/-0.112	+/-0.108						
QC1201216704	LCS										
Carbon-14		6.78			6.63	pCi/g	98	(75%-125%)		10/28/06	02:40
		Uncert:			+/-0.229						
		TPU:			+/-0.251						
QC1201216701	MB										
Carbon-14			U		0.0836	pCi/g				10/28/06	00:19
		Uncert:			+/-0.109						
		TPU:			+/-0.109						
QC1201216703	174936001	MS									
Carbon-14		7.17	U	0.179	6.59	pCi/g	92	(75%-125%)		10/28/06	01:53
		Uncert:		+/-0.112	+/-0.237						
		TPU:		+/-0.112	+/-0.258						
Batch	583239										
QC1201216710	174936001	DUP									
Iron-55			U	14.2	-3.35	pCi/g	0	(0% - 100%)	MXP1	11/01/06	19:15
		Uncert:		+/-19.7	+/-19.4						
		TPU:		+/-19.7	+/-19.4						
QC1201216712	LCS										
Iron-55		57.2			54.5	pCi/g	95	(75%-125%)		11/01/06	19:47
		Uncert:			+/-3.71						
		TPU:			+/-5.38						

# GENERAL ENGINEERING LABORATORIES, LLC

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## QC Summary

Workorder: 174936

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Liquid Scintillation</b>											
Batch	583239										
QC1201216709	MB										
Iron-55			U	-0.337	pCi/g					11/01/06	16:51
				Uncert:							
				TPU:							
QC1201216711	174936001	MS									
Iron-55		611	U	14.2	593	pCi/g	97	(75%-125%)		11/01/06	19:31
				Uncert:	+/-19.7						
				TPU:	+/-19.7						
Batch	583241										
QC1201216714	174936001	DUP									
Nickel-63			U	-0.799	U	0.571	pCi/g	0	(0% - 100%)	MXPI	11/01/06 17:24
				Uncert:	+/-7.83						
				TPU:	+/-7.83						
QC1201216716	LCS										
Nickel-63		179		160	pCi/g		90	(75%-125%)		11/01/06	18:07
				Uncert:	+/-6.78						
				TPU:	+/-8.10						
QC1201216713	MB										
Nickel-63			U	1.12	pCi/g					11/01/06	17:02
				Uncert:	+/-2.38						
				TPU:	+/-2.38						
QC1201216715	174936001	MS									
Nickel-63		535	U	-0.799	448	pCi/g	84	(75%-125%)		11/01/06	17:45
				Uncert:	+/-7.83						
				TPU:	+/-7.83						

### Notes:

The Qualifiers in this report are defined as follows:

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



# GENERAL ENGINEERING LABORATORIES, LLC

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

## QC Summary

Workorder: 174936

Page 9 of 9

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

^

h Preparation or preservation holding time was exceeded

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

\*\* Indicates analyte is a surrogate compound.

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

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

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

# **General Narrative**

**General Narrative  
for  
Connecticut Yankee Atomic Power Co.  
Work Order: 177540  
SDG: MSR#06-1549**

**December 14, 2006**

**Laboratory Identification:**

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

**Summary**

**Sample receipt**

The samples arrived at General Engineering Laboratories, LLC, Charleston, South Carolina on November 10, 2006 and November 30, 2006 for analysis. Shipping container temperatures were checked, documented, and within specifications. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

**Sample Identification** The laboratory received the following samples:

<b><u>Laboratory Identification</u></b>	<b><u>Sample Description</u></b>
177540001	9522-0001-001F
177540002	9522-0001-002F
177540003	9522-0001-003F
177540004	9522-0001-004F
177540005	9522-0001-005F
177540006	9522-0001-006F
177540007	9522-0001-009F
177540008	9522-0001-010F
177540009	9522-0001-011F
177540010	9522-0001-012F
177540011	9522-0001-013F
177540012	9522-0001-015F
177540013	9522-0001-016F
177540014	9522-0001-021-I
177540015	9522-0001-024-I
177540016	9522-0002-002F
177540017	9522-0002-003F
177540018	9522-0002-005F
177540019	9522-0002-007F
177540020	9522-0002-008F
177540021	9522-0002-010F
177540022	9522-0002-011F
177540023	9522-0002-012F
177540024	9522-0002-013F
177540025	9522-0002-014F

177540026	9522-0002-016F
177540027	9522-0003-001F
177540028	9522-0003-002F
177540029	9522-0003-003F
177540030	9522-0003-004F
177540031	9522-0003-005F
177540032	9522-0003-007F
177540033	9522-0003-008F
177540034	9522-0003-009F
177540035	9522-0003-010F
177540036	9522-0003-011F
177540037	9522-0003-012F
177540038	9522-0003-013F
177540039	9522-0003-014F
177540040	9522-0003-015F
177540041	9522-0004-001F
177540042	9522-0004-002F
177540043	9522-0004-003F
177540045	9522-0004-005F
177540046	9522-0004-006F
177540047	9522-0004-008F
177540048	9522-0004-009F
177540049	9522-0004-010F
177540050	9522-0004-011F
177540051	9522-0004-012F
177540052	9522-0004-013F
177540053	9522-0004-014F
177540054	9522-0004-015F
177540055	9522-0004-016F

#### **Items of Note**

The above samples were relogged at the request of Arthur Hammond on 12/11/06. See attached emails.

#### **Case Narrative**

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

#### **Analytical Request**

Fifty-four soil samples were analyzed for Strontium-90.

#### **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 14 December 2006**

<b>State</b>	<b>Certification</b>
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

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

## Chain of Custody Form

No. 2006-00666

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested						Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL						Comments:	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC, 29407 843 556 8171, Attn. Cheryl Jones													Relog for Sr-90 per 12/11/06 request - 177540	
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input checked="" type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.													176896%	
Sample Designation	Date	Time										Comment, Preservation	Lab Sample ID	
✓ 9522-0001-012F	11/09/06	0808	TS	G	BP	X								
✓ 9522-0001-015F	11/09/06	0815	TS	G	BP	X								
✓ 9522-0001-002F	11/09/06	0954	TS	G	BP	X								
✓ 9522-0001-001F	11/09/06	0955	TS	G	BP	X								
✓ 9522-0001-003F	11/09/06	0958	TS	G	BP	X								
✓ 9522-0001-010F	11/09/06	1052	TS	G	BP	X								
✓ 9522-0001-014F	11/09/06	1054	TS	G	BP		X							
✓ 9522-0001-009F	11/09/06	1057	TS	G	BP	X								
✓ 9522-0001-009FS	11/09/06	1057	TS	G	BP	X								
✓ 9522-0001-008F	11/09/06	1311	TS	G	BP		X							
✓ 9522-0001-011F	11/09/06	1312	TS	G	BP	X								
NOTES: PO #: 002332    MSR #: 06-1281 <sup>11/30/06</sup> 1505    SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA						Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other			Internal Container Temp.: ____ Deg. C Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>					
1) Relinquished By		Date/Time		2) Received By		Date/Time		Bill of Lading #						
				Chau		11/30/06 10:10								
3) Relinquished By		Date/Time		4) Received By		Date/Time								

Connecticut Yankee Atomic Power Company						Chain of Custody Form					No. 2006-00667		
362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556													
Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested					Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL						Comments:
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC, 29407 843 556 8171 Attn. Cheryl Jones													
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input checked="" type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.													
Sample Designation	Date	Time									Comment, Preservation	Lab Sample ID	
9522-0001-013F	11/09/06	1337	TS	G	BP	X							
9522-0001-005F	11/09/06	1358	TS	G	BP	X							
9522-0001-006F	11/09/06	1400	TS	G	BP	X							
9522-0001-004F	11/09/06	1405	TS	G	BP	X							
NOTES: PO #: 002332 MSR #: 06- <sup>MSR # 1585</sup> 1381 SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA.												Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other	Internal Container Temp.: _____ Deg. C Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>
1) Relinquished By			Date/Time			2) Received By			Date/Time			Bill of Lading #	
3) Relinquished By			Date/Time			4) Received By			Date/Time				



[illegible]

[illegible]

## Chain of Custody Form

No. 2006-00684

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

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested						Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL							Comments:
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road. Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input checked="" type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.														
Sample Designation	Date	Time	Comment, Preservation	Lab Sample ID										
9522-0001-024-1	11/21/06	1254												
NOTES: PO #: 002332    MSR #: 06-1381    SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA											Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand		Internal Container Temp.: ____ Deg. C	
1) Relinquished By			Date/Time		2) Received By			Date/Time		<input type="checkbox"/> Other		Custody Sealed? Y <input type="checkbox"/> N <input type="checkbox"/>		
3) Relinquished By			Date/Time		4) Received By			Date/Time		Bill of Lading #		Custody Seal Intact? Y <input type="checkbox"/> N <input type="checkbox"/>		

Figure 1. Sample Check-in List

Date/Time Received: 11-30-06 10:10

SDG#: MSR#06-1505, MSR#06-1506

Work Order Number: 176896, 176890

Shipping Container ID: See Continuation Sheet Chain of Custody #: See Continuation Sheet

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 See Continuation Sheet
5. Vermiculite/packing materials is: Wet ☐ Dry ☒
6. Number of samples in shipping container: \_\_\_\_\_
7. Sample holding times exceeded? Yes ☐ No ☒

8. Samples have:

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

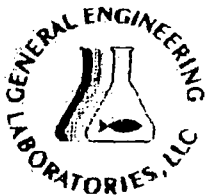
9. Samples are:

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

10. Were any anomalies identified in sample receipt? Yes ☒ No ☐
11. Description of anomalies (include sample numbers): not signed

Sample Custodian/Laboratory: CG Sense Date: 11-30-06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Yankee Atomic</u>	SDG/ARCOC/Work Order: <u>176890, 176896</u>
Date Received: <u>11/30/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>[Signature]</u>	<u>[Signature]</u>

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)																		
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)																		
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		<input checked="" type="checkbox"/>		Circle Coolant # ice bags blue ice dry ice none other (describe) <u>See Below</u>																		
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>																					
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)																		
5 Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample ID's, containers affected and observed pH:																		
6 VOA vials free of headspace (defined as < 6mm bubble)?		<input checked="" type="checkbox"/>		Sample ID's and containers affected:																		
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			<input checked="" type="checkbox"/>																			
8 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:																		
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:																		
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:																		
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:																		
12 COC form is properly signed in relinquished/received sections?		<input checked="" type="checkbox"/>		<u>not signed</u>																		
14 Air Bill, Tracking #'s, & Additional Comments	<table border="0"> <tr> <td>7928</td> <td>9092</td> <td>2742-20<sup>0</sup></td> <td>7980</td> <td>5266</td> <td>8785-16<sup>0</sup></td> </tr> <tr> <td>7928</td> <td>9092</td> <td>2710-17<sup>0</sup></td> <td>7988</td> <td>9092</td> <td>2731-17<sup>0</sup></td> </tr> <tr> <td>7980</td> <td>5266</td> <td>8796-18</td> <td>7928</td> <td>9092</td> <td>2753-17<sup>0</sup></td> </tr> </table>				7928	9092	2742-20 <sup>0</sup>	7980	5266	8785-16 <sup>0</sup>	7928	9092	2710-17 <sup>0</sup>	7988	9092	2731-17 <sup>0</sup>	7980	5266	8796-18	7928	9092	2753-17 <sup>0</sup>
7928	9092	2742-20 <sup>0</sup>	7980	5266	8785-16 <sup>0</sup>																	
7928	9092	2710-17 <sup>0</sup>	7988	9092	2731-17 <sup>0</sup>																	
7980	5266	8796-18	7928	9092	2753-17 <sup>0</sup>																	
Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.																		
A Radiological Classification?	<input checked="" type="checkbox"/>			Maximum Counts Observed*: <u>150 CPM</u>																		
B PCB Regulated?	<input checked="" type="checkbox"/>																					
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	<input checked="" type="checkbox"/>			Hazard Class Shipped: UN#:																		
D Regulated as a Foreign Soil?																						
PM (or PMA) review of Hazard classification: <input checked="" type="checkbox"/> Initials: <u>[Signature]</u> Date: <u>11/30/06</u>																						



## SAMPLE RECEIPT & REVIEW FORM CONTINUATION FORM

Fed Ex	7928	9092	2742	-20°
	↓		2710	20°
			2731	17°
	↓	↓	2753	17°
	7980	5266	8796	-18°
			8785	-16°

Chain of Custody #'s -

2006-	00687
-	00667
-	00671
-	00677
-	00684
-	00689
-	00691
-	00686
-	00685
-	00666
↓	00688

<b>Connecticut Yankee Atomic Power Company</b> 362 Injun Hollow Road, East Hampton, CT 06424 860-267-2556						<b>Chain of Custody Form</b>						No. 2006-00647			
Project Name: Haddam Neck Decommissioning						Analyses Requested					Lab Use Only				
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL					Comments:  <div style="text-align: right; font-family: cursive;">             175906% - FSS ALL              175908% - FSSGAM              175908% - FSSGAM           </div>			
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC, 29407 843 556 8171, Attn. Cheryl Jones															
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input checked="" type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.															
Sample Designation	Date	Time	Media Code	Sample Type Code	Container Size & Type Code						Comment, Preservation	Lab Sample ID			
9522-0002-001F	10/30/06	0813	TS	G	BP		X								
9522-0002-002F	10/30/06	0757	TS	G	BP	X									
9522-0002-003F	10/30/06	0817	TS	G	BP	X									
9522-0002-004F	10/30/06	0741	TS	G	BP		X								
9522-0002-005F	10/30/06	1013	TS	G	BP	X									
9522-0002-006F	10/30/06	1020	TS	G	BP	X									
9522-0002-007F	10/30/06	0945	TS	G	BP	X									
9522-0002-007FS	10/30/06	0945	TS	G	BP	X									
9522-0002-008F	10/30/06	1031	TS	G	BP	X									
9522-0002-009F	10/30/06	1035	TS	G	BP	X									
9522-0002-010F	10/30/06	1051	TS	G	BP	X									
NOTES: PO #: 002332    MSR #: 06-1381 <sup>1460</sup> <sub>1460</sub> SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA															
1) Relinquished By <i>[Signature]</i> Date/Time: 11/8/06 1500						2) Received By <i>[Signature]</i> Date/Time: 11-10-06 9:15						Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other		Internal Container Temp.: 17° Deg. C Custody Sealed? Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Custody Seal Intact? Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
3) Relinquished By    Date/Time:						4) Received By    Date/Time:						Bill of Lading # 7985 3689 <sup>8321</sup> <sub>11</sub>			

No. 2006-00648

☐ Other **8327**  
**7985 3589 1694**  
Bill of Lading #



Figure 1. Sample Check-in List

Date/Time Received: 11-10-06 9:15

SDG#: MSR #06-1460

Work Order Number: 175906, 175908

Shipping Container ID: 7985 3869 8327 Chain of Custody # 2006-00647, 2006-00654, 2006-00648

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 17°
5. Vermiculite/packing materials is: Wet ☐ Dry ☐ NA ☒
6. Number of samples in shipping container: 18
7. Sample holding times exceeded? Yes ☐ No ☒

8. Samples have:

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

9. Samples are:

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

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

Sample Custodian/Laboratory: Tim Sals Date: 11-10-06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

80 cpm



# SAMPLE RECEIPT & REVIEW FORM

PM: use only

Client: <u>Connecticut Yankee</u>	SDG/ARCOC/Work Order: <u>175906, 175908</u>
Date Received: <u>11-10-06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>TS</u>	<u>[Signature]</u>

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

Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt #
A Radiological Classification?	<input checked="" type="checkbox"/>			*If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
B PCB Regulated?	<input checked="" type="checkbox"/>			Maximum Counts Observed*: <u>80 cpm</u>
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	<input checked="" type="checkbox"/>			Comments:
				Hazard Class Shipped: UN#:
PM (or PMA) review of Hazard classification: <input checked="" type="checkbox"/>				Initials <u>CEJ</u> Date: <u>11/13/06</u>

## Connecticut Yankee Atomic Power Company

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

## Chain of Custody Form

No. 2006-00655

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size & Type Code	Analyses Requested						Lab Use Only		
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL						Comments:  <i>Off 11/14/06</i> 175874 - <del>FSSALL</del> FSSGAM 175901 - <del>FSSGAM</del> FSSALL	
Analytical Lab (Name, City, State) General Engineering Laboratories 2040 Savage Road, Charleston SC. 29407 843 556 8171. Attn. Cheryl Jones														
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input checked="" type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.														
Sample Designation	Date	Time									Comment, Preservation	Lab Sample ID		
9522-003-001F	11/3/06	1255	TS	G	BP	X								
9522-003-002F	11/3/06	1256	TS	G	BP	X								
9522-003-003F	11/3/06	1300	TS	G	BP	X								
9522-003-005F	11/3/06	1302	TS	G	BP	X								
9522-003-004F	11/3/06	1312	TS	G	BP	X								
9522-003-006F	11/3/06	1314	TS	G	BP		X							
9522-003-007F	11/3/06	1316	TS	G	BP	X								
9522-003-008F	11/3/06	1318	TS	G	BP	X								
9522-003-008FS	11/3/06	1318	TS	G	BP	X								
NOTES: PO #: 002332    MSR #: 06-1381-2011R <i>1459</i> SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA														
1) Relinquished By <i>[Signature]</i>			Date/Time <i>11/9/06 0800</i>			2) Received By <i>Tan S...</i>			Date/Time <i>11-10-06 9:15</i>			Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> Other		
3) Relinquished By			Date/Time			4) Received By			Date/Time			Internal Container Temp.: <i>18°</i> Deg. C Custody Sealed? <i>Y</i> <input checked="" type="checkbox"/> <input type="checkbox"/> N Custody Seal Intact? <i>Y</i> <input checked="" type="checkbox"/> <input type="checkbox"/> N Bill of Lading # <i>7995 3691 5025</i>		

## Connecticut Yankee Atomic Power Company

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

## Chain of Custody Form

No. 2006-00656

Project Name: Haddam Neck Decommissioning			Media Code	Sample Type Code	Container Size- & Type Code	Analyses Requested						Lab Use Only			
Contact Name & Phone: Jack McCarthy 860-267-3924						FSSGAM	FSSALL						Comments:  175874 - FSSGAM 175901 - FSSALL		
Analytical Lab (Name, City, State). General Engineering Laboratories 2040 Savage Road, Charleston SC, 29407 843 556 8171. Attn. Cheryl Jones															
Priority: <input type="checkbox"/> 30 D. <input type="checkbox"/> 14 D. <input checked="" type="checkbox"/> 7 D. <input type="checkbox"/> 3 D.															
Sample Designation	Date	Time										Comment, Preservation	Lab Sample ID		
9522-0003-009F	11/6/06	0734	TS	G	BP	X									
9522-0003-011F	11/6/06	0737	TS	G	BP	X									
9522-0003-010F	11/6/06	0739	TS	G	BP	X									
9522-0003-012F	11/6/06	0741	TS	G	BP	X									
9522-0003-014F	11/6/06	0800	TS	G	BP	X									
9522-0003-015F	11/6/06	0803	TS	G	BP	X									
9522-0003-013F	11/6/06	0805	TS	G	BP	X									
9522-0003-016F	11/6/06	1028	TS	G	BP	X	X								
NOTES: PO #: 002332    MSR #: 06-1381-1459    SSWP# NA <input checked="" type="checkbox"/> LTP QA <input type="checkbox"/> Radwaste QA <input type="checkbox"/> Non QA												Samples Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand  <input type="checkbox"/> Other		Internal Container Temp.: 18° 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 11/9/06 0800			2) Received By <i>Tan</i>			Date/Time 11-10-06 9:15			79853891 5025 Bill of Lading #			
3) Relinquished By			Date/Time			4) Received By			Date/Time						

Connecticut Yankee  
Statement of Work for Analytical Lab Services

CY-ISC-SOW-001

Figure 1. Sample Check-in List

Date/Time Received: 11-10-06 9:15  
SDG#: MSR #06-1459  
Work Order Number: 175874, 175901  
Shipping Container ID: 7985 3891 5005 Chain of Custody #: 2006-00655, 2006-00656

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 18°
5. Vermiculite/packing materials is: Wet ☐ Dry ☐ NAD
6. Number of samples in shipping container: 17
7. Sample holding times exceeded? Yes ☐ No ☒

8. Samples have:

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

9. Samples are:

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

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

Sample Custodian/Laboratory: Tan S. Shih Date: 11-10-06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_

70 CPM



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Connecticut Yankee</u>	SDG/ARCOC/Work Order: <u>175874, 175901</u>
Date Received: <u>11-10-06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>TS</u>	<u>[Signature]</u>

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?				Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.				Circle Coolant # ice bags blue ice dry ice none other (describe)
3 Chain of custody documents included with shipment?				
4 Sample containers intact and sealed?				Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?				Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?				Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)				
8 Samples received within holding time?				Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?				Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?				Sample ID's affected:
11 Number of containers received match number indicated on COC?				Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?				
14 Air Bill, Tracking #'s, & Additional Comments				<u>COC# - 2006-0055, 00656</u>

Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt #
A Radiological Classification?	<input checked="" type="checkbox"/>			*If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
B PCB Regulated?	<input checked="" type="checkbox"/>			Maximum Counts Observed*: <u>70CPM</u>
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	<input checked="" type="checkbox"/>			Comments:
				Hazard Class Shipped:
				UN#:

PM (or PMA) review of Hazard classification: ☒ Initials CAJ Date: 11/14/06

## 22

22

## 22

22

22

## No. 2006-00686

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

[illegible]



Figure 1. Sample Check-in List

Date/Time Received: 11-30-06 10:10

SDG#: MSR#06-1505, MSR#06-1506

Work Order Number: 176896, 176890

Shipping Container ID: See Continuation Sheet Chain of Custody # See Continuation Sheet

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 See Continuation Sheet
5. Vermiculite/packing materials is: Wet ☐ Dry ☒
6. Number of samples in shipping container: \_\_\_\_\_
7. Sample holding times exceeded? Yes ☐ No ☒

8. Samples have:	
<input checked="" type="checkbox"/> tape	_____ hazard labels
_____ custody seals	_____ appropriate sample labels

9. Samples are:	
<input checked="" type="checkbox"/> in good condition	_____ leaking
_____ broken	_____ have air bubbles

10. Were any anomalies identified in sample receipt? Yes ☒ No ☐
11. Description of anomalies (include sample numbers): not signed

Sample Custodian/Laboratory: CG Gause Date: 11-30-06

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ By \_\_\_\_\_



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Yankee Atomic</u>	SDG/ARCOC/Work Order: <u>176890, 176896</u>
Date Received: <u>11/30/06</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>[Signature]</u>	<u>[Signature]</u>

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)																		
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)																		
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		<input checked="" type="checkbox"/>		Circle Coolant # ice bags blue ice dry ice none other (describe) <u>See Below</u>																		
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>																					
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)																		
5 Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample ID's, containers affected and observed pH:																		
6 VOA vials free of headspace (defined as < 6mm bubble)?		<input checked="" type="checkbox"/>		Sample ID's and containers affected:																		
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			<input checked="" type="checkbox"/>																			
8 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:																		
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:																		
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:																		
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:																		
12 COC form is properly signed in relinquished/received sections?			<input checked="" type="checkbox"/>	<u>not signed</u>																		
14 Air Bill, Tracking #'s, & Additional Comments	<table border="0"> <tr> <td>7928</td> <td>9092</td> <td>2742-28</td> <td>7928</td> <td>5266</td> <td>8785-16</td> </tr> <tr> <td>7928</td> <td>9092</td> <td>2710-17</td> <td>7928</td> <td>9092</td> <td>2731-17</td> </tr> <tr> <td>7980</td> <td>5266</td> <td>8796-18</td> <td>7928</td> <td>9092</td> <td>2753-17</td> </tr> </table>				7928	9092	2742-28	7928	5266	8785-16	7928	9092	2710-17	7928	9092	2731-17	7980	5266	8796-18	7928	9092	2753-17
7928	9092	2742-28	7928	5266	8785-16																	
7928	9092	2710-17	7928	9092	2731-17																	
7980	5266	8796-18	7928	9092	2753-17																	

Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt #
A Radiological Classification?	<input checked="" type="checkbox"/>			*If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
B PCB Regulated?	<input checked="" type="checkbox"/>			Maximum Counts Observed*: <u>150 CPM</u>
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	<input checked="" type="checkbox"/>			Hazard Class Shipped: UN#:
D Regulated as a Foreign Soil?				

PM (or PMA) review of Hazard classification: [Signature] Initials [Signature] Date: 11/30/06



## SAMPLE RECEIPT & REVIEW FORM CONTINUATION FORM

Fed Ex 7928 9092 2742 -20°

2710 20°

2731 17°

2753 17°

7980 5266 8796 -18°

8785 -16°

Chain of Custody #'s -

2006-00687

- 00667

- 00671

- 00677

- 00684

- 00689

- 00691

- 00686

- 00685

- 00666

↓ - 00688

**Subject:** Re: Additional analyses (Sr-90)

**From:** Cheryl Jones <cj@gel.com>

**Date:** Tue, 12 Dec 2006 07:55:22 -0500

**To:** "Arthur L. Hammond" <Hammond@CYAPCO.com>

**CC:** David Wojtkowiak <wojtkowiak@cyapco.com>, Jack McCarthy <mccarthy@cyapco.com>

Arthur,

The sample listed for recount below (9522-0004-004F) is already being processed as a reanalysis for Sr-90 based on Jack's email last Friday (new workorder 177405). It will be completed this Friday and I will reference the new MSR# below. The remaining samples have been relogged per your request yesterday and will be processed on a 7d TAT. Please let me know if you have any questions.

Thanks,  
Cheryl

Arthur L. Hammond wrote:

Cheryl,

I put a 7 day TAT on the MSR however, if you have the results sooner we will take them.

Thank you,

Arthur

-----Original Message-----

From: Cheryl Jones [mailto:cj@gel.com] Sent: Monday, December 11, 2006 4:33 PM

To: Arthur L. Hammond

Cc: Clyde Newson; John McCarthy; Jeffrey D. Wagner; David Wojtkowiak;

Amanda Rasco

Subject: Re: Additional analyses (Sr-90)

Arthur,

Thank you for the list of IDs, we will have the samples pulled from their storage location and rescheduled by tomorrow morning. When do you

need this data returned to you (TAT)?

Cheryl

Arthur L. Hammond wrote:

Cheryl,

We are requesting additional analyses on the attached list of samples.

One sample, 9522-0004-004F, is a recount. The GEL sample ID for that sample is 176890005. We are requesting Sr-90 analyses counts on these samples. The MSR NO 06-1549.

Thank you,

Arthur

-----  
Cheryl A. Jones  
Project Manager/PM Team Leader  
General Engineering 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)

## MEMORANDUM

To: Art Hammond

From: Dave Wojtkowiak

In support of the FSS of Survey Area 9522, I would like to request additional analysis for Sr-90 in the following soil samples:

9522-0001-001F	9522-0003-003F
9522-0001-002F	9522-0003-004F
9522-0001-003F	9522-0003-005F
9522-0001-004F	9522-0003-007F
9522-0001-005F	9522-0003-008F
9522-0001-006F	9522-0003-009F
9522-0001-009F	9522-0003-010F
9522-0001-010F	9522-0003-011F
9522-0001-011F	9522-0003-012F
9522-0001-012F	9522-0003-013F
9522-0001-013F	9522-0003-014F
9522-0001-015F	9522-0003-015F
9522-0001-016F	<u>9522-0004-001F</u>
9522-0001-021-I	9522-0004-002F
<u>9522-0001-024-I</u>	9522-0004-003F
9522-0002-002F	9522-0004-004F (recount)
9522-0002-003F	9522-0004-005F
9522-0002-005F	9522-0004-006F
9522-0002-007F	9522-0004-008F
9522-0002-008F	9522-0004-009F
9522-0002-010F	9522-0004-010F
9522-0002-011F	9522-0004-011F
9522-0002-012F	9522-0004-012F
9522-0002-013F	9522-0004-013F
9522-0002-014F	9522-0004-014F
<u>9522-0002-016F</u>	9522-0004-015F
9522-0003-001F	9522-0004-016F
9522-0003-002F	

**Subject:** RE: Additional analyses (Sr-90)

**From:** "Arthur L. Hammond" <Hammond@CYAPCO.com>

**Date:** Wed, 13 Dec 2006 16:00:57 -0500

**To:** "Cheryl Jones" <cj@gel.com>

**CC:** "Clyde Newson" <Newson@CYAPCO.com>, "David Wojtkowiak" <wojtkowiak@cyapco.com>, "John McCarthy" <McCarthy@CYAPCO.com>, "Jeffrey D. Wagner" <Wagner@CYAPCO.com>

Cheryl,

As per our conversation sample, 9522-0004-004F, will not need a third recount. It is my understanding that Jack McCarthy had previously requested a recount on this sample on 12/8/06.

Thank you,

Arthur

-----Original Message-----

From: Cheryl Jones [mailto:cj@gel.com]

Sent: Monday, December 11, 2006 4:33 PM

To: Arthur L. Hammond

Cc: Clyde Newson; John McCarthy; Jeffrey D. Wagner; David Wojtkowiak; Amanda Rasco

Subject: Re: Additional analyses (Sr-90)

Arthur,

Thank you for the list of IDs, we will have the samples pulled from their storage location and rescheduled by tomorrow morning. When do you

need this data returned to you (TAT)?

Cheryl

Arthur L. Hammond wrote:

Cheryl,

We are requesting additional analyses on the attached list of samples.

One sample, 9522-0004-004F, is a recount. The GEL sample ID for that sample is 176890005. We are requesting Sr-90 analyses counts on these samples. The MSR NO 06-1549.

Thank you,

Arthur

-----  
Cheryl A. Jones  
Project Manager/PM Team Leader  
General Engineering 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)

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# **Data Review Qualifier Definitions**

## Data Review Qualifier Definitions

Qualifier	Explanation
-----------	-------------

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

# **RADIOLOGICAL ANALYSIS**

**Radiochemistry Case Narrative  
Connecticut Yankee Atomic Power Co. (YANK)  
Work Order 177540**

**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:	595174
Prep Batch Number:	595088
Dry Soil Prep GL-RAD-A-021 Batch Number:	595084

<b>Sample ID</b>	<b>Client ID</b>
177540021	9522-0002-010F
177540022	9522-0002-011F
177540023	9522-0002-012F
177540024	9522-0002-013F
177540025	9522-0002-014F
177540026	9522-0002-016F
177540027	9522-0003-001F
177540028	9522-0003-002F
177540029	9522-0003-003F
177540030	9522-0003-004F
177540031	9522-0003-005F
177540032	9522-0003-007F
177540033	9522-0003-008F
177540034	9522-0003-009F
177540035	9522-0003-010F
177540036	9522-0003-011F
177540037	9522-0003-012F
177540038	9522-0003-013F
177540039	9522-0003-014F
177540040	9522-0003-015F
1201245012	Method Blank (MB)
1201245013	177540021(9522-0002-010F) Sample Duplicate (DUP)
1201245014	177540021(9522-0002-010F) Matrix Spike (MS)
1201245015	Laboratory Control Sample (LCS)

**SOP Reference**

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

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

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

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

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

**Designated QC**

The following sample was used for QC: 177540021 (9522-0002-010F).

**QC Information**

All of the QC samples met the required acceptance limits.

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

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

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

**Chemical Recoveries**

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

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

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

**Additional Comments**

Additional comments were not required for this sample set.

### **Qualifier information**

Manual qualifiers were not required.

### **Method/Analysis Information**

<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:	595177
Prep Batch Number:	595089
Dry Soil Prep GL-RAD-A-021 Batch Number:	595086

<b>Sample ID</b>	<b>Client ID</b>
177540041	9522-0004-001F
177540042	9522-0004-002F
177540043	9522-0004-003F
177540045	9522-0004-005F
177540046	9522-0004-006F
177540047	9522-0004-008F
177540048	9522-0004-009F
177540049	9522-0004-010F
177540050	9522-0004-011F
177540051	9522-0004-012F
177540052	9522-0004-013F
177540053	9522-0004-014F
177540054	9522-0004-015F
177540055	9522-0004-016F
1201245020	Method Blank (MB)
1201245021	177540041(9522-0004-001F) Sample Duplicate (DUP)
1201245022	177540041(9522-0004-001F) Matrix Spike (MS)
1201245023	Laboratory Control Sample (LCS)

### **SOP Reference**

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

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

All initial and continuing calibration requirements have been met.

**Standards Information**

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

**Sample Geometry**

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

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

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

**Designated QC**

The following sample was used for QC: 177540041 (9522-0004-001F).

**QC Information**

All of the QC samples met the required acceptance limits.

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

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

**Preparation Information**

All preparation criteria have been met for these analyses.

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

Samples 1201245020 (MB), 177540041 (9522-0004-001F), 177540042 (9522-0004-002F), 177540043 (9522-0004-003F), 177540047 (9522-0004-008F), 177540050 (9522-0004-011F), 177540052 (9522-0004-013F) and 177540054 (9522-0004-015F) were recounted due to a suspected blank false positive. Samples 1201245020 (MB) and 1201245021 (9522-0004-001F) were recounted due to high MDAs.

**Chemical Recoveries**

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

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

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

**Additional Comments**

Additional comments were not required for this sample set.

### **Qualifier information**

Manual qualifiers were not required.

### **Method/Analysis Information**

<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:	597316
Prep Batch Number:	595087
Dry Soil Prep GL-RAD-A-021 Batch Number:	595082

<b>Sample ID</b>	<b>Client ID</b>
177540001	9522-0001-001F
177540002	9522-0001-002F
177540003	9522-0001-003F
177540004	9522-0001-004F
177540005	9522-0001-005F
177540006	9522-0001-006F
177540007	9522-0001-009F
177540008	9522-0001-010F
177540009	9522-0001-011F
177540010	9522-0001-012F
177540011	9522-0001-013F
177540012	9522-0001-015F
177540013	9522-0001-016F
177540014	9522-0001-021-I
177540015	9522-0001-024-I
177540016	9522-0002-002F
177540017	9522-0002-003F
177540018	9522-0002-005F
177540019	9522-0002-007F
177540020	9522-0002-008F
1201250079	Method Blank (MB)
1201250080	177540001(9522-0001-001F) Sample Duplicate (DUP)
1201250081	177540001(9522-0001-001F) Matrix Spike (MS)
1201250082	Laboratory Control Sample (LCS)

### **SOP Reference**



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

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met.

##### **Standards Information**

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

##### **Sample Geometry**

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

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

##### **Blank Information**

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

##### **Designated QC**

The following sample was used for QC: 177540001 (9522-0001-001F).

##### **QC Information**

All of the QC samples met the required acceptance limits.

#### **Technical Information:**

##### **Holding Time**

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

##### **Preparation Information**

All preparation criteria have been met for these analyses.

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

Samples 1201250080 (9522-0001-001F), 177540003 (9522-0001-003F), 177540004 (9522-0001-004F), 177540005 (9522-0001-005F), 177540006 (9522-0001-006F), 177540009 (9522-0001-011F), 177540010 (9522-0001-012F) and 177540015 (9522-0001-024-I) were recounted due to a suspected false positive. Samples were repped due to high relative percent difference/relative error ratio.

##### **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 MDA for sample 177540001 (9522-0001-001F) was used to calculate the relative percent difference.

**Qualifier information**

Manual qualifiers were not required.

**Certification Statement**

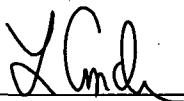
Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation:**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

**The following data validator verified the information presented in this case narrative:**

Reviewer/Date: \_\_\_\_\_

 12/2/2016