

Attachment 5

Final Status Survey Final Report Volume 2, Chapter 6, Revision 1

Data Summary Report for Reuse Stockpiles 8a and 8b

Westinghouse Electric Company LLC, Hematite Decommissioning Project

Docket No. 070-00036



Final Status Survey Report

Hematite Decommissioning Project

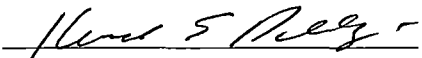
Final Status Survey Final Report Volume 2, Chapter 6


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REVISION LOG

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0 09/08/2016	Revision 0 is the initial issuance of the Final Status Survey Final Report Volume 2, Chapter 6.
1 See Cover Page	FSSFR Volume 2, Chapter 6, Revision 1 supersedes Revision 0. This revision is issued to correct a typographical error that indicated an incorrect Ra-226 background value for the soil sample data.

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LIST OF ACRONYMS AND SYMBOLS

CSM	Conceptual Site Model
DCGL	Derived Concentration Guideline Level
DCGL _w	DCGL ("W" suffix denotes "Wilcoxon")
DP	Hematite Decommissioning Plan
DQA	Data Quality Assessment
FSS	Final Status Survey
FSSFR	Final Status Survey Final Report
g	gram
GWS	Gamma Walkover Survey
HDP	Hematite Decommissioning Project
HP	Health Physics
HRGS	High Resolution Gamma Spectroscopy
kg	kilogram
μCi	microcurie
MDC	Minimum Detectable Concentration
MIL	Modified Investigation Level
NaI	Sodium Iodide
NRC	U.S. Nuclear Regulatory Commission
pCi/g	picocurie(s) per gram
QC	Quality Control
Ra	Radium
RML	Reuse Material Screening Action Level
S3	ISO-Pacific Nuclear Assay Systems S3 Soil Sorting System
SOF	Sum of Fractions
Tc	Technetium
Th	Thorium
Westinghouse	Westinghouse Electric Company LLC
U	Uranium

1.0 INTRODUCTION

The purpose of this document, Final Status Survey Final Report (FSSFR) Volume 2, Chapter 2, *Data Summary Report for Reuse Stockpile 8 and 8b*, is to provide the data summary for Reuse Stockpile 8 and Reuse Stockpile 8b to demonstrate that it met the criteria to be used as backfill material, and to describe the disposition of the stockpile within the respective land survey area in which it was placed.

2.0 REPORT BACKGROUND

As a result of the NRC feedback in regards to submittal of the FSSFR, Westinghouse and the NRC agreed that Westinghouse would develop an outline presenting the format and content of Final Status Survey (FSS) documents required for NRC review. Westinghouse provided the outline to the NRC for discussion during the August 19, 2015, publicly noticed teleconference and the format was agreed upon {ML15238B032}.

FSSFR Volume 2, Chapter 1, Revision 1, *Reuse Soil and Off-site Borrow Material Overview* {ML16152A752} provides the information common to reuse soil stockpiles. This report, FSSFR Volume 2, Chapter 6, builds upon the general information provided in FSSFR Volume 2, Chapter 1, Revision 1.

3.0 STOCKPILE DESCRIPTION

Generation of Reuse Stockpile 8 commenced on June 19, 2014, which occurred after the ISO-Pacific Nuclear Assay Systems S3 Soil Sorting System (S3) soil sorting operations were completed. As discussed in FSSFR Volume 2 Chapter 1, as a corrective action, the re-evaluation of the soils that comprised Reuse Stockpiles 1 through 7 by processing the soil through the S3 Soil Sorting System addressed the issue of identification of discrete items (fuel pellet fragments) in the soil in a technically sound, timely and efficient manner. To meet contractual requirements in regard to utilization of the S3 soil sorter, soil sorting operations were completed for Reuse Stockpiles 1 through 7 and the system was demobilized in March 2014.

HDP Staff, aware that S3 operations were to be limited to re-evaluation of the already established Reuse Stockpiles 1 through 7, implemented an additional corrective action to allow generation of additional potential reuse soil. FSS procedures were revised to modify the survey requirements to ensure adequate identification of discrete items. To ensure the FSS contractor and site personnel understood the expectations for performance as provided in the FSS procedures in regards to processing potential reuse soil at that time, the Radiation Safety Officer issued memorandum HEM-13-MEMO-099 which required an ex-situ Gamma Walkover Survey (GWS) be performed prior to declaring the soil acceptable for onsite reuse, as well as other requirements (see Appendix C).

FSSFR Volume 2, Chapter 1, provides a discussion on the implementation of the use of the Modified Investigation Level (MIL) for demonstration of acceptability of reuse soil. During the time frame in which the NRC and Westinghouse reached a path forward on the use of the MIL to demonstrate acceptability of reuse soil Reuse Stockpile 8 was already in the process of being generated. As with other reuse stockpiles the intent was to generate the stockpile with soils from those locations on site where work was in

progress, as was the case with Reuse Stockpile 8. At this time potential reuse soil was being generated at locations from various areas of the site including the Burial Pit Area, soil removed from underneath the slabs of the former Process Buildings, and the SWTP Trench. All of these sources of potential reuse soil are located east of the Site Pond. Concurrently on the west side of the Site Pond potential reuse soil was being generated from the Site Pond Diversion Ditch work activity within LSA 03-01 (Class 3), and a small portion of LSA 03-02 (Class2). These two distinct soil piles remained segregated from each other due to their locations on opposite side of the Site Pond.

To ensure compliance with the recently implemented MIL evaluation for potential reuse soil the RSO reviewed the preliminary sample data for Reuse Stockpile 8. The preliminary review of the Stockpile 8 data set showed that there were exceedances of the Tc-99 MIL from soils on the east side of the Site Pond which would dictate restricting placement of the soil to the deep stratum of a LSA. As there were no exceedances of the Tc-99 MIL from soils collected on the west side of the Site Pond this soil would be acceptable for placement in any stratum. To maintain optimal flexibility with the placement of reuse soil to best meet the remediation objectives and to logistically ensure compliance with site procedures for the processing of potential reuse soil, Westinghouse made the decision to continue to segregate the soils.

To accommodate the decision to maintain the reuse soil piles segregated, and to maintain contractual agreements with the FSS Contractor, the soil pile on the east side of the Site Pond was designated Reuse Stockpile 8a, and the soil pile on the west side of the Site Pond was designated Reuse Stockpile 8b.

Close out of Reuse Stockpile 8a was completed on May 29, 2015. Reuse Stockpile 8b was the last reuse stockpile generated during site remediation. Reuse Stockpiles 8b was closed in October 2015.

4.0 REUSE SOIL CRITERIA

FSSFR Volume 2, Chapter 1, Section 3.0 provides a detailed discussion of the criteria applicable to all reuse soil at HDP. The section includes discussion specific to Radionuclides of Concern; Derived Concentration Guideline Levels (DCGL); Modified Investigation Level (MIL); Weighted Average Calculation; and Data Presentation.

Table 4-1 presents the two DCGL_w's by Conceptual Site Model (i.e., Uniform or Three-Layer). Table 4-2 presents the Tc-99 MIL's applicable to reuse soils at HDP.

Table 4-1
Adjusted Soil DCGL_w's by CSM^a

Radionuclide	Three Layer Approach DCGL _w Values (pCi/g) ^b			Uniform Stratum (pCi/g)
	Surface Stratum	Root Stratum	Excavation Scenario	
Radium-226+C ^d	5.0	2.1	5.4	1.9
Technetium-99	151.0	30.1	74.0	25.1
Thorium-232+C ^d	4.7	2.0	5.2	2.0
Uranium-234	508.5	235.6	872.4	195.4
Uranium-235+D ^c	102.3	64.1	208.1	51.6
Uranium-238+D ^c	297.6	183.3	551.1	168.8

^a Table adapted from HDP-PR-FSS-701, Final Status Survey Plan Development, Appendix A.

^b The reported DCGL_w's are the activities for the parent radionuclide and were calculated to account for the dose contribution from insignificant radionuclides.

^c +D indicates the DCGL_w includes short-lived (half-life ≤ 6 mo.) decay products.

^d +C indicates the DCGL_w includes all radionuclides in the associated decay chain.

Table 4-2
HDP Tc-99 MIL by CSM

CSM	Tc-99 DCGL _w (pCi/g)	4 aliquot Tc-99 MIL (pCi/g)
Uniform	25.1	6.3
Surface	151.0	37.8
Root	30.1	7.5
Excavation	74.0	18.5

5.0 SURVEY METHODOLOGY

The survey methodology utilized to demonstrate the acceptability of Reuse Stockpile 8a and Reuse Stockpile 8b was Approach 1, as described in FSSFR Volume 2, Chapter 1, Section 4.3, *Survey Methodology for Reuse Stockpiles 8a and 8b*.

In summary, this approach provided for: (1) a 100% GWS of the surface prior to excavation at 3 inches above the surface, including marking for removal sections which exceeded the GWS action level; (2) bulk analysis of the entire volume of soil intended for reuse as backfill by the HRGS; and (3) laboratory analysis of composite soil samples collected at random as the stockpile was accumulated.

In addition to demonstration of compliance with the release criteria by the survey methodology described in DP Chapter 14 as presented above, the reuse soil that comprises Reuse Stockpile 8a and 8b also received an ex-situ GWS as provided in memorandum HEM-13-MEMO-099 (See Appendix C).

As discussed in FSSFR Volume 2, Chapter 1, Section 4.3, for Reuse Stockpile 8a and 8b, the soil was either transferred to the box counter or placed in the required geometry and assayed in place by the ISOCS Gamma Spectroscopy System. The box counter and the ISOCS system achieve a MDC that is less than the Uniform DCGL_w. Both the box

counter and the ISOCS were utilized to process Reuse Stockpile 8a. The box counter was utilized up until such time that it was demobilized from the site. At that time ISOCS was used for the remainder of Stockpile 8a. Reuse Stockpile 8b was generated and processed after the box counter was demobilized. Therefore, only the ISOCS Gamma Spectroscopy System was used to process Reuse Stockpile 8b. Regardless of the use of the box counter or the ISOCS, the volume of soil counted was a truckload of soil.

5.1 Gamma Walk Over Scan MDC

Background levels were less than 10,000 counts per minute (cpm), thus the scan minimal detection concentration (MDC) calculation for total uranium given in HDP-PR-FSS-701, *Final Status Survey Plan Development*, (Section 8), was applied:

$$\text{Scan MDC}_{(\text{total uranium})} = \frac{1}{\left(\left(\frac{f_{U-234}}{7383 \text{ pCi/g}} \right) + \left(\frac{f_{U-235}}{4.9 \text{ pCi/g}} \right) + \left(\frac{f_{U-238}}{62.8 \text{ pCi/g}} \right) \right)} \quad \text{Equation 5-1}$$

Standard scan MDCs for Radium-226 and Thorium-232 using a 2" x 2" NaI detector are found in Table 6.4 of NUREG-1507 and are shown in Table 5-1. Assuming 4% enrichment and a 10,000 cpm background scan MDCs for a 2" x 2" detector are:

Table 5-1
Scan MDCs for 2" x 2" NaI Detector, 10,000 cpm Background, 4% Enrichment

	Total Uranium (4% U-235)	Radium-226	Thorium-232
Scan MDC (pCi/g)	85.9	2.8	1.8

6.0 SURVEY IMPLEMENTATION

Prior to excavation, areas to be excavated were surveyed by GWS in accordance with HDP PR-HP-601. Areas of potential reuse soil as indicated by the GWS as areas of soil less than the Reuse Material Screening Action Level (RML) were identified. Areas that were to be segregated from the potential reuse soil were marked by the use of green paint to indicate that area was not potential reuse soil. Also, any area less than the RML but exhibiting visual indication of debris was also marked with green paint and no longer considered potential reuse soil.

The soil was then removed to the intended cut depth and loaded into a truck to be assessed with a HRGS system that achieves an MDC that is less than the Uniform DCGL. Any truckload that exceeded the Uniform DCGL was rejected, and the truckload was sent to the Waste Holding Area (WHA) for waste processing and disposal.

Soil that indicated less than the Uniform DCGL was dumped and spread out at the material lay down area and a GWS was performed on the surface of the pile. The GWS was conducted to identify locations of elevated count rate that exceed the RML and that required removal and disposition as waste. The gamma scan also served to demonstrate that the radioactivity in the truckload of spread-out soil was uniformly distributed.

Following the scan survey, a composite sample, consisting of four aliquots collected at random, was obtained and submitted for laboratory analysis. The soil was then pushed into a pile and kept separate from the larger stockpile until the results of the laboratory analysis was received and reviewed. If acceptable, as determined from sample results of the laboratory analysis of the composite sample, the soil pile was then consolidated into the appropriate stockpile. If not acceptable the soil pile was diverted to waste disposal.

Once the reuse stockpile was closed out to any additional soil it was shaped into a large stockpile to accommodate the ex-situ discrete item GWS. The survey was performed as discussed in memorandum HEM-13-MEMO-099 (Appendix C).

7.0 SURVEY AND SAMPLING RESULTS

The total data set for Reuse Stockpile 8 includes the subsets of information collected during formation of the two stockpiles (Reuse Stockpile 8a and Reuse Stockpile 8b).

7.1 Stockpile 8a Survey Results

Each truck load of dumped and spread-out soil was visually inspected for debris and gamma scanned for exceedance of the RML. Any debris identified was removed to the waste stream as well as any area of soil that exceeded the RML. Areas of soil removed were resurveyed to verify the area was less than RML.

7.2 Stockpile 8a Data Subset

In addition to performing the GWS, the Reuse Stockpile 8a data set includes 256 composite samples. One composite sample was collected for each individual truckload contribution to the total Stockpile 8a volume. Correspondingly, there are 256 HRGS measurements.

Table 7-1 includes the summary results for all samples obtained from Reuse Stockpile 8a, and the associated SOF when compared to the Uniform DCGL_w. The arithmetic average concentration resulted in a SOF for the Reuse Stockpile 8a of 0.22. The weighted average SOF (considering the contribution of each individual load of soil) was also 0.22, indicating a fairly consistent weight for each container (truckload) of soil which contributed to Reuse Stockpile 8a. There were no exceedances of the SOF for the Uniform DCGL.

Table 7-1
Reuse Stockpile 8a Sample Data and Calculated SOF Values (Non-weighted)

Statistic	Ra-226 DCGL = 1.9 BKG = 1.07 pCi/g	Tc-99 DCGL = 25.1 pCi/g	Th-232 DCGL = 2.0 BKG = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g	U-235 DCGL = 51.6 pCi/g	U-238 DCGL = 168.8 pCi/g	Enrichment %	Sample SOF (Uniform DCGL)
Average	0.121	1.207	0.143	4.883	0.267	1.446	2.8	0.22
Minimum	0.000	0.000	0.000	1.039	0.054	0.585	0.7	0.03
Maximum	0.650	9.560	0.510	21.507	1.180	3.430	7.1	0.62

Notes:

1. Ra-226 and Th-232 background subtracted prior to calculating SOF value. Negative SOF components set to zero in SOF calculation.
2. Average SOF for data set calculated using average radionuclide concentrations.

A review of the sample data indicated that seven (7) of the 256 composite samples exceeded the Tc-99 Uniform MIL of 6.3 pCi/g, and six (6) of the seven (7) samples also exceeded the Root Stratum MIL. All 256 composite samples were less than the MIL for the Surface and Excavation stratum.

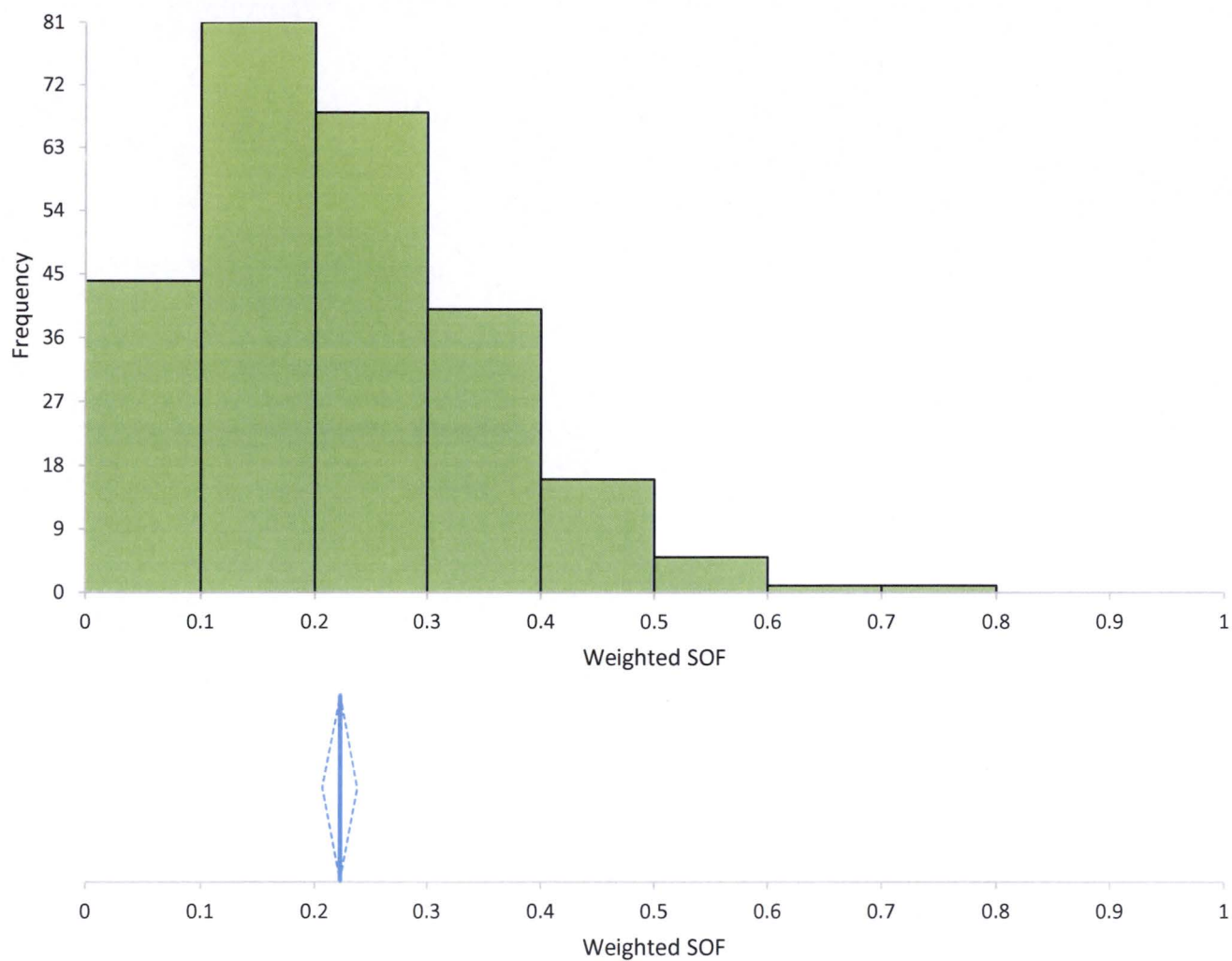
Attachment 1 to this report presents the complete analytical data set used to derive the Reuse Stockpile 8a summary statistics presented in Table 7-1 above. Also, Attachment 3 to this report presents the box counter results in spreadsheet format for both Reuse Stockpile 8a and 8b.

Figure 7-1 presents a graphical statistical summary of Reuse Stockpile 8a. The top graph is a histogram and line plot of the SOF for the data population comprising Reuse Stockpile 8a.

The middle graph presents the mean SOF (0.22 as indicated by the blue vertical line) of the sample population and the 95% confidence interval of the mean SOF represented by the blue diamond which is 0.207 to 0.238. The 96% confidence interval based on the median of the sample results is 0.184 to 0.220.

The bottom two charts present the various statistical metrics of the Reuse Stockpile 8a SOF data set, including the mean, median, standard deviation, minimum, maximum, confidence intervals, etc. Analysis using the ProUCL software indicates the data gamma distributed at a 5% significance level, with a suggested 95% Approximate Gamma UCL of 0.236 – see Appendix A of this report.

Figure 7-1
Statistical Summary for Reuse Stockpile 8a SOF (Uniform DCGL)



N		256						
Weighted SOF	Mean	95% CI		Mean SE	SD	Variance	Skewness	Kurtosis
	0.222	0.207	to 0.238	0.0078	0.125	0.016	0.9	0.79
Weighted SOF	Minimum	1st quartile	Median	96.1% CI		3rd quartile	Maximum	IQR
	0.03	0.125	0.204	0.184	to 0.220	0.295	0.72	0.170

7.3 Stockpile 8b Survey Results

Each truck load of dumped and spread-out soil was visually inspected for debris and gamma scanned for exceedance of the RML. Any debris identified was removed to the waste stream as well as any area of soil that exceeded the RML. Areas of soil removed were resurveyed to verify the area was less than the RML.

7.4 Stockpile 8b Data Subset

In addition to performing the GWS, the Reuse Stockpile 8b data set includes 108 composite samples. One composite sample was collected for each individual truckload contribution to the total Reuse Stockpile 8b volume. Correspondingly, there are 108 HRGS measurements.

Table 7-2 includes the summary results for all samples obtained from Reuse Stockpile 8b and the associated SOF when compared to the Uniform DCGL_w. The arithmetic non-weighted average concentration resulted in a SOF of 0.17 for Reuse Stockpile 8b. The weighted average SOF (considering the contribution of each individual load of soil) was also 0.17, indicating a fairly consistent weight for each truckload of soil which contributed to Reuse Stockpile 8b.

Table 7-2
Reuse Stockpile 8b Sample Data and Calculated SOF Values (Non-weighted)

Statistic	Ra-226 DCGL = 1.9 BKG = 1.07 pCi/g	Tc-99 DCGL = 25.1 pCi/g	Th-232 DCGL = 2.0 BKG = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g	U-235 DCGL = 51.6 pCi/g	U-238 DCGL = 168.8 pCi/g	Enrichment %	Sample SOF (Uniform DCGL)
Average	0.106	0.046	0.178	2.842	0.152	1.337	1.8	0.17
Minimum	0.000	0.000	0.010	0.974	0.046	0.784	0.7	0.04
Maximum	0.390	0.752	0.520	5.029	0.275	2.180	3.5	0.43

Notes:

1. Ra-226 and Th-232 background subtracted prior to calculating SOF value. Negative SOF components set to zero in SOF calculation.
2. Average SOF for data set calculated using average radionuclide concentrations.

A review of the sample data indicated that there were no exceedances of either the Uniform DCGL_w or the Tc-99 MIL.

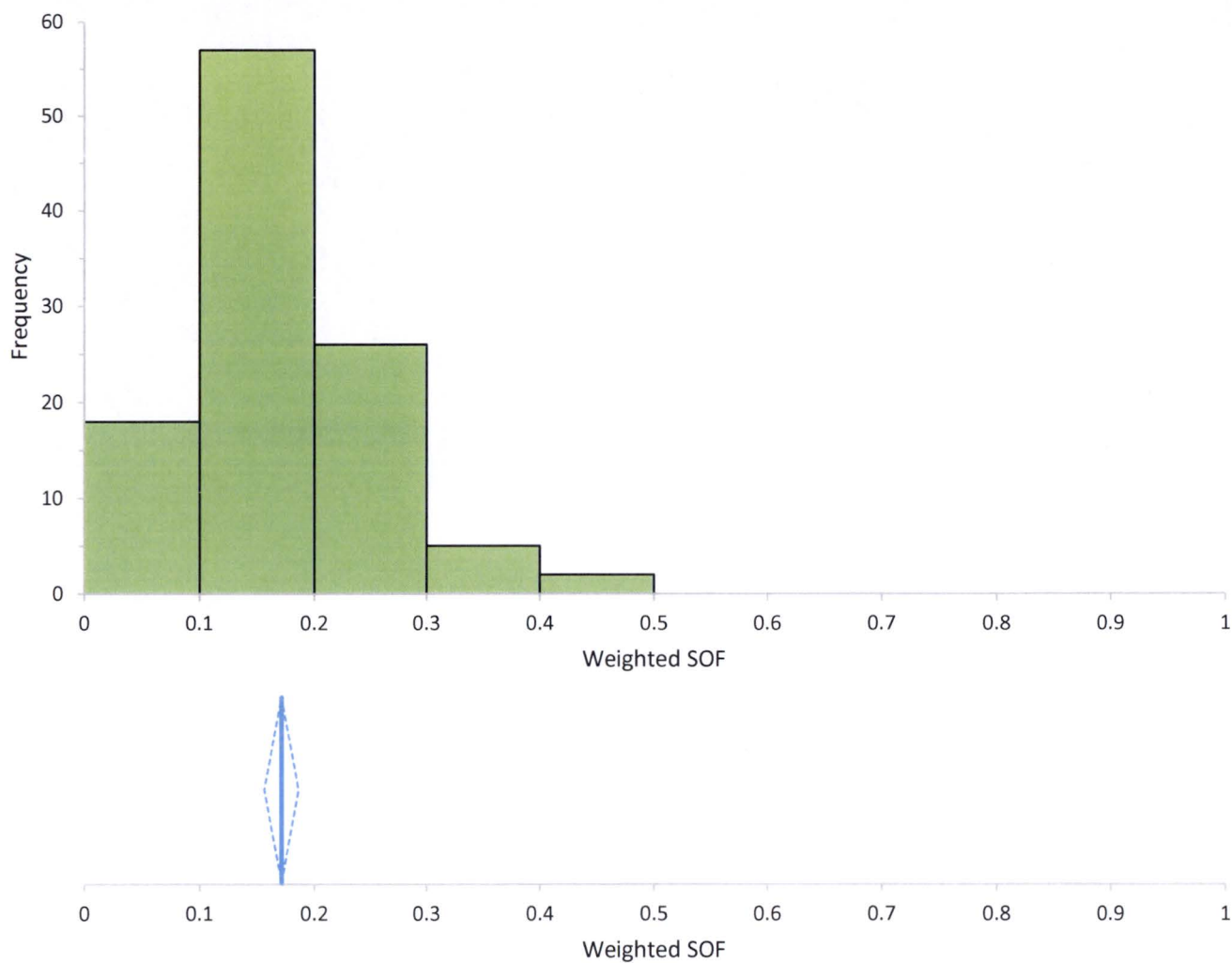
Attachment 2 to this report presents the complete analytical data set used to derive the Reuse Stockpile 8b summary statistics presented in Table 7-2 above. Also, Attachment 3 to this report presents the box counter results in spreadsheet format for both Reuse Stockpile 8a and Reuse Stockpile 8b.

Figure 7-2 below presents a graphical statistical summary of Reuse Stockpile 8b. The top graph is a histogram and line plot of the SOF for the data population comprising Reuse Stockpile 8b.

The middle graph presents the mean SOF (0.17 as indicated by the blue vertical line) of the sample population and the 95% confidence interval of the mean SOF represented by the blue diamond which is 0.156 to 0.186. The 95.7% confidence interval based on the median of the sample results is 0.150 to 0.181.

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<p>The bottom two charts present the various statistical metrics of the Reuse Stockpile 8b SOF data set, including the mean, median, standard deviation, variance, minimum, maximum, confidence intervals, etc. Analysis using the ProUCL software indicated the data appear Approximate Normal, and Gamma Distributed at a 5% significance level, with a suggested 95% Student's-t UCL of 0.184 – see Appendix B of this report.</p>		

Figure 7-2
Statistical Summary for Reuse Stockpile 8b SOF (Uniform DCGL)



N		108						
Weighted SOF	Mean	95% CI		Mean SE	SD	Variance	Skewness	Kurtosis
	0.171	0.156	to 0.186	0.0076	0.079	0.006	0.9	1.65
Weighted SOF	Minimum	1st quartile	Median	95.72% CI		3rd quartile	Maximum	IQR
	0.02	0.117	0.165	0.150	to 0.181	0.213	0.45	0.096

7.5 Ex-Situ GWS for Discrete Items

Once the Reuse Stockpile 8a and 8b were closed out to any additional soil, it was shaped into a large stockpile to accommodate the ex-situ discrete item GWS. The survey was performed as discussed in memorandum HEM-13-MEMO-099 (Appendix C).

Westinghouse memorandum HEM-13-MEMO-099, *Radiological Requirements for the Handling of Re-Use Soils During Development of Stockpile 8* stated:

“The potential re-use soil may then be stockpiled (after characterization) with other potential re-use soil from High and Medium Potential Areas and consolidated for re-survey. HP Technicians will perform a GWS of the exposed surface of the stockpiled soil using Final Status Survey methodology. Operations will then remove a nominal 3-inch layer of soil. This process will be repeated as necessary until all potential re-use soil within the consolidated stockpile has been evaluated.”

A figure was provided in the memorandum identifying areas of High, Medium, and Low potential for discrete high-activity items (fuel pellets). Areas of high potential (Burial Pit Area) were always surveyed in 3 inch layers. Areas of medium potential (soil storage areas) were to be treated as high potential until the top 12 inches of soil was removed, and then would become low potential areas. Low potential areas (all other areas of the site) were to be surveyed in 6 inch layers.

Each layer of soil was visually inspected for debris and subject to a 100% GWS. Any debris identified was removed to the waste stream as well as any area of soil that exceeded the RML. Areas of soil removed were resurveyed to verify the area was less than the RML.

8.0 QUALITY CONTROL

FSSFR Volume 2, Chapter 1, Section 5.0, *Quality Control*, contains a description of Quality Control common to Reuse Stockpile 8a and Reuse Stockpile 8b and all Reuse Stockpiles.

8.1 Stockpile 8a Data Subset

Of the 256 total truckloads comprising Reuse Stockpile 8a, eleven (11) duplicate samples were collected for Quality Control purposes (regular and associated field duplicate comparison). The summary of the Laboratory Quality Control Results of the samples are presented below in Table 8-1.

Table 8-1
Summary of Laboratory Quality Control Results Reuse Stockpile 8a

Nuclide	Number of QC Samples	Number of Warning Limit	No. of times above the Control Limit
Ra-226	11	1	0
Th-232	11	1	0
Tc-99	11	0	0
U-235	11	0	0
U-238	11	0	0

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<p>Table 8-2, Reuse Stockpile 8a Quality Control Sample Data presents the sample and field duplicate sample data.</p>		

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Table 8-2 Reuse Stockpile 8a Quality Control Sample Data																	
Sample	Ra-226 DCGL = 1.9 pCi/g BKG = 1.07 pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g BKG = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample SOF (Uniform DCGL)
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC		Result	Error	MDC	Result	Error	MDC	
0644-RU-150112-01-02	1.24	0.18	0.08	0.20	0.03	0.24	1.20	0.19	0.13	3.42	0.18	0.17	0.22	1.58	0.72	0.90	0.32
0644-RU-150112-01-02-FD	1.19	0.17	0.10	0.16	0.09	0.25	1.04	0.20	0.14	4.10	0.23	0.15	0.27	0.64	0.33	0.97	0.21
0159-RU-141113-01-03	1.08	0.15	0.07	0.86	0.19	0.23	1.12	0.17	0.11	5.41	0.30	0.15	0.18	1.39	0.54	0.82	0.23
0159-RU-141113-01-03-FD	1.32	0.19	0.07	0.17	0.06	0.24	1.19	0.21	0.13	7.59	0.42	0.19	0.26	1.06	0.36	0.99	0.38
9010-RU-140627-06-07	1.13	0.16	0.08	0.08	0.07	0.23	1.04	0.15	0.09	5.47	0.30	0.15	0.17	1.46	0.51	0.76	0.19
9010-RU-140627-06-07-FD	1.19	0.17	0.08	0.16	0.08	0.23	1.04	0.16	0.10	2.46	0.13	0.15	0.25	0.86	0.29	0.81	0.20
9010-RU-140627-01-01	1.05	0.15	0.06	1.06	0.18	0.23	1.09	0.17	0.05	3.32	0.18	0.15	0.25	1.27	0.55	0.85	0.19
9010-RU-140627-01-01-FD	1.07	0.16	0.08	0.73	0.08	0.23	1.05	0.17	0.12	5.66	0.31	0.17	0.20	1.37	0.55	0.83	0.19
9682-RU-140923-06-01	0.79	0.12	0.07	0.81	0.09	0.23	0.62	0.11	0.09	1.75	0.09	0.12	0.20	0.94	0.45	0.70	0.05
9682-RU-140923-06-01-FD	1.10	0.16	0.08	0.67	0.23	0.23	1.00	0.17	0.12	6.86	0.38	0.17	0.21	1.01	0.31	0.77	0.18
9818-RU-141008-05-02	1.05	0.15	0.07	2.15	0.25	0.22	0.99	0.18	0.12	4.22	0.23	0.14	0.18	1.92	0.80	0.92	0.20
9818-RU-141008-05-02-FD	1.18	0.20	0.10	2.33	0.38	0.23	0.91	0.20	0.08	7.8	0.43	0.18	0.25	1.55	0.43	1.10	0.30
0098-RU-141107-06-05	1.09	0.17	0.07	1.31	0.16	0.22	1.03	0.18	0.17	9.39	0.52	0.21	0.27	2.47	0.93	1.05	0.24
0098-RU-141107-06-05-FD	1.11	0.16	0.07	1.16	0.13	0.22	1.03	0.16	0.08	3.09	0.17	0.14	0.24	1.15	0.35	0.85	0.20
0355-RU-141204-01-05	1.34	0.20	0.09	0.14	0.03	0.26	1.28	0.23	0.13	1.69	0.09	0.19	0.32	0.80	0.37	1.10	0.39
0355-RU-141204-01-05-FD	1.27	0.17	0.08	0.05	0.06	0.26	1.35	0.21	0.08	2.48	0.14	0.13	0.26	0.74	0.30	0.84	0.39
0408-RU-141210-01-02	1.41	0.19	0.07	-0.02	0.07	0.25	1.21	0.18	0.11	1.98	0.10	0.16	0.27	1.66	0.59	0.87	0.40
0408-RU-141210-01-02-FD	1.47	0.20	0.20	0.13	0.06	0.22	1.29	0.21	0.13	2.54	0.14	0.17	0.23	1.33	0.57	0.86	0.47
0494-RU-141216-01-01	1.35	0.18	0.07	0.31	0.07	0.25	1.25	0.18	0.11	3.54	0.20	0.14	0.19	0.88	0.29	0.78	0.40
0494-RU-141216-01-01-FD	1.26	0.19	0.08	0.12	0.07	0.23	1.33	0.22	0.10	3.01	0.17	0.19	0.31	0.70	0.35	1.00	0.38
1537-RU-150415-01-05	1.10	0.17	0.08	0.22	0.07	0.21	1.02	0.18	0.15	2.31	0.12	0.17	0.28	1.13	0.36	1.13	0.14
1537-RU-150415-01-05-FD	1.06	0.14	0.08	0.15	0.01	0.22	1.06	0.16	0.12	3.96	0.22	0.17	0.21	1.04	0.29	0.74	0.15

8.1.1 Quality Control Sample Warning and Control Limit Exceedance

The statistical assessment of the Laboratory QC sample results indicated that all field duplicate samples collected showed results less than the calculated Warning and Control Limits, with the exception of one sample. One sample result (9682-RU-140923-06-01) exceeded the Warning Limit for Ra-226, and also for Th-232. In accordance with procedure HDP-PR-FSS-703, when an exceedance occurs an investigation is performed to determine if corrective actions were necessary. The investigation determined that for Ra-226, the calculated statistic (0.31) only slightly exceeded the calculated Warning Limit (0.27), and for Th-232, the calculated statistic (0.38) also only slightly exceeded the calculated Warning Limit (0.28).

Exceedance of the Warning limit is expected to occur occasionally, even when the process is in control. Also, considering the low activity and the errors associated with the sample results, the Ra-226 and Th-232 activity results of the samples was relatively close. A review of the activities of the other radionuclides with activities above MDA for all of the samples for Reuse Stockpile 8a indicated that they were consistent. Also, the calculated statistics for all other samples were less than the Warning Limits, indicating that the identified exceedance for Ra-226 and Th-232 was not an issue with the sample homogeneity. Based upon the investigation of the exceedance and the results of previous and ongoing (2011 through 2015) Quality Assurance audits of the overall performance of the laboratory, no corrective actions were determined to be necessary.

8.1.2 Quality Control Sample Frequency

HDP-PO-FSS-700, *Final Status Survey Program*, Section 14.5 states that “During the FSS within an open land survey unit, the laboratory will be assessed through the analysis of field and laboratory duplicate samples.” and “Both types of quality assurance samples will be analyzed at a frequency of one sample per 20 final status samples collected (5%).” Although reuse stockpiles are not open land survey units, HDP chose to apply the 5% sample frequency to composite sampling of reuse stockpiles.

A review of the data for Reuse Stockpile 8a indicated that eleven (11) Quality Control samples were collected and analyzed, which represents a Quality Control sample frequency that equates to 4.3%. To determine if there could be a negative impact on the assessment of the quality of the laboratory analysis programs as a result of a sample frequency of 4.3% for Reuse Stockpile 8a, a review of all Quality Control sampling for reuse soil was conducted. Table 8-3 provides the data of the Quality Control samples for reuse soil.

Table 8-3
Reuse Soil Quality Control Samples

Stockpile Number	1	2	3	4	5	6	7	8a	8b	9	TOTAL
Number of Quality Control Samples	11	14	15	13	1	2	17	11	2	18	104
Number of Composite Samples	275	288	260	211	14	28	299	256	108	252	1991
Percentage (%)	4.0	4.9	5.8	6.2	7.1	7.1	5.7	4.3	1.9	7.1	5.2

Based upon the review of the number of reuse soil composite samples and Quality Control samples taken for all reuse soil, and in consideration of the results of previous and ongoing (2011 through 2015) Quality Assurance audits of the overall performance of the laboratory the sample frequency for Reuse Stockpile 8a did not have a negative impact on Westinghouse's ability to assess the quality of the laboratory analysis programs.

8.2 Stockpile 8b Data Subset

Of the 108 total truckloads comprising Reuse Stockpile 8b, two (2) duplicate samples were collected for Quality Control purposes (regular and associated field duplicate comparison). The summary of the Laboratory Quality Control Results of the samples are presented below in Table 8-4.

Table 8-4
Summary of Laboratory Quality Control Results Reuse Stockpile 8b

Nuclide	Number of QC Samples	Number of Warning Limit	No. of times above the Control Limit
Ra-226	2	0	0
Th-232	2	0	0
Tc-99	2	0	0
U-235	2	0	0
U-238	2	0	0

Table 8-5, Reuse Stockpile 8b Quality Control Sample Data presents the sample and field duplicate sample data.

Table 8-5
Reuse Stockpile 8b Quality Control Sample Data

Sample	Ra-226 DCGL = 1.9 pCi/g BKG = 1.07 pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g BKG = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample SOF (Uniform DCGL)
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC		Result	Error	MDC	Result	Error	MDC	
9684-RU-140923-07-06	1.11	0.17	0.08	0.00	0.06	0.22	1.07	0.17	0.15	2.08	0.11	0.14	0.25	1.13	0.34	0.92	0.17
9684-RU-140923-07-06-	1.12	0.17	0.08	0.07	0.09	0.22	1.26	0.22	0.11	2.08	0.11	0.16	0.28	1.28	0.61	0.95	0.27
9731-RU-140930-07-01	1.03	0.15	0.07	0.00	0.05	0.23	1.13	0.16	0.11	1.67	0.09	0.14	0.24	1.10	0.53	0.83	0.15
9731-RU-140930-07-01-	1.10	0.16	0.06	0.01	0.04	0.22	1.03	0.18	0.13	2.46	0.13	0.13	0.21	1.23	0.58	0.89	0.14

8.2.1 Quality Control Sample Warning and Control Limit Exceedance

There were no Warning or Control Limit exceedances for Reuse Stockpile 8b Quality Control samples.

8.2.2 Quality Control Sample Frequency

A review of the data for Reuse Stockpile 8b indicated that two (2) Quality Control samples were collected and analyzed, which represents a Quality Control sample frequency that equates to 1.9%.

As provided in section 8.1.2, based upon the review of the number of reuse soil composite samples and Quality Control samples taken for all reuse soil, and in consideration of the results of previous and ongoing (2011 through 2015) Quality Assurance audits of the overall performance of the laboratory the sample frequency for Reuse Stockpile 8b of 1.9% did not have a negative impact on Westinghouse's ability to assess the quality of the laboratory analysis programs.

9.0 DATA QUALITY ASSESSMENT (DQA) – (Applies to Stockpile 8a and Stockpile 8b Data Sets)

The Data Quality Assessment of the survey methodology, sampling and sample analysis results, and Quality Control sampling and analysis results to ascertain the validity of the conclusion for Reuse Stockpile 8 provides the following:

- The field and laboratory instruments utilized were capable of detecting activity at an MDC less than the appropriate investigation level, and were verified to be operable prior to and after use in accordance with HDP-PR-HP-416 (*Operation of the Ludlum 2221 for Final Status Survey*).
- The calibration of all instruments that were used to measure or analyze data was current at the time of use and the calibrations of the instruments were performed using a NIST traceable source. The instruments used were successfully source checked prior to use.
- All samples were collected at random locations and gamma scan surveys were performed in accordance with procedure HDP-PR-FSS-710 (*Final Status Survey and Radiological Sampling of Reuse Soil*).
- All samples sent for analysis at the approved offsite laboratory (TestAmerica) were tracked on a chain of custody form in accordance with HDP-PR-QA-006, *Chain of Custody*.
- Quality Control sample results were verified to meet the acceptance criteria as specified in HDP-PR-FSS-703, *Final Status Survey Quality Control*.
- Reuse Stockpile 8a and Reuse Stockpile 8b sample results were independently reviewed and validated in accordance with HDP-PR-FSS-721 *Final Status Survey Data Validation*, and are provided in Attachments 1, and 2.

- Sections 7.2 and 7.4 provide the results of review of the Reuse Stockpile 8a and Reuse Stockpile 8b sample data. The review indicates that Reuse Stockpile 8a met the reuse soil criteria for placement within the excavation stratum. The review indicates that Reuse Stockpile 8b met the reuse soil criteria for placement within any stratum.
- The calculated average SOF values of Reuse Stockpile 8a when compared to the Uniform Stratum is 0.22, and the $UCL_{(0.95)}$ is 0.236; and Reuse Stockpile 8b when compared to the Uniform Stratum is 0.17, and the $UCL_{(0.95)}$ is 0.184. These outcomes are indicative of fairly homogeneous soils (both derived from Burial Pits area overburden) and a consistent implementation of the survey and sampling methodology required by procedure HDP-PR-FSS-710, *Final Status Surveys and Radiological Sampling of Re-Use Soil*, and the Hematite Decommissioning Plan.
- The review of the statistical evolution of Reuse Stockpile 8a and Reuse Stockpile 8b indicates that the data for the stockpiles are of the correct type, quantity and quality to support a conclusion in regards to the acceptability of both stockpiles.
- In addition to Reuse Stockpile 8a and Reuse Stockpile 8b meeting the reuse soil criteria by demonstration with the approved survey methodology, the soil that comprises Reuse Stockpile 8a and Stockpile 8b was successfully surveyed by GWS in 3inch, or 6 inch layers, as appropriate, providing a similar level of confidence to that of the ISO-Pacific S3 soil sorting system.

10.0 CONCLUSION

An adequate quantity and quality of radiological surveys and samples, as well as the corresponding laboratory analysis has been performed, evaluated and documented to demonstrate that the dose associated with Reuse Stockpile 8a and Stockpile 8b would not cause the dose associated with residual radioactivity in a survey unit in which the soil is placed to exceed the dose criterion for unrestricted release in accordance with 10 CFR 20.1402.

11.0 DOSE CONTRIBUTION TO THE LSA SURVEY UNIT

As communicated to the NRC in Westinghouse letter HEM-15-66 to NRC dated June 30, 2015, as stated in Attachment 1, the Uniform $DCGL_w$ will continue to be used to evaluate the dose impact of using Reuse Stockpile 8a and Stockpile 8b as backfill within a LSA survey unit.

As such, Reuse Stockpile 8a has been calculated to contribute 5.5 mrem/year to the total dose of a survey unit when evaluated against the Uniform release criteria (SOF of 0.17). Therefore, 5.5 mrem/year will be added to the total dose calculation for survey unit LSA 08-06, where Reuse Stockpile 8a was used as backfill.

Reuse Stockpile 8b has been calculated to contribute 4.25 mrem/year to the total dose of a survey unit when evaluated against the Uniform release criteria (SOF of 0.17). Therefore, 4.25 mrem/year will be added to the total dose in LSA 02-03, LSA 03-01,

LSA 03-02, and LSA 05-04 to account for the dose contribution from Reuse Stockpile 8b.

12.0 MANAGEMENT OF REUSE STOCKPILE 8a AND 8b AS BACKFILL

Upon completion of the Ex-situ GWS of Reuse Stockpile 8a and Stockpile 8b, both stockpiles were isolated and controlled in accordance with site procedure. Reuse Stockpile 8a and Stockpile 8b remained isolated until such time that operations commenced to use the stockpile as backfill material.

In accordance with HDP-WP-ENG-802, *Backfill & Site Restoration*, the Radiation Safety Officer performed the required evaluation to determine the placement of the stockpile based upon the following;

- With a weighted mean SOF of 0.22 for Reuse Stockpile 8a the dose associated with the stockpile when placed as backfill in an excavation is 5.5 mrem/year.
- With a weighted mean SOF of 0.17 for Reuse Stockpile 8b the dose associated with the stockpile when placed as backfill in an excavation is 4.25 mrem/year.
- Placement of the Reuse Stockpile 8a is restricted to the Excavation Stratum.
- Placement of the Reuse Stockpile 8b is permitted in any Stratum.
- Reuse Stockpile 8a volume of approximately 4,500 cubic yards.
- Reuse Stockpile 8b volume of approximately 1,620 cubic yards.
- LSA survey units with sufficient capacity within the Excavation Stratum to accept designated reuse soil (applies to Stockpile 8a only).
- Logistics and travel routes for transfer operations.

Based upon the evaluation, Reuse Stockpile 8a was placed in its entirety into LSA 08-06 within the Excavation (Deep) Stratum. Reuse Stockpile 8b was physically separated from the rest of the Hematite site by the Site Pond, and as such could only be placed into LSA units that were accessible from the west side of the Site Pond. Therefore Stockpile 8b was placed into LSA 02-03, LSA 03-01, LSA 03-02, and LSA 05-04.

In accordance with HDP-WP-ENG-802, the placement of both Reuse Stockpile 8a and Stockpile 8b was observed and documented by Health Physics and Project Engineering to ensure proper placement within geographic boundaries of the LSA as well as within the Excavation Stratum (for Stockpile 8a). Physical markers were put in place to provide visual aid to Heavy Equipment Operators, and Civil Survey techniques were used to confirm that the final placement was deeper than 5 feet from the final grade of the area (for Stockpile 8a) and that all of the stockpile remained within the boundary of the intended LSA.

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<div>Attachment 1</div> <div>Reuse Stockpile 8a Sample Data and Calculated SOF Values</div>		

Hematite Decommissioning Project	FSSFR Volume 2, Chapter 6: <i>Data Summary Report for Reuse Stockpiles 8a and 8b</i>																			
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Attachment 1 Reuse Stockpile 8a Sample Data and Calculated SOF Values																				
Sample ID	Ra-226 DCGL = 1.9 pCi/g Background = 1.07 pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample Uniform SOF (unweighted)	Loaded Truck Wt (lbs)	Weighting Factor	Weighted SOF
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Inferred Result	Result	Error	MDC	Result	Error	MDC				
8959 - 140619-01-01	0.688	0.113	0.066	0.745	0.100	0.220	1.040	0.155	0.100	6.565	0.359	0.144	0.156	2.150	0.701	0.796	0.10	40,700	0.0045	0.12
8959 - 140619-01-02	0.675	0.113	0.068	0.595	0.072	0.209	0.990	0.153	0.112	3.810	0.208	0.148	0.240	1.270	0.574	0.885	0.05	42,940	0.0048	0.07
8959 - 140619-01-03	0.733	0.117	0.061	1.750	0.206	0.219	0.813	0.144	0.134	5.431	0.297	0.140	0.168	1.760	0.719	0.864	0.11	38,920	0.0043	0.13
8959 - 140619-05-01	0.869	0.130	0.064	0.655	0.123	0.211	1.020	0.170	0.092	6.428	0.355	0.129	0.161	1.360	0.322	0.784	0.08	31,080	0.0035	0.07
8959 - 140619-05-02	0.761	0.116	0.053	0.701	0.123	0.212	1.050	0.153	0.100	6.891	0.380	0.131	0.186	1.650	0.538	0.778	0.11	36,140	0.0040	0.11
8959 - 140619-05-03	0.679	0.117	0.065	1.800	0.197	0.211	1.040	0.188	0.102	5.345	0.290	0.139	0.170	2.030	0.582	0.806	0.14	37,640	0.0042	0.15
8977 - 140624-01-01	0.673	0.112	0.065	3.650	0.477	0.228	0.834	0.131	0.087	6.909	0.380	0.129	0.159	1.910	0.484	0.635	0.20	38,420	0.0043	0.22
8977 - 140624-01-02	0.651	0.110	0.065	3.390	0.450	0.232	0.879	0.153	0.094	6.868	0.379	0.140	0.198	1.540	0.532	0.778	0.19	38,240	0.0043	0.20
8977 - 140624-01-03	0.668	0.104	0.052	7.650	1.040	0.229	0.848	0.125	0.090	4.670	0.255	0.099	0.142	1.600	0.569	0.691	0.34	35,540	0.0040	0.35
8977 - 140624-01-04	0.674	0.104	0.055	5.530	0.735	0.223	0.830	0.124	0.099	4.835	0.260	0.131	0.166	2.090	0.697	0.764	0.26	31,500	0.0035	0.24
8977 - 140624-05-01	0.715	0.114	0.058	3.360	0.428	0.228	0.967	0.139	0.082	6.519	0.357	0.117	0.166	2.070	0.601	0.714	0.19	29,180	0.0032	0.15
8977 - 140624-05-02	0.640	0.108	0.066	3.850	0.433	0.230	1.010	0.149	0.054	7.210	0.398	0.133	0.195	1.610	0.492	0.705	0.21	33,000	0.0037	0.20
8977 - 140624-05-03	0.723	0.110	0.054	2.730	0.432	0.229	0.930	0.167	0.096	3.791	0.207	0.098	0.159	1.290	0.473	0.707	0.14	31,500	0.0035	0.13
8986 - 140625-01-01	0.985	0.144	0.065	6.950	0.738	0.229	0.950	0.153	0.126	15.561	0.859	0.211	0.224	3.430	0.924	0.985	0.39	39,200	0.0044	0.44
8986 - 140625-01-02	0.693	0.108	0.059	9.090	0.955	0.222	0.858	0.155	0.080	5.658	0.312	0.133	0.162	1.350	0.472	0.699	0.41	36,400	0.0041	0.42
8986 - 140625-01-03	0.778	0.121	0.055	9.480	0.997	0.214	0.803	0.142	0.108	6.227	0.343	0.122	0.170	1.590	0.324	0.704	0.43	38,760	0.0043	0.47
8986 - 140625-01-05	0.986	0.134	0.048	8.200	0.846	0.222	0.934	0.153	0.095	6.373	0.349	0.114	0.156	1.990	0.638	0.760	0.38	37,920	0.0042	0.41
8999 - 140626-01-01	0.699	0.112	0.057	6.000	0.682	0.217	0.982	0.163	0.081	8.944	0.494	0.197	0.217	1.820	0.367	0.826	0.31	37,920	0.0042	0.33
8999 - 140626-01-02	0.751	0.127	0.067	6.090	0.728	0.223	0.988	0.162	0.127	9.181	0.506	0.177	0.185	2.240	0.590	0.786	0.31	36,200	0.0040	0.32
8999 - 140626-01-03	0.762	0.135	0.074	4.820	0.525	0.231	0.984	0.178	0.139	10.392	0.569	0.171	0.208	1.190	0.339	0.850	0.26	37,720	0.0042	0.28
8999 - 140626-01-04	0.745	0.112	0.059	5.050	0.515	0.223	0.908	0.137	0.095	7.599	0.419	0.150	0.182	1.850	0.522	0.731	0.26	40,900	0.0046	0.30
8999 - 140626-01-05	0.765	0.125	0.069	2.780	0.429	0.232	0.841	0.140	0.049	6.642	0.365	0.115	0.155	1.840	0.524	0.723	0.16	43,200	0.0048	0.20
8999 - 140626-06-01	0.785	0.134	0.071	1.550	0.279	0.215	1.060	0.164	0.093	7.894	0.436	0.175	0.216	1.560	0.594	0.886	0.15	31,020	0.0035	0.13
8999 - 140626-06-02	0.792	0.126	0.060	3.430	0.428	0.197	0.914	0.173	0.148	9.154	0.505	0.166	0.201	2.140	0.584	0.801	0.21	34,240	0.0038	0.20
8999 - 140626-06-03	0.712	0.109	0.059	5.810	0.618	0.218	0.903	0.136	0.107	9.124	0.504	0.144	0.170	1.710	0.514	0.734	0.30	35,760	0.0040	0.30
8999 - 140626-06-04	0.732	0.123	0.073	4.460	0.497	0.229	0.912	0.159	0.108	8.745	0.481	0.179	0.191	2.390	0.597	0.782	0.25	35,340	0.0039	0.25
8999 - 140626-06-05	0.704	0.115	0.057	4.370	0.490	0.243	0.838	0.141	0.091	9.034	0.499	0.152	0.195	1.810	0.573	0.819	0.24	38,960	0.0043	0.27
9010 - 140627-01-01	1.050	0.145	0.061	1.060	0.178	0.229	1.090	0.169	0.052	3.317	0.180	0.151	0.250	1.270	0.551	0.848	0.12	38,140	0.0042	0.13
9010 - 140627-01-02	1.140	0.171	0.077	0.452	0.097	0.230	1.000	0.180	0.144	2.709	0.147	0.170	0.280	1.040	0.588	0.930	0.08	39,180	0.0044	0.09
9010 - 140627-01-03	1.010	0.157	0.077	1.280	0.305	0.223	1.040	0.180	0.087	1.039	0.054	0.165	0.278	0.748	0.311	0.892	0.08	38,280	0.0043	0.09
9010 - 140627-01-04	1.200	0.176	0.068	0.130	0.049	0.234	1.280	0.240	0.109	2.713	0.144	0.157	0.269	1.460	0.735	0.953	0.24	38,180	0.0042	0.26
9010 - 140627-01-05	1.100	0.166	0.070	0.102	0.038	0.233	1.100	0.188	0.092	1.813	0.097	0.195	0.282	0.923	0.548	1.740	0.09	34,420	0.0038	0.08
9010 - 140627-01-06	1.060	0.152	0.066	0.541	0.162	0.227	1.120	0.167	0.147	2.291	0.124	0.146	0.238	0.917	0.298	0.795	0.10	33,300	0.0037	0.10

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Attachment 1 Reuse Stockpile 8a Sample Data and Calculated SOF Values																				
Sample ID	Ra-226 DCGL = 1.9 pCi/g Background = 1.07 pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample Uniform SOF (unweighted)	Loaded Truck Wt (lbs)	Weighting Factor	Weighted SOF
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Inferred Result	Result	Error	MDC	Result	Error	MDC				
9010 - 140627-01-07	1.020	0.150	0.072	0.089	0.059	0.233	1.020	0.163	0.105	4.834	0.267	0.125	0.165	0.957	0.529	0.837	0.05	34,460	0.0038	0.05
9010 - 140627-06-01	1.120	0.164	0.070	3.310	0.342	0.222	1.060	0.214	0.132	5.861	0.323	0.159	0.215	1.460	0.547	0.811	0.23	33,080	0.0037	0.22
9010 - 140627-06-02	0.979	0.132	0.075	0.422	0.184	0.222	1.040	0.150	0.116	4.272	0.236	0.126	0.175	0.820	0.274	0.776	0.07	32,500	0.0036	0.06
9010 - 140627-06-03	0.984	0.141	0.083	1.330	0.266	0.233	0.967	0.149	0.106	2.617	0.142	0.141	0.196	1.010	0.291	0.762	0.08	27,580	0.0031	0.06
9010 - 140627-06-04	1.110	0.170	0.076	0.770	0.135	0.224	1.100	0.176	0.101	2.557	0.138	0.157	0.198	1.060	0.533	0.830	0.12	32,520	0.0036	0.11
9010 - 140627-06-05	1.230	0.176	0.061	0.271	0.060	0.232	1.150	0.214	0.146	2.501	0.132	0.173	0.279	1.410	0.801	0.999	0.19	29,820	0.0033	0.16
9010 - 140627-06-06	1.260	0.180	0.062	0.019	0.026	0.231	1.050	0.181	0.130	2.619	0.143	0.213	0.367	0.894	0.625	2.130	0.15	31,580	0.0035	0.13
9010 - 140627-06-07	1.130	0.163	0.078	0.084	0.068	0.228	1.040	0.150	0.090	5.468	0.301	0.154	0.172	1.460	0.514	0.757	0.10	30,460	0.0034	0.08
9024 - 140630-01-01	1.050	0.145	0.082	0.024	0.052	0.235	1.010	0.169	0.129	2.495	0.136	0.141	0.185	0.876	0.311	0.870	0.03	36,520	0.0041	0.03
9024 - 140630-01-02	1.300	0.193	0.076	0.141	0.035	0.229	1.200	0.215	0.137	2.520	0.133	0.197	0.370	1.430	0.511	1.560	0.25	33,240	0.0037	0.24
9024 - 140630-01-03	1.120	0.161	0.074	0.114	0.023	0.230	1.190	0.195	0.115	2.317	0.126	0.141	0.190	0.861	0.322	0.880	0.15	34,240	0.0038	0.14
9024 - 140630-01-04	1.140	0.185	0.095	0.223	0.094	0.232	1.200	0.195	0.158	3.064	0.168	0.174	0.284	0.914	0.336	0.955	0.17	42,580	0.0047	0.21
9024 - 140630-01-05	1.190	0.155	0.057	0.230	0.047	0.228	1.030	0.150	0.095	3.315	0.181	0.137	0.173	1.120	0.500	0.774	0.11	38,160	0.0042	0.12
9024 - 140630-01-06	1.120	0.159	0.065	0.152	0.024	0.235	1.100	0.178	0.154	5.850	0.323	0.156	0.190	1.270	0.520	0.788	0.13	38,560	0.0043	0.14
9024 - 140630-01-07	1.090	0.158	0.061	0.600	0.228	0.237	1.050	0.166	0.104	7.291	0.399	0.168	0.218	0.824	0.312	0.872	0.11	38,040	0.0042	0.12
9024 - 140630-01-08	1.180	0.183	0.088	0.342	0.117	0.226	1.230	0.193	0.126	3.166	0.174	0.157	0.258	0.882	0.349	0.976	0.21	31,040	0.0035	0.19
9024 - 140630-06-01	1.120	0.149	0.056	0.165	0.038	0.226	1.070	0.161	0.077	3.218	0.175	0.147	0.199	1.190	0.495	0.755	0.09	35,180	0.0039	0.10
9024 - 140630-06-02	1.090	0.155	0.066	0.210	0.051	0.223	1.190	0.173	0.072	2.901	0.154	0.143	0.247	1.550	0.533	0.780	0.14	30,020	0.0033	0.12
9024 - 140630-06-03	1.040	0.151	0.057	0.127	0.030	0.221	1.090	0.193	0.076	1.518	0.081	0.187	0.258	0.809	0.342	0.849	0.06	32,480	0.0036	0.06
9024 - 140630-06-04	1.210	0.179	0.072	3.710	0.394	0.227	0.931	0.166	0.136	1.770	0.093	0.161	0.264	1.090	0.594	0.820	0.24	32,700	0.0036	0.22
9024 - 140630-06-05	1.240	0.182	0.073	0.086	0.127	0.231	1.150	0.185	0.130	2.006	0.107	0.179	0.334	0.980	0.467	1.460	0.19	28,100	0.0031	0.15
9024 - 140630-06-06	1.110	0.159	0.068	0.170	0.070	0.230	1.150	0.171	0.115	3.870	0.210	0.173	0.213	1.510	0.634	0.825	0.14	33,560	0.0037	0.13
9024 - 140630-06-07	1.160	0.178	0.085	0.225	0.059	0.228	1.030	0.190	0.129	2.687	0.145	0.169	0.279	1.130	0.341	0.889	0.09	30,460	0.0034	0.08
9040 - 140701-01-01	0.923	0.129	0.062	1.790	0.274	0.228	1.010	0.149	0.114	2.619	0.143	0.137	0.181	0.901	0.289	0.775	0.10	35,760	0.0040	0.10
9040 - 140701-01-02	1.160	0.156	0.076	0.770	0.107	0.221	1.230	0.200	0.080	3.308	0.179	0.147	0.232	1.300	0.480	0.714	0.22	38,760	0.0043	0.24
9040 - 140701-01-03	1.130	0.165	0.073	0.618	0.068	0.217	1.010	0.171	0.106	2.402	0.130	0.125	0.201	0.984	0.319	0.855	0.08	39,260	0.0044	0.09
9040 - 140701-01-04	1.090	0.157	0.060	1.050	0.132	0.225	1.060	0.176	0.121	3.228	0.177	0.148	0.272	0.990	0.298	0.772	0.11	43,560	0.0048	0.13
9040 - 140701-05-01	1.240	0.177	0.067	0.918	0.181	0.225	1.030	0.182	0.166	6.415	0.354	0.161	0.192	1.030	0.324	0.807	0.19	32,560	0.0036	0.17
9040 - 140701-06-01	1.250	0.174	0.062	0.371	0.067	0.215	1.180	0.212	0.115	1.248	0.061	0.161	0.341	1.180	0.594	1.690	0.21	33,960	0.0038	0.21
9040 - 140701-06-02	1.130	0.158	0.069	0.560	0.111	0.229	1.020	0.152	0.097	2.103	0.111	0.131	0.228	1.190	0.494	0.752	0.08	34,760	0.0039	0.08
9051 - 140702-01-01	1.160	0.159	0.066	2.150	0.249	0.219	1.170	0.174	0.095	4.546	0.246	0.133	0.179	1.810	0.595	0.868	0.26	42,980	0.0048	0.31
9051 - 140702-01-02	1.120	0.156	0.065	1.690	0.265	0.222	0.804	0.142	0.142	8.402	0.464	0.164	0.209	1.750	0.557	0.802	0.16	41,860	0.0047	0.19
9051 - 140702-05-01	1.020	0.157	0.076	1.430	0.146	0.209	1.010	0.175	0.104	4.141	0.228	0.200	0.273	0.585	0.298	0.866	0.09	34,100	0.0038	0.09

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Attachment 1 Reuse Stockpile 8a Sample Data and Calculated SOF Values																				
Sample ID	Ra-226 DCGL = 1.9 pCi/g Background = 1.07 pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g Inferred Result	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample Uniform SOF (unweighted)	Loaded Truck Wt (lbs)	Weighting Factor	Weighted SOF
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC		Result	Error	MDC	Result	Error	MDC				
9051 - 140702-05-02	1.180	0.170	0.067	2.620	0.315	0.221	1.020	0.176	0.110	5.159	0.284	0.133	0.203	1.340	0.628	0.971	0.21	32,600	0.0036	0.20
9671 - 140922-05-03	1.070	0.152	0.066	0.921	0.132	0.208	1.150	0.168	0.089	4.579	0.250	0.120	0.175	1.520	0.544	0.850	0.15	30,080	0.0033	0.13
9671 - 140922-05-04	1.150	0.158	0.068	0.603	0.177	0.217	1.030	0.182	0.145	3.953	0.215	0.143	0.182	1.430	0.689	0.877	0.11	32,540	0.0036	0.11
9671 - 140922-05-05	1.210	0.182	0.078	0.957	0.155	0.209	1.230	0.203	0.146	4.293	0.230	0.187	0.315	2.000	0.782	1.050	0.27	34,260	0.0038	0.26
9671 - 140922-05-06	1.040	0.154	0.076	0.663	0.149	0.220	1.070	0.170	0.119	3.962	0.215	0.132	0.174	1.490	0.557	0.831	0.09	31,340	0.0035	0.08
9671 - 140922-06-03	1.270	0.198	0.092	0.875	0.109	0.226	1.250	0.206	0.148	2.585	0.139	0.159	0.280	1.130	0.530	1.100	0.29	33,980	0.0038	0.28
9671 - 140922-06-04	1.130	0.158	0.065	0.635	0.262	0.225	1.060	0.185	0.126	4.960	0.272	0.134	0.228	1.490	0.660	0.842	0.13	30,400	0.0034	0.11
9671 - 140922-06-05	0.951	0.151	0.077	0.987	0.145	0.233	1.140	0.192	0.137	2.918	0.154	0.131	0.224	1.650	0.795	0.914	0.14	34,100	0.0038	0.13
9671 - 140922-06-06	1.050	0.142	0.057	1.300	0.274	0.229	1.110	0.177	0.106	5.228	0.287	0.157	0.191	1.540	0.644	0.802	0.15	33,020	0.0037	0.14
9682 - 140923-05-01	1.100	0.154	0.070	0.809	0.113	0.226	1.010	0.148	0.125	5.715	0.315	0.151	0.214	1.400	0.538	0.820	0.10	23,420	0.0026	0.06
9682 - 140923-05-02	1.240	0.193	0.094	0.953	0.231	0.226	1.220	0.219	0.127	2.968	0.159	0.172	0.276	1.400	0.781	0.999	0.26	19,960	0.0022	0.15
9682 - 140923-05-03	1.000	0.150	0.079	0.917	0.090	0.230	1.040	0.155	0.111	4.444	0.239	0.135	0.242	1.950	0.644	0.798	0.10	22,020	0.0025	0.06
9682 - 140923-05-04	1.090	0.159	0.086	0.933	0.099	0.229	1.300	0.227	0.114	5.161	0.283	0.154	0.209	1.560	0.582	0.877	0.24	29,960	0.0033	0.20
9682 - 140923-06-01	0.920	0.136	0.070	0.808	0.094	0.226	0.975	0.148	0.122	4.705	0.258	0.139	0.203	1.430	0.475	0.699	0.07	27,980	0.0031	0.06
9682 - 140923-06-02	1.230	0.183	0.077	0.701	0.164	0.232	1.140	0.185	0.118	4.340	0.238	0.160	0.222	1.310	0.501	1.180	0.22	20,220	0.0023	0.12
9682 - 140923-06-03	1.180	0.180	0.107	2.030	0.198	0.227	1.340	0.249	0.113	4.504	0.247	0.160	0.196	1.350	0.529	0.974	0.34	20,940	0.0023	0.21
9790 - 141007-05-02	1.080	0.163	0.075	1.980	0.242	0.221	1.030	0.157	0.121	4.869	0.268	0.166	0.204	1.300	0.669	0.890	0.14	33,620	0.0037	0.13
9790 - 141007-05-03	1.050	0.166	0.092	2.140	0.283	0.212	0.964	0.193	0.119	5.350	0.294	0.172	0.237	1.500	0.559	0.977	0.13	36,900	0.0041	0.13
9790 - 141007-05-04	1.060	0.173	0.091	2.290	0.227	0.222	1.030	0.201	0.120	6.465	0.353	0.185	0.284	2.210	0.822	0.970	0.16	30,040	0.0033	0.14
9790 - 141007-06-01	1.050	0.152	0.072	1.190	0.125	0.219	1.040	0.177	0.114	5.376	0.293	0.178	0.224	1.910	0.738	0.888	0.11	35,100	0.0039	0.11
9818 - 141008-05-01	0.959	0.140	0.056	2.300	0.237	0.222	0.909	0.156	0.107	6.849	0.377	0.152	0.192	1.820	0.693	0.832	0.14	30,380	0.0034	0.13
9818 - 141008-05-02	1.050	0.154	0.085	2.150	0.251	0.222	1.090	0.181	0.117	4.693	0.254	0.154	0.232	1.920	0.797	0.923	0.17	31,960	0.0036	0.16
9818 - 141008-05-03	1.050	0.170	0.091	1.590	0.220	0.222	0.957	0.175	0.120	6.100	0.336	0.121	0.190	1.550	0.619	0.926	0.11	32,880	0.0037	0.10
9818 - 141008-05-04	1.130	0.160	0.098	1.190	0.157	0.223	1.070	0.178	0.124	2.874	0.154	0.158	0.270	1.360	0.566	0.955	0.14	33,160	0.0037	0.13
9818 - 141008-05-05	1.090	0.156	0.069	1.140	0.120	0.239	0.983	0.156	0.181	5.550	0.305	0.150	0.231	1.580	0.929	1.110	0.10	34,900	0.0039	0.10
9818 - 141008-05-06	1.160	0.179	0.078	1.760	0.203	0.215	1.030	0.186	0.178	5.598	0.307	0.198	0.302	1.660	0.638	0.949	0.18	34,560	0.0038	0.17
9818 - 141008-05-07	0.949	0.166	0.109	4.920	0.505	0.228	1.100	0.213	0.132	7.262	0.400	0.181	0.220	1.880	0.661	0.959	0.30	22,920	0.0026	0.20
9818 - 141008-06-01	1.280	0.175	0.072	1.890	0.227	0.225	1.100	0.266	0.166	5.340	0.289	0.201	0.314	2.120	0.924	1.120	0.28	33,700	0.0038	0.27
9818 - 141008-06-02	1.030	0.143	0.072	2.400	0.395	0.218	1.030	0.166	0.119	5.428	0.299	0.160	0.230	1.380	0.395	0.965	0.15	36,700	0.0041	0.16
9818 - 141008-06-03	1.160	0.187	0.092	1.600	0.156	0.224	1.010	0.178	0.138	7.940	0.438	0.239	0.261	1.870	0.669	0.991	0.18	33,280	0.0037	0.17
9818 - 141008-06-04	1.080	0.170	0.253	1.750	0.176	0.230	1.200	0.246	0.133	4.121	0.225	0.168	0.224	1.390	0.630	0.992	0.21	35,060	0.0039	0.21
9818 - 141008-06-05	1.030	0.153	0.080	7.920	0.788	0.226	1.050	0.170	0.136	6.164	0.338	0.159	0.214	1.850	0.841	0.991	0.39	38,100	0.0042	0.42
9818 - 141008-06-06	1.010	0.155	0.070	5.420	0.759	0.240	1.120	0.193	0.150	11.424	0.631	0.205	0.267	2.290	0.655	0.899	0.36	39,840	0.0044	0.41

Hematite Decommissioning Project	FSSFR Volume 2, Chapter 6: <i>Data Summary Report for Reuse Stockpiles 8a and 8b</i>																	Page 24 of 47			
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Attachment 1 Reuse Stockpile 8a Sample Data and Calculated SOF Values																					
Sample ID	Ra-226 DCGL = 1.9 pCi/g Background = 1.07 pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample Uniform SOF (unweighted)	Loaded Truck Wt (lbs)	Weighting Factor	Weighted SOF	
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Inferred Result	Result	Error	MDC	Result	Error	MDC					
9818 - 141008-06-07	0.970	0.145	0.073	2.210	0.302	0.224	0.940	0.146	0.127	7.675	0.423	0.175	0.208	1.890	0.553	0.810	0.15	40,220	0.0045	0.17	
0049 - 141104-06-01	1.330	0.205	0.099	0.780	0.142	0.220	1.210	0.196	0.157	3.720	0.205	0.170	0.288	0.923	0.646	1.040	0.30	25,260	0.0028	0.22	
0049 - 141104-06-02	1.170	0.169	0.083	0.824	0.089	0.222	1.120	0.176	0.123	2.821	0.154	0.157	0.266	0.957	0.308	0.899	0.17	25,040	0.0028	0.12	
0078 - 141106-01-01	1.090	0.176	0.089	0.294	0.121	0.214	1.200	0.214	0.162	6.173	0.340	0.152	0.235	1.590	0.929	1.130	0.17	35,500	0.0040	0.17	
0078 - 141106-01-02	1.110	0.154	0.070	0.614	0.078	0.214	1.160	0.182	0.104	7.262	0.400	0.170	0.207	1.880	0.580	0.837	0.18	38,260	0.0043	0.20	
0078 - 141106-06-01	0.959	0.141	0.087	1.030	0.221	0.228	1.260	0.269	0.154	7.101	0.392	0.157	0.265	1.560	0.771	0.948	0.22	28,100	0.0031	0.18	
0078 - 141106-06-02	1.070	0.161	0.090	0.644	0.089	0.227	1.110	0.190	0.135	3.447	0.190	0.150	0.263	0.842	0.370	0.987	0.11	31,220	0.0035	0.10	
0078 - 141106-06-03	1.050	0.148	0.074	0.968	0.175	0.223	1.150	0.167	0.120	4.891	0.266	0.145	0.222	1.810	0.591	0.759	0.15	35,080	0.0039	0.15	
0078 - 141106-06-04	1.360	0.202	0.088	0.433	0.117	0.219	1.120	0.220	0.155	4.035	0.221	0.187	0.262	1.240	0.500	1.240	0.26	28,620	0.0032	0.21	
0078 - 141106-06-05	1.200	0.164	0.074	0.431	0.130	0.242	1.250	0.211	0.135	7.704	0.425	0.190	0.230	1.810	0.654	0.968	0.27	29,960	0.0033	0.23	
0078 - 141106-06-06	1.150	0.169	0.080	1.440	0.169	0.210	1.190	0.191	0.092	7.744	0.427	0.166	0.216	1.870	0.614	0.892	0.25	33,500	0.0037	0.24	
0098 - 141107-01-01	1.190	0.166	0.077	0.129	0.082	0.212	1.130	0.164	0.114	3.297	0.174	0.154	0.222	1.800	0.666	0.795	0.16	28,920	0.0032	0.14	
0098 - 141107-01-02	1.220	0.175	0.072	0.251	0.059	0.210	1.160	0.173	0.100	4.432	0.242	0.125	0.210	1.520	0.539	0.792	0.21	32,080	0.0036	0.19	
0098 - 141107-01-03	1.090	0.163	0.081	0.226	0.030	0.222	1.020	0.168	0.130	5.035	0.278	0.166	0.298	1.070	0.582	0.917	0.07	39,080	0.0043	0.07	
0098 - 141107-01-04	1.130	0.157	0.071	1.020	0.110	0.210	1.040	0.168	0.124	4.723	0.260	0.132	0.214	1.260	0.508	0.817	0.13	38,420	0.0043	0.14	
0098 - 141107-01-05	1.080	0.181	0.092	0.229	0.074	0.220	1.150	0.201	0.174	2.119	0.115	0.173	0.289	0.812	0.427	1.220	0.11	36,460	0.0041	0.11	
0098 - 141107-01-06	1.090	0.175	0.090	1.030	0.119	0.211	1.060	0.205	0.144	3.330	0.183	0.172	0.255	0.930	0.396	1.020	0.11	37,860	0.0042	0.12	
0098 - 141107-01-07	1.180	0.168	0.104	1.230	0.169	0.213	1.270	0.199	0.137	8.170	0.450	0.151	0.214	2.060	0.783	0.974	0.30	35,320	0.0039	0.31	
0098 - 141107-06-01	1.140	0.171	0.082	5.820	0.570	0.216	1.080	0.175	0.153	4.742	0.261	0.171	0.276	1.260	0.554	0.958	0.35	23,700	0.0026	0.23	
0098 - 141107-06-02	1.200	0.183	0.086	0.320	0.154	0.213	1.030	0.179	0.344	4.768	0.262	0.207	0.300	1.340	0.596	0.914	0.13	31,080	0.0035	0.12	
0098 - 141107-06-03	1.130	0.161	0.075	0.271	0.049	0.235	1.030	0.158	0.116	2.756	0.147	0.149	0.241	1.380	0.515	0.770	0.08	33,160	0.0037	0.08	
0098 - 141107-06-04	1.040	0.141	0.061	0.754	0.088	0.237	1.100	0.166	0.096	2.072	0.110	0.145	0.244	1.060	0.513	0.802	0.10	31,480	0.0035	0.09	
0098 - 141107-06-05	1.090	0.167	0.075	1.310	0.157	0.221	1.030	0.177	0.167	12.872	0.711	0.214	0.266	2.470	0.927	1.050	0.17	37,500	0.0042	0.18	
0098 - 141107-06-06	1.040	0.162	0.086	2.000	0.208	0.231	0.972	0.172	0.106	7.870	0.432	0.195	0.247	0.982	0.330	0.909	0.13	30,600	0.0034	0.12	
0098 - 141107-06-07	1.060	0.142	0.057	0.855	0.098	0.232	1.010	0.159	0.105	3.383	0.185	0.122	0.206	1.120	0.471	0.731	0.07	33,600	0.0037	0.06	
0129 - 141111-01-01	1.440	0.209	0.093	0.104	0.071	0.208	1.060	0.181	0.142	5.799	0.318	0.203	0.309	1.770	0.527	1.030	0.28	36,360	0.0040	0.29	
0129 - 141111-01-02	1.130	0.150	0.068	0.259	0.027	0.214	1.170	0.195	0.107	5.598	0.309	0.159	0.270	1.230	0.343	0.892	0.17	40,720	0.0045	0.20	
0129 - 141111-01-03	1.140	0.159	0.057	0.220	0.047	0.216	1.030	0.159	0.132	5.995	0.331	0.145	0.210	1.300	0.540	0.817	0.11	45,300	0.0050	0.14	
0129 - 141111-01-04	1.190	0.158	0.062	9.560	0.934	0.224	1.160	0.199	0.089	5.723	0.313	0.149	0.239	1.840	0.563	0.823	0.57	44,380	0.0049	0.72	
0129 - 141111-01-05	1.270	0.188	0.072	0.464	0.060	0.217	1.110	0.208	0.139	4.321	0.235	0.173	0.296	1.610	0.641	1.000	0.21	40,060	0.0045	0.25	
0129 - 141111-06-01	1.230	0.178	0.091	0.594	0.090	0.197	1.050	0.187	0.175	6.355	0.351	0.181	0.279	1.300	0.589	0.937	0.18	34,040	0.0038	0.17	
0129 - 141111-06-02	1.180	0.157	0.059	0.733	0.115	0.211	0.979	0.152	0.107	4.836	0.263	0.139	0.215	1.760	0.663	0.779	0.13	33,160	0.0037	0.12	
0129 - 141111-06-03	1.050	0.146	0.081	0.306	0.118	0.204	1.030	0.164	0.107	3.465	0.188	0.130	0.194	1.360	0.522	0.786	0.06	39,580	0.0044	0.06	

Hematite Decommissioning Project	FSSFR Volume 2, Chapter 6: <i>Data Summary Report for Reuse Stockpiles 8a and 8b</i>																Page 25 of 47			
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Attachment 1 Reuse Stockpile 8a Sample Data and Calculated SOF Values																				
Sample ID	Ra-226 DCGL = 1.9 pCi/g Background = 1.07 pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample Uniform SOF (unweighted)	Loaded Truck Wt (lbs)	Weighting Factor	Weighted SOF
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Inferred Result	Result	Error	MDC	Result	Error	MDC				
0129 - 141111-06-04	1.340	0.202	0.088	0.148	0.044	0.223	1.440	0.305	0.198	5.015	0.277	0.180	0.308	0.902	0.450	1.280	0.40	36,060	0.0040	0.42
0129 - 141111-06-05	1.190	0.184	0.091	-0.008	0.086	0.216	1.160	0.183	0.090	4.176	0.229	0.140	0.198	1.280	0.506	0.883	0.18	36,080	0.0040	0.18
0145 - 141112-01-01	1.010	0.153	0.073	0.618	0.127	0.199	0.949	0.156	0.093	2.880	0.152	0.135	0.266	1.600	0.738	0.904	0.05	33,800	0.0038	0.05
0145 - 141112-06-01	1.010	0.145	0.070	0.088	0.046	0.215	1.060	0.161	0.092	5.259	0.288	0.147	0.189	1.620	0.518	0.752	0.08	33,960	0.0038	0.07
0159 - 141113-01-01	1.070	0.149	0.077	0.485	0.096	0.225	1.050	0.193	0.136	3.898	0.212	0.176	0.252	1.420	0.627	0.961	0.08	38,740	0.0043	0.08
0159 - 141113-01-02	1.300	0.205	0.092	0.390	0.140	0.228	1.310	0.229	0.113	2.657	0.137	0.180	0.289	1.790	0.687	1.140	0.32	40,060	0.0045	0.36
0159 - 141113-01-03	1.080	0.154	0.073	0.855	0.193	0.233	1.160	0.169	0.114	5.418	0.298	0.145	0.226	1.490	0.555	0.832	0.16	34,700	0.0039	0.16
0159 - 141113-01-04	1.130	0.155	0.062	0.747	0.148	0.234	0.969	0.143	0.101	2.985	0.163	0.140	0.197	1.000	0.485	0.756	0.09	41,940	0.0047	0.10
0159 - 141113-01-05	1.220	0.184	0.080	0.974	0.137	0.211	1.180	0.209	0.122	5.708	0.308	0.186	0.254	2.460	0.962	1.060	0.26	45,860	0.0051	0.34
0159 - 141113-01-06	1.290	0.205	0.105	1.580	0.147	0.246	1.240	0.219	0.153	3.604	0.196	0.165	0.275	1.350	0.689	1.320	0.33	39,280	0.0044	0.37
0159 - 141113-06-01	1.260	0.173	0.070	0.600	0.148	0.238	1.140	0.173	0.117	4.751	0.262	0.138	0.217	1.130	0.323	0.852	0.23	33,160	0.0037	0.22
0159 - 141113-06-02	0.985	0.144	0.077	0.513	0.139	0.228	1.240	0.229	0.113	3.402	0.185	0.128	0.217	1.240	0.620	0.966	0.17	31,220	0.0035	0.15
0159 - 141113-06-03	1.120	0.157	0.076	1.640	0.260	0.241	1.100	0.167	0.107	4.948	0.271	0.152	0.236	1.570	0.515	0.775	0.18	33,800	0.0038	0.17
0159 - 141113-06-04	0.963	0.153	0.107	1.010	0.106	0.235	1.210	0.185	0.112	4.184	0.225	0.167	0.282	1.840	0.631	0.974	0.18	31,900	0.0036	0.17
0159 - 141113-06-05	1.090	0.158	0.102	1.060	0.163	0.242	1.350	0.238	0.118	4.202	0.226	0.167	0.268	1.900	0.742	0.907	0.26	33,020	0.0037	0.25
0159 - 141113-06-06	1.110	0.157	0.071	0.209	0.040	0.243	1.130	0.175	0.112	1.916	0.097	0.135	0.245	1.500	0.498	0.825	0.11	35,540	0.0040	0.12
0159 - 141113-06-07	1.310	0.197	0.084	1.280	0.230	0.239	1.360	0.264	0.144	2.037	0.106	0.175	0.308	1.270	0.539	1.290	0.38	31,420	0.0035	0.34
0178 - 141114-01-01	1.150	0.162	0.072	0.578	0.136	0.236	1.230	0.208	0.133	3.127	0.166	0.143	0.208	1.640	0.573	0.888	0.21	37,860	0.0042	0.23
0178 - 141114-01-02	1.210	0.163	0.070	4.080	0.445	0.245	1.140	0.175	0.112	4.568	0.252	0.140	0.196	1.060	0.318	0.848	0.34	38,380	0.0043	0.37
0178 - 141114-01-03	1.370	0.205	0.098	1.450	0.142	0.240	1.200	0.201	0.121	2.451	0.133	0.172	0.298	0.927	0.368	1.030	0.34	39,300	0.0044	0.38
0178 - 141114-06-01	1.380	0.203	0.090	0.344	0.058	0.240	1.040	0.198	0.160	1.264	0.062	0.128	0.311	1.240	0.498	1.040	0.21	34,000	0.0038	0.21
0178 - 141114-06-02	1.400	0.188	0.076	0.913	0.257	0.242	1.280	0.183	0.148	4.184	0.227	0.155	0.257	1.580	0.730	0.896	0.39	35,200	0.0039	0.39
0178 - 141114-06-03	1.120	0.163	0.082	1.470	0.163	0.256	1.280	0.181	0.117	2.606	0.139	0.158	0.267	1.260	0.330	0.849	0.25	37,200	0.0041	0.26
0212 - 141117-01-01	1.230	0.169	0.071	0.532	0.088	0.243	1.250	0.179	0.128	2.670	0.140	0.142	0.240	1.600	0.570	0.884	0.26	38,820	0.0043	0.28
0212 - 141117-01-02	1.350	0.196	0.072	2.300	0.305	0.237	1.130	0.237	0.146	3.803	0.209	0.198	0.299	1.060	0.653	1.040	0.33	39,160	0.0044	0.37
0212 - 141117-01-03	1.010	0.159	0.109	4.220	0.508	0.237	1.130	0.202	0.123	6.083	0.336	0.200	0.239	1.220	0.352	0.992	0.28	33,900	0.0038	0.27
0342 - 141203-01-01	1.210	0.185	0.088	1.060	0.125	0.233	1.220	0.225	0.154	21.507	1.180	0.247	0.308	2.630	0.647	1.150	0.37	35,200	0.0039	0.38
0342 - 141203-01-02	1.290	0.172	0.071	1.020	0.118	0.242	1.150	0.185	0.122	4.204	0.231	0.150	0.252	1.170	0.329	0.792	0.26	31,220	0.0035	0.24
0355 - 141204-01-01	1.170	0.171	0.080	0.462	0.091	0.234	1.190	0.193	0.128	3.089	0.168	0.143	0.206	1.140	0.652	0.878	0.19	33,660	0.0037	0.18
0355 - 141204-01-02	1.360	0.211	0.100	0.116	0.036	0.238	1.410	0.255	0.124	2.501	0.126	0.150	0.298	2.150	0.855	1.210	0.39	28,020	0.0031	0.31
0355 - 141204-01-03	1.430	0.198	0.077	0.244	0.093	0.251	1.220	0.194	0.143	3.409	0.185	0.159	0.269	1.330	0.519	0.930	0.34	30,460	0.0034	0.29
0355 - 141204-01-04	1.260	0.182	0.097	0.340	0.042	0.242	1.200	0.213	0.134	5.595	0.308	0.222	0.322	1.490	0.861	1.050	0.26	31,240	0.0035	0.23
0355 - 141204-01-05	1.340	0.198	0.087	0.140	0.033	0.262	1.390	0.233	0.130	2.910	0.157	0.186	0.320	1.230	0.577	1.100	0.37	27,760	0.0031	0.29

Hematite Decommissioning Project	FSSFR Volume 2, Chapter 6: <i>Data Summary Report for Reuse Stockpiles 8a and 8b</i>																			
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Attachment 1 Reuse Stockpile 8a Sample Data and Calculated SOF Values																				
Sample ID	Ra-226 DCGL = 1.9 pCi/g Background = 1.07 pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample Uniform SOF (unweighted)	Loaded Truck Wt (lbs)	Weighting Factor	Weighted SOF
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Inferred Result	Result	Error	MDC	Result	Error	MDC				
0379 - 141208-01-01	1.450	0.190	0.074	0.061	0.038	0.238	1.280	0.205	0.136	8.219	0.454	0.179	0.254	1.590	0.590	0.953	0.40	29,540	0.0033	0.34
0379 - 141208-01-02	1.410	0.204	0.089	0.151	0.046	0.290	1.210	0.221	0.160	2.463	0.127	0.211	0.302	1.680	0.886	1.070	0.31	31,560	0.0035	0.28
0379 - 141208-01-03	1.360	0.198	0.082	0.522	0.098	0.257	1.210	0.204	0.128	3.305	0.181	0.192	0.305	1.050	0.512	0.999	0.31	33,760	0.0038	0.29
0390 - 141209-01-01	1.400	0.190	0.081	0.166	0.025	0.256	1.340	0.211	0.119	3.064	0.168	0.172	0.279	0.918	0.571	0.954	0.37	36,120	0.0040	0.39
0390 - 141209-01-02	1.460	0.199	0.078	0.015	0.055	0.246	1.280	0.216	0.129	6.319	0.349	0.160	0.222	1.270	0.544	0.937	0.39	34,860	0.0039	0.39
0390 - 141209-01-03	1.580	0.227	0.093	0.213	0.072	0.265	1.280	0.210	0.117	4.432	0.242	0.214	0.270	1.510	0.588	1.120	0.45	38,740	0.0043	0.50
0390 - 141209-01-04	1.420	0.221	0.110	0.229	0.196	0.221	1.320	0.250	0.195	6.010	0.332	0.192	0.277	1.170	0.397	1.130	0.40	36,700	0.0041	0.42
0390 - 141209-01-05	1.570	0.207	0.085	0.145	0.074	0.259	1.470	0.271	0.136	4.652	0.253	0.177	0.284	1.700	0.643	0.992	0.54	37,340	0.0042	0.58
0408 - 141210-01-01	1.720	0.241	0.101	0.045	0.028	0.231	1.450	0.224	0.163	6.946	0.383	0.196	0.243	1.670	0.674	1.030	0.62	38,600	0.0043	0.68
0408 - 141210-01-02	1.410	0.190	0.076	-0.023	0.073	0.254	1.230	0.184	0.138	2.633	0.137	0.163	0.284	1.660	0.587	0.867	0.32	33,560	0.0037	0.31
0408 - 141210-01-03	1.370	0.183	0.084	0.013	0.027	0.230	1.220	0.208	0.132	2.975	0.160	0.170	0.322	1.320	0.583	1.000	0.29	33,820	0.0038	0.28
0408 - 141210-01-04	1.300	0.181	0.080	0.012	0.039	0.235	1.250	0.183	0.136	3.769	0.205	0.160	0.248	1.410	0.660	0.875	0.28	36,700	0.0041	0.29
0408 - 141210-01-05	1.440	0.190	0.082	0.005	0.088	0.230	1.320	0.212	0.119	2.812	0.150	0.139	0.214	1.380	0.525	0.848	0.38	38,280	0.0043	0.41
0421 - 141211-01-01	1.360	0.206	0.096	-0.067	0.049	0.257	1.300	0.246	0.146	3.843	0.209	0.188	0.252	1.420	0.850	1.070	0.33	40,660	0.0045	0.39
0421 - 141211-01-02	1.080	0.159	0.082	-0.036	0.080	0.273	1.230	0.185	0.149	4.459	0.243	0.142	0.207	1.590	0.819	0.996	0.16	37,540	0.0042	0.17
0421 - 141211-01-03	1.570	0.242	0.111	0.126	0.035	0.229	1.370	0.234	0.196	2.343	0.118	0.192	0.340	1.990	0.882	1.470	0.48	39,360	0.0044	0.54
0421 - 141211-01-04	1.390	0.208	0.095	-0.038	0.067	0.252	1.290	0.212	0.142	6.275	0.346	0.207	0.289	1.490	0.570	1.080	0.36	36,960	0.0041	0.38
0421 - 141211-01-05	1.370	0.189	0.082	0.192	0.026	0.253	1.260	0.192	0.116	4.158	0.227	0.185	0.235	1.390	0.598	0.929	0.33	35,500	0.0040	0.33
0421 - 141211-01-06	1.480	0.201	0.070	-0.003	0.081	0.241	1.350	0.226	0.152	3.060	0.168	0.180	0.282	0.900	0.340	0.942	0.42	38,760	0.0043	0.46
0446 - 141212-01-01	1.330	0.184	0.095	0.022	0.101	0.251	1.340	0.203	0.110	2.999	0.160	0.158	0.269	1.470	0.546	0.867	0.33	34,280	0.0038	0.33
0446 - 141212-01-02	1.530	0.235	0.116	-0.097	0.035	0.266	1.400	0.254	0.167	2.441	0.128	0.212	0.331	1.470	0.878	1.400	0.47	38,600	0.0043	0.51
0446 - 141212-01-03	1.570	0.218	0.082	0.023	0.033	0.247	1.320	0.194	0.132	2.422	0.127	0.157	0.286	1.400	0.617	0.943	0.45	38,180	0.0042	0.49
0446 - 141212-01-04	1.370	0.192	0.080	-0.112	0.068	0.269	1.270	0.198	0.127	3.262	0.174	0.152	0.270	1.580	0.581	0.992	0.32	40,320	0.0045	0.37
0446 - 141212-01-05	1.260	0.184	0.084	-0.012	0.114	0.276	1.290	0.230	0.167	10.012	0.553	0.204	0.305	1.830	0.924	1.090	0.32	43,460	0.0048	0.39
0470 - 141213-01-01	1.450	0.212	0.087	0.125	0.051	0.266	1.300	0.233	0.169	6.538	0.361	0.196	0.327	1.400	0.706	1.100	0.40	31,680	0.0035	0.36
0470 - 141213-01-02	1.310	0.190	0.100	0.092	0.102	0.274	1.170	0.212	0.111	4.078	0.223	0.179	0.295	1.350	0.643	0.993	0.25	35,240	0.0039	0.25
0470 - 141213-01-03	1.460	0.214	0.088	0.624	0.062	0.254	1.180	0.216	0.138	5.387	0.295	0.193	0.297	1.690	0.807	1.020	0.36	37,380	0.0042	0.39
0470 - 141213-01-04	0.919	0.162	0.179	-0.069	0.077	0.265	1.420	0.212	0.132	2.393	0.127	0.185	0.274	1.220	0.562	0.876	0.23	40,220	0.0045	0.27
0470 - 141213-01-05	1.440	0.222	0.111	0.104	0.098	0.255	1.430	0.238	0.118	6.928	0.382	0.230	0.340	1.050	0.388	1.040	0.46	38,340	0.0043	0.51
0470 - 141213-01-06	1.440	0.201	0.085	0.333	0.031	0.259	1.320	0.225	0.120	4.268	0.233	0.189	0.245	1.460	0.542	0.981	0.40	38,340	0.0043	0.44
0494 - 141216-01-01	1.350	0.183	0.071	0.305	0.068	0.251	1.250	0.180	0.110	3.818	0.210	0.140	0.199	1.050	0.334	0.791	0.31	32,980	0.0037	0.30
0494 - 141216-01-02	1.260	0.177	0.068	0.145	0.046	0.245	1.210	0.184	0.140	3.090	0.169	0.147	0.259	1.020	0.332	0.894	0.24	37,100	0.0041	0.25
0494 - 141216-01-03	1.400	0.205	0.083	0.159	0.097	0.240	1.170	0.212	0.169	2.220	0.121	0.177	0.294	0.780	0.441	1.240	0.28	35,760	0.0040	0.29

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Attachment 1 Reuse Stockpile 8a Sample Data and Calculated SOF Values																				
Sample ID	Ra-226 DCGL = 1.9 pCi/g Background = 1.07 pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g Inferred Result	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample Uniform SOF (unweighted)	Loaded Truck Wt (lbs)	Weighting Factor	Weighted SOF
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC		Result	Error	MDC	Result	Error	MDC				
0508 - 141217-01-01	1.140	0.164	0.080	0.182	0.118	0.220	1.230	0.179	0.103	4.531	0.249	0.156	0.230	1.260	0.556	0.853	0.19	35,900	0.0040	0.20
0508 - 141217-01-02	1.410	0.210	0.088	0.196	0.093	0.251	1.460	0.249	0.162	5.491	0.303	0.200	0.318	1.250	0.526	1.420	0.46	35,740	0.0040	0.47
0508 - 141217-01-03	1.160	0.168	0.075	0.532	0.063	0.245	1.330	0.198	0.106	4.691	0.258	0.166	0.263	1.280	0.533	0.858	0.27	34,860	0.0039	0.27
0508 - 141217-01-04	1.270	0.173	0.071	0.124	0.117	0.217	1.200	0.201	0.118	3.486	0.190	0.150	0.246	1.240	0.523	0.829	0.24	37,180	0.0041	0.25
0508 - 141217-01-05	1.200	0.165	0.083	0.190	0.092	0.224	1.200	0.190	0.138	3.388	0.187	0.155	0.262	0.754	0.359	0.911	0.20	35,600	0.0040	0.20
0520 - 141218-01-01	1.390	0.204	0.080	0.103	0.026	0.244	1.340	0.205	0.148	2.762	0.148	0.166	0.247	1.330	0.723	0.997	0.37	34,560	0.0038	0.36
0520 - 141218-01-02	1.260	0.198	0.091	0.215	0.076	0.227	1.510	0.255	0.128	4.652	0.253	0.165	0.243	1.720	0.585	1.050	0.40	39,320	0.0044	0.45
0520 - 141218-01-03	1.260	0.175	0.077	0.152	0.042	0.233	1.180	0.175	0.118	3.622	0.197	0.145	0.212	1.340	0.591	0.915	0.23	42,360	0.0047	0.27
0520 - 141218-01-04	1.270	0.198	0.102	0.696	0.094	0.240	1.280	0.214	0.149	7.659	0.423	0.194	0.245	1.570	0.836	1.010	0.33	34,700	0.0039	0.33
0520 - 141218-01-05	1.190	0.168	0.070	0.072	0.017	0.247	1.250	0.202	0.125	5.950	0.327	0.155	0.239	1.700	0.583	0.911	0.24	32,500	0.0036	0.22
0535 - 141219-01-01	1.290	0.170	0.085	0.096	0.106	0.228	1.250	0.207	0.129	3.014	0.160	0.170	0.260	1.580	0.603	0.934	0.27	33,080	0.0037	0.26
0535 - 141219-01-02	1.290	0.188	0.087	0.236	0.106	0.257	1.310	0.216	0.116	3.676	0.194	0.185	0.300	2.120	0.859	0.987	0.32	35,020	0.0039	0.31
0535 - 141219-01-03	1.260	0.191	0.095	0.041	0.073	0.235	1.190	0.207	0.141	1.692	0.090	0.175	0.306	0.909	0.390	1.020	0.21	34,440	0.0038	0.21
0549 - 141222-01-01	1.430	0.214	0.094	0.242	0.067	0.238	1.310	0.246	0.194	3.434	0.184	0.166	0.297	1.650	0.915	1.140	0.39	34,520	0.0038	0.38
0549 - 141222-01-02	1.290	0.186	0.084	0.430	0.085	0.242	1.210	0.197	0.128	3.449	0.184	0.175	0.276	1.690	0.602	0.936	0.27	35,300	0.0039	0.27
0549 - 141222-01-03	1.280	0.174	0.067	0.056	0.091	0.235	1.220	0.174	0.140	5.567	0.307	0.157	0.249	1.330	0.577	0.891	0.27	36,560	0.0041	0.28
0644 - 150112-01-01	1.310	0.193	0.094	0.449	0.059	0.234	1.180	0.189	0.120	5.903	0.326	0.181	0.272	1.070	0.315	0.880	0.28	30,060	0.0033	0.24
0644 - 150112-01-02	1.240	0.183	0.084	0.196	0.033	0.243	1.200	0.191	0.129	5.641	0.310	0.171	0.224	1.580	0.717	0.897	0.24	29,720	0.0033	0.20
0653 - 150113-01-01	1.390	0.199	0.091	0.175	0.069	0.248	1.220	0.215	0.149	1.983	0.094	0.163	0.346	2.080	0.944	1.060	0.31	28,800	0.0032	0.25
0653 - 150113-01-02	1.400	0.184	0.068	1.140	0.316	0.263	1.280	0.177	0.105	4.780	0.261	0.114	0.185	1.600	0.530	0.784	0.40	31,320	0.0035	0.36
0653 - 150113-01-03	1.310	0.180	0.085	0.426	0.080	0.245	1.220	0.190	0.119	3.714	0.201	0.169	0.274	1.470	0.553	0.929	0.28	31,360	0.0035	0.25
0653 - 150113-01-04	1.410	0.197	0.073	0.330	0.186	0.266	1.410	0.225	0.168	4.992	0.273	0.199	0.294	1.650	0.672	1.000	0.44	35,300	0.0039	0.44
0672 - 150114-01-01	1.210	0.193	0.106	0.705	0.078	0.242	1.380	0.247	0.178	5.540	0.306	0.186	0.248	1.090	0.414	1.250	0.33	34,780	0.0039	0.33
0672 - 150114-01-02	1.270	0.191	0.088	0.139	0.113	0.249	1.180	0.210	0.172	3.712	0.205	0.178	0.304	0.775	0.439	1.210	0.23	33,020	0.0037	0.21
0672 - 150114-01-03	1.340	0.179	0.071	1.320	0.289	0.244	1.180	0.187	0.125	4.557	0.251	0.169	0.258	1.150	0.351	0.845	0.32	31,340	0.0035	0.29
0672 - 150114-01-04	1.320	0.188	0.083	0.454	0.066	0.242	1.230	0.189	0.121	5.477	0.301	0.145	0.232	1.550	0.559	0.838	0.31	33,420	0.0037	0.29
0672 - 150114-01-05	1.220	0.187	0.098	0.509	0.071	0.256	1.090	0.191	0.148	5.900	0.325	0.172	0.254	1.520	0.610	0.921	0.19	34,220	0.0038	0.18
0684 - 150115-01-01	1.210	0.185	0.091	0.343	0.053	0.239	1.150	0.189	0.099	6.832	0.377	0.192	0.227	1.540	0.481	0.986	0.21	31,700	0.0035	0.19
0684 - 150115-01-02	1.050	0.148	0.069	0.539	0.084	0.240	1.110	0.178	0.105	5.428	0.299	0.160	0.203	1.380	0.481	0.890	0.12	32,480	0.0036	0.11
0684 - 150115-01-03	1.390	0.211	0.094	-0.182	0.068	0.243	1.350	0.241	0.145	5.649	0.312	0.196	0.256	1.120	0.756	1.260	0.39	32,700	0.0036	0.36
0684 - 150115-01-04	1.450	0.197	0.083	0.313	0.097	0.240	1.350	0.203	0.117	7.241	0.399	0.161	0.226	1.060	0.320	0.866	0.44	30,980	0.0034	0.39
1277 - 150323-01-01	0.565	0.090	0.048	0.507	0.065	0.215	0.575	0.095	0.086	6.854	0.378	0.135	0.152	1.060	0.242	0.560	0.07	33,510	0.0037	0.07
1277 - 150323-01-02	0.777	0.111	0.060	0.242	0.074	0.227	0.671	0.127	0.078	9.446	0.519	0.152	0.185	1.210	0.478	0.715	0.08	33,160	0.0037	0.07

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Attachment 1 Reuse Stockpile 8a Sample Data and Calculated SOF Values																				
Sample ID	Ra-226 DCGL = 1.9 pCi/g Background = 1.07 pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample Uniform SOF (unweighted)	Loaded Truck Wt (lbs)	Weighting Factor	Weighted SOF
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Inferred Result	Result	Error	MDC	Result	Error	MDC				
1277 - 150323-01-03	0.769	0.110	0.061	0.173	0.118	0.202	0.587	0.103	0.080	5.635	0.309	0.110	0.154	1.710	0.559	0.620	0.05	33,460	0.0037	0.05
1277 - 150323-01-04	0.636	0.096	0.067	0.208	0.066	0.220	0.653	0.126	0.085	8.592	0.474	0.139	0.164	1.370	0.489	0.623	0.07	39,480	0.0044	0.08
1277 - 150323-01-05	0.689	0.101	0.047	1.150	0.110	0.215	0.707	0.125	0.090	8.477	0.468	0.148	0.172	1.420	0.457	0.667	0.11	36,790	0.0041	0.11
1277 - 150323-01-06	0.686	0.110	0.061	0.319	0.087	0.204	0.699	0.124	0.091	6.807	0.376	0.138	0.179	1.360	0.410	0.625	0.06	37,410	0.0042	0.07
1277 - 150323-01-07	0.635	0.096	0.046	0.702	0.073	0.220	0.590	0.104	0.084	6.522	0.360	0.133	0.155	1.080	0.242	0.573	0.07	40,020	0.0045	0.09
1277 - 150323-01-08	0.634	0.092	0.044	0.588	0.150	0.222	0.630	0.117	0.078	7.996	0.441	0.173	0.184	1.240	0.401	0.743	0.08	33,290	0.0037	0.08
1293 - 150324-01-01	0.749	0.113	0.055	0.694	0.180	0.218	0.663	0.127	0.115	10.374	0.573	0.167	0.185	1.920	0.618	0.714	0.10	31,920	0.0036	0.09
1309 - 150325-01-01	0.641	0.111	0.059	0.760	0.179	0.213	0.715	0.131	0.091	13.040	0.719	0.183	0.208	1.990	0.690	0.787	0.12	38,150	0.0042	0.13
1482 - 150410-01-01	1.260	0.175	0.066	0.255	0.156	0.241	1.010	0.154	0.112	1.945	0.102	0.139	0.229	1.170	0.538	0.831	0.13	39,220	0.0044	0.15
1482 - 150410-01-02	1.070	0.163	0.077	0.271	0.106	0.229	0.994	0.183	0.097	2.672	0.145	0.159	0.202	1.010	0.492	0.761	0.03	35,660	0.0040	0.03
1482 - 150410-01-03	1.160	0.167	0.081	0.283	0.045	0.229	1.270	0.193	0.100	1.893	0.101	0.143	0.251	0.913	0.336	0.851	0.21	36,080	0.0040	0.22
1482 - 150410-01-04	1.090	0.150	0.059	3.440	0.556	0.224	1.070	0.153	0.086	3.681	0.201	0.152	0.225	1.270	0.356	0.853	0.21	36,780	0.0041	0.22
1482 - 150410-01-05	1.010	0.156	0.074	0.675	0.151	0.225	0.721	0.167	0.149	2.715	0.146	0.179	0.273	1.200	0.355	0.931	0.05	36,240	0.0040	0.05
1537 - 150415-01-01	1.130	0.155	0.068	0.164	0.031	0.207	1.220	0.184	0.113	2.079	0.109	0.129	0.261	1.230	0.327	0.838	0.17	41,720	0.0046	0.20
1537 - 150415-01-02	0.737	0.150	0.166	0.355	0.054	0.206	1.070	0.195	0.187	1.438	0.075	0.171	0.286	0.922	0.415	1.210	0.06	42,480	0.0047	0.08
1537 - 150415-01-03	1.360	0.181	0.072	0.199	0.093	0.215	1.250	0.195	0.112	2.314	0.124	0.161	0.263	1.060	0.322	0.883	0.31	44,420	0.0049	0.39
1537 - 150415-01-04	1.110	0.157	0.068	0.316	0.037	0.211	1.240	0.203	0.116	2.365	0.124	0.150	0.237	1.370	0.554	0.836	0.18	45,820	0.0051	0.23
1537 - 150415-01-05	1.100	0.166	0.076	0.218	0.068	0.213	1.020	0.180	0.145	2.306	0.123	0.165	0.280	1.130	0.362	1.130	0.06	40,000	0.0045	0.06
1537 - 150415-01-06	1.160	0.166	0.072	0.273	0.028	0.221	1.070	0.160	0.098	2.037	0.106	0.140	0.170	1.330	0.683	0.885	0.11	48,360	0.0054	0.16
1537 - 150415-01-07	1.160	0.164	0.053	0.537	0.072	0.205	1.050	0.209	0.130	2.846	0.154	0.154	0.289	1.120	0.341	0.924	0.12	42,740	0.0048	0.14
1537 - 150415-01-08	1.240	0.172	0.077	0.379	0.052	0.204	1.200	0.186	0.135	3.018	0.161	0.152	0.253	1.510	0.570	0.861	0.23	35,960	0.0040	0.24
1537 - 150415-01-09	1.090	0.154	0.065	0.352	0.079	0.209	1.170	0.175	0.113	3.725	0.201	0.140	0.188	1.550	0.554	0.816	0.14	44,480	0.0050	0.18
2039 - 150529-01-01	1.040	0.147	0.077	3.430	0.381	0.236	1.160	0.181	0.108	13.650	0.754	0.201	0.236	2.600	0.672	0.933	0.32	36,580	0.0041	0.33
2039 - 150529-01-02	1.160	0.180	0.069	3.940	0.364	0.228	1.150	0.201	0.134	13.192	0.728	0.240	0.262	3.010	0.993	1.140	0.38	38,960	0.0043	0.42
2039 - 150529-01-03	1.170	0.174	0.091	2.760	0.264	0.241	1.170	0.232	0.131	5.377	0.291	0.234	0.267	2.150	0.715	1.040	0.29	39,100	0.0044	0.33
Average	1.13	0.17	0.08	1.20	0.18	0.23	1.12	0.19	0.12	4.88	0.27	0.16	0.24	1.45	0.56	0.93	0.22	-	-	0.22
Minimum	0.57	0.09	0.04	-0.18	0.02	0.20	0.58	0.10	0.05	1.04	0.05	0.10	0.14	0.59	0.24	0.56	0.03	-	-	0.03
Maximum	1.72	0.24	0.25	9.56	1.04	0.29	1.51	0.31	0.34	21.51	1.18	0.25	0.37	3.43	0.99	2.13	0.62	-	-	0.72

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Attachment 2 Reuse Stockpile 8b Sample Data and Calculated SOF Values																				
Sample ID	Ra-226 DCGL = 1.9 pCi/g Background = 1.07pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample Uniform SOF (unweighted)	Loaded Truck Wt (lbs)	Weighting Factor	Weighted SOF
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Inferred Result	Result	Error	MDC	Result	Error	MDC				
9566-RU-140905-07-01	0.973	0.142	0.067	0.436	0.055	0.221	1.010	0.166	0.113	3.578	0.195	0.157	0.231	1.260	0.506	0.855	0.05	17,970	0.0043	0.02
9566-RU-140905-07-02	1.020	0.158	0.097	0.183	0.085	0.213	1.020	0.184	0.122	3.280	0.178	0.158	0.265	1.270	0.365	0.961	0.05	30,090	0.0071	0.03
9566-RU-140905-07-03	1.060	0.174	0.085	0.087	0.044	0.224	1.200	0.208	0.121	3.416	0.183	0.207	0.317	1.560	0.669	1.020	0.13	34,180	0.0081	0.12
9566-RU-140905-07-04	1.170	0.168	0.071	0.080	0.048	0.215	1.270	0.185	0.149	2.540	0.131	0.144	0.250	1.700	0.810	0.989	0.22	40,270	0.0095	0.22
9567-RU-140908-07-01	1.070	0.159	0.062	0.752	0.126	0.190	1.140	0.220	0.116	3.031	0.163	0.167	0.264	1.330	0.348	0.853	0.13	43,760	0.0104	0.14
9567-RU-140908-07-02	1.220	0.180	0.074	0.207	0.090	0.210	1.070	0.174	0.110	3.170	0.172	0.150	0.240	1.230	0.583	0.899	0.15	38,110	0.0090	0.15
9567-RU-140908-07-03	1.150	0.176	0.098	0.085	0.011	0.208	1.300	0.205	0.140	3.031	0.160	0.188	0.299	1.750	0.719	0.989	0.22	36,220	0.0086	0.21
9567-RU-140908-07-04	1.210	0.186	0.080	0.088	0.067	0.200	1.230	0.223	0.125	3.480	0.190	0.200	0.316	1.200	0.577	1.050	0.22	35,800	0.0085	0.20
9567-RU-140908-07-05	1.040	0.153	0.071	0.562	0.122	0.206	1.060	0.198	0.138	2.079	0.109	0.155	0.260	1.210	0.541	0.835	0.07	38,170	0.0090	0.07
9567-RU-140908-07-06	1.250	0.189	0.082	0.347	0.035	0.211	1.220	0.233	0.145	4.346	0.238	0.159	0.244	1.350	0.627	1.000	0.25	39,720	0.0094	0.26
9567-RU-140908-07-07	1.310	0.197	0.095	0.057	0.028	0.208	1.270	0.206	0.174	2.732	0.145	0.175	0.293	1.420	0.609	0.946	0.29	37,690	0.0089	0.28
9567-RU-140908-07-08	1.100	0.194	0.111	0.189	0.065	0.204	1.320	0.239	0.121	3.059	0.167	0.182	0.292	1.030	0.406	1.280	0.21	32,640	0.0077	0.17
9567-RU-140908-07-09	1.170	0.185	0.089	0.044	0.075	0.207	1.040	0.198	0.173	2.524	0.134	0.177	0.292	1.320	0.632	1.060	0.10	43,040	0.0102	0.11
9567-RU-140908-07-10	1.110	0.168	0.080	0.058	0.089	0.204	1.190	0.191	0.147	2.289	0.120	0.164	0.260	1.410	0.597	0.914	0.14	43,620	0.0103	0.16
9604-RU-140908-07-11	1.440	0.214	0.097	-0.041	0.060	0.216	1.200	0.214	0.142	1.999	0.102	0.145	0.344	1.510	0.559	1.040	0.32	44,330	0.0105	0.36
9604-RU-140908-07-12	1.040	0.162	0.093	-0.056	0.065	0.216	1.070	0.198	0.118	3.264	0.179	0.150	0.248	0.970	0.559	0.935	0.06	41,570	0.0098	0.06
9604-RU-140908-07-13	1.140	0.168	0.082	-0.004	0.064	0.223	1.180	0.195	0.112	3.344	0.181	0.131	0.250	1.320	0.557	0.848	0.16	44,170	0.0104	0.18
9604-RU-140908-07-14	1.100	0.194	0.114	-0.050	0.044	0.225	1.160	0.204	0.166	1.675	0.088	0.157	0.314	0.948	0.375	1.070	0.11	40,640	0.0096	0.12
9604-RU-140908-07-15	1.320	0.227	0.124	-0.041	0.011	0.218	1.460	0.302	0.152	2.861	0.151	0.161	0.314	1.600	0.918	1.170	0.39	43,570	0.0103	0.43
9604-RU-140908-07-16	1.460	0.198	0.090	-0.044	0.042	0.219	1.280	0.201	0.139	3.229	0.173	0.176	0.291	1.510	0.637	0.976	0.37	40,080	0.0095	0.38
9604-RU-140908-07-17	1.230	0.197	0.094	-0.057	0.070	0.217	1.440	0.255	0.113	4.280	0.236	0.180	0.253	1.030	0.493	1.370	0.34	34,920	0.0083	0.30
9604-RU-140908-07-18	1.270	0.182	0.084	-0.044	0.077	0.215	1.220	0.175	0.125	3.278	0.174	0.192	0.280	1.670	0.623	0.938	0.25	35,380	0.0084	0.22
9605-RU-140909-07-01	1.270	0.202	0.108	0.082	0.029	0.229	1.100	0.234	0.162	2.019	0.103	0.196	0.327	1.450	0.563	1.080	0.18	43,720	0.0103	0.20
9605-RU-140909-07-02	1.070	0.155	0.074	0.046	0.012	0.229	1.020	0.174	0.109	3.561	0.196	0.138	0.233	0.946	0.530	0.837	0.04	44,280	0.0105	0.04
9605-RU-140909-07-03	1.120	0.198	0.110	0.016	0.060	0.230	1.080	0.215	0.195	4.396	0.242	0.194	0.259	1.140	0.355	1.430	0.10	41,050	0.0097	0.11
9605-RU-140909-07-04	1.160	0.181	0.088	0.007	0.065	0.233	1.170	0.196	0.149	1.589	0.077	0.177	0.302	1.650	0.610	0.979	0.15	43,090	0.0102	0.17
9605-RU-140909-07-05	1.100	0.157	0.069	0.036	0.048	0.232	1.130	0.225	0.154	2.845	0.153	0.146	0.249	1.230	0.318	0.836	0.11	42,720	0.0101	0.12
9605-RU-140909-07-06	1.250	0.208	0.114	0.063	0.080	0.251	1.150	0.213	0.091	0.974	0.046	0.119	0.313	1.100	0.820	1.100	0.18	31,840	0.0075	0.15
9605-RU-140909-07-07	1.080	0.185	0.149	0.131	0.144	0.222	1.190	0.231	0.191	2.675	0.142	0.194	0.297	1.420	0.828	1.100	0.13	42,180	0.0100	0.14
9605-RU-140909-07-08	1.350	0.188	0.079	0.101	0.053	0.244	1.230	0.194	0.113	3.506	0.192	0.124	0.206	1.110	0.624	0.986	0.29	40,720	0.0096	0.31
9605-RU-140909-07-09	1.170	0.185	0.098	0.009	0.013	0.251	1.290	0.270	0.156	1.604	0.084	0.199	0.317	0.954	0.424	1.260	0.21	41,160	0.0097	0.22
9605-RU-140909-07-10	0.934	0.147	0.085	0.042	0.042	0.225	1.210	0.197	0.129	5.029	0.275	0.181	0.272	1.630	0.861	1.100	0.15	41,610	0.0098	0.16
9605-RU-140909-07-11	1.140	0.189	0.095	0.011	0.041	0.245	1.250	0.244	0.106	2.986	0.160	0.178	0.291	1.430	0.585	1.330	0.19	36,210	0.0086	0.17

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Attachment 2 Reuse Stockpile 8b Sample Data and Calculated SOF Values																				
Sample ID	Ra-226 DCGL = 1.9 pCi/g Background = 1.07pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample Uniform SOF (unweighted)	Loaded Truck Wt (lbs)	Weighting Factor	Weighted SOF
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Inferred Result	Result	Error	MDC	Result	Error	MDC				
9605-RU-140909-07-12	1.020	0.146	0.066	0.059	0.053	0.229	1.050	0.166	0.124	2.681	0.143	0.172	0.247	1.300	0.557	0.842	0.05	41,510	0.0098	0.05
9605-RU-140909-07-13	1.310	0.203	0.101	0.046	0.029	0.227	1.070	0.198	0.164	2.103	0.111	0.176	0.307	1.170	0.586	1.030	0.18	39,170	0.0093	0.18
9605-RU-140909-07-14	1.170	0.167	0.073	0.066	0.054	0.248	1.140	0.169	0.122	2.596	0.137	0.131	0.239	1.410	0.516	0.840	0.15	40,160	0.0095	0.15
9605-RU-140909-07-15	1.160	0.188	0.099	0.022	0.005	0.232	1.310	0.270	0.195	2.445	0.131	0.147	0.251	1.130	0.359	1.090	0.22	37,940	0.0090	0.22
9605-RU-140909-07-16	1.150	0.172	0.089	0.023	0.096	0.233	1.270	0.196	0.117	2.626	0.134	0.167	0.274	1.910	0.676	0.968	0.21	42,230	0.0100	0.22
9606-RU-140910-07-01	1.240	0.196	0.102	0.027	0.007	0.232	1.200	0.205	0.150	2.577	0.136	0.207	0.316	1.450	0.945	1.120	0.21	43,520	0.0103	0.24
9606-RU-140910-07-02	1.100	0.156	0.070	0.017	0.026	0.229	1.060	0.166	0.133	4.709	0.259	0.137	0.197	1.300	0.513	0.876	0.08	43,050	0.0102	0.09
9606-RU-140910-07-03	1.130	0.188	0.099	-0.002	0.014	0.235	1.140	0.216	0.201	3.858	0.212	0.162	0.278	1.090	0.557	1.250	0.13	36,250	0.0086	0.12
9606-RU-140910-07-04	1.300	0.184	0.086	-0.012	0.045	0.222	1.310	0.199	0.139	3.056	0.163	0.152	0.268	1.500	0.564	0.941	0.30	36,490	0.0086	0.28
9606-RU-140910-07-05	1.050	0.173	0.100	0.013	0.071	0.222	1.210	0.206	0.168	3.725	0.203	0.187	0.286	1.290	0.602	1.040	0.14	44,150	0.0104	0.15
9606-RU-140910-07-06	1.140	0.164	0.089	-0.032	0.071	0.219	1.180	0.192	0.116	4.082	0.222	0.169	0.275	1.510	0.607	0.917	0.16	42,050	0.0099	0.17
9606-RU-140910-07-07	1.020	0.196	0.128	-0.036	0.077	0.217	1.070	0.195	0.173	1.712	0.091	0.179	0.299	0.861	0.650	1.050	0.05	42,070	0.0100	0.05
9606-RU-140910-07-08	1.210	0.171	0.077	-0.023	0.061	0.228	1.160	0.187	0.122	3.692	0.196	0.145	0.241	1.900	0.577	0.936	0.19	41,850	0.0099	0.20
9606-RU-140910-07-09	1.210	0.196	0.082	0.013	0.034	0.227	1.120	0.228	0.174	1.410	0.067	0.184	0.329	1.550	0.611	1.330	0.15	38,090	0.0090	0.15
9607-RU-140911-07-01	0.958	0.152	0.074	-0.012	0.017	0.220	1.030	0.181	0.103	2.330	0.123	0.181	0.276	1.270	0.841	1.040	0.04	43,840	0.0104	0.04
9607-RU-140911-07-02	1.350	0.210	0.085	-0.004	0.091	0.220	1.120	0.234	0.179	2.518	0.131	0.185	0.323	1.610	0.549	1.080	0.23	43,130	0.0102	0.26
9607-RU-140911-07-03	1.180	0.190	0.096	-0.003	0.076	0.226	1.050	0.157	0.389	3.122	0.171	0.162	0.256	0.982	0.404	1.090	0.11	39,630	0.0094	0.11
9607-RU-140911-07-04	1.170	0.184	0.079	0.054	0.086	0.219	1.210	0.221	0.117	3.655	0.195	0.169	0.300	1.790	0.883	1.120	0.19	40,520	0.0096	0.20
9607-RU-140911-07-05	1.150	0.182	0.090	-0.014	0.022	0.215	1.250	0.205	0.108	1.468	0.075	0.185	0.297	1.090	0.620	0.978	0.18	45,890	0.0109	0.21
9607-RU-140911-07-06	1.220	0.190	0.091	-0.016	0.022	0.215	1.130	0.227	0.161	3.651	0.199	0.159	0.226	1.280	0.547	1.380	0.17	42,410	0.0100	0.19
9607-RU-140911-07-07	1.060	0.170	0.083	-0.048	0.044	0.223	1.150	0.212	0.161	2.430	0.129	0.194	0.305	1.270	0.627	0.973	0.10	37,850	0.0090	0.09
9607-RU-140911-07-08	1.170	0.187	0.084	-0.045	0.057	0.223	1.200	0.195	0.119	2.827	0.153	0.188	0.292	1.160	0.511	1.010	0.18	39,950	0.0095	0.18
9607-RU-140911-07-09	1.190	0.189	0.091	-0.049	0.028	0.209	1.230	0.202	0.155	2.085	0.105	0.216	0.314	1.690	0.887	1.100	0.20	41,410	0.0098	0.21
9607-RU-140911-07-10	1.170	0.176	0.075	-0.016	0.022	0.218	1.100	0.175	0.138	3.579	0.190	0.153	0.260	1.910	0.874	1.020	0.14	40,750	0.0096	0.14
9669-RU-140922-07-01	1.000	0.145	0.091	-0.014	0.055	0.228	1.160	0.178	0.098	2.842	0.150	0.135	0.173	1.590	0.783	0.924	0.11	42,910	0.0102	0.12
9669-RU-140922-07-02	1.220	0.188	0.077	0.005	0.033	0.223	1.100	0.212	0.192	4.811	0.265	0.197	0.301	1.210	0.457	1.350	0.17	40,810	0.0097	0.17
9669-RU-140922-07-03	1.160	0.172	0.081	-0.042	0.098	0.227	1.020	0.183	0.121	2.521	0.130	0.157	0.259	1.670	0.662	0.895	0.08	42,200	0.0100	0.09
9669-RU-140922-07-04	0.972	0.153	0.085	-0.015	0.045	0.221	1.070	0.170	0.158	3.953	0.217	0.157	0.255	1.130	0.326	0.814	0.07	40,320	0.0095	0.07
9669-RU-140922-07-05	1.340	0.211	0.088	-0.021	0.091	0.218	1.250	0.220	0.180	4.395	0.241	0.182	0.310	1.310	0.604	1.340	0.30	41,110	0.0097	0.32
9669-RU-140922-07-06	1.260	0.173	0.067	-0.008	0.050	0.213	1.240	0.197	0.140	2.498	0.131	0.143	0.254	1.470	0.636	0.980	0.24	37,630	0.0089	0.23
9669-RU-140922-07-07	1.270	0.219	0.115	-0.045	0.055	0.211	1.130	0.208	0.213	1.730	0.091	0.177	0.333	0.981	0.478	1.370	0.19	37,990	0.0090	0.18
9669-RU-140922-07-08	1.320	0.209	0.106	-0.051	0.021	0.213	1.520	0.263	0.098	3.868	0.208	0.187	0.346	1.720	0.772	1.210	0.43	41,170	0.0097	0.45
9669-RU-140922-07-09	1.200	0.186	0.122	-0.069	0.077	0.210	1.200	0.201	0.163	3.018	0.161	0.155	0.287	1.470	0.638	0.966	0.20	36,210	0.0086	0.18

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Attachment 2 Reuse Stockpile 8b Sample Data and Calculated SOF Values																				
Sample ID	Ra-226 DCGL = 1.9 pCi/g Background = 1.07pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample Uniform SOF (unweighted)	Loaded Truck Wt (lbs)	Weighting Factor	Weighted SOF
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Inferred Result	Result	Error	MDC	Result	Error	MDC				
9684-RU-140923-07-01	1.160	0.188	0.103	0.003	0.046	0.222	1.210	0.217	0.203	3.297	0.175	0.220	0.319	1.680	0.700	1.060	0.18	36,170	0.0086	0.17
9684-RU-140923-07-02	1.190	0.177	0.079	0.073	0.038	0.221	1.150	0.186	0.182	2.675	0.142	0.174	0.269	1.440	0.645	0.987	0.17	36,810	0.0087	0.16
9684-RU-140923-07-03	1.210	0.173	0.079	0.004	0.033	0.224	1.150	0.181	0.123	2.596	0.137	0.155	0.260	1.430	0.599	1.170	0.17	34,880	0.0083	0.15
9684-RU-140923-07-04	1.380	0.226	0.102	0.017	0.064	0.226	1.230	0.229	0.147	3.643	0.200	0.175	0.299	1.060	0.442	1.230	0.31	34,200	0.0081	0.27
9684-RU-140923-07-05	1.270	0.198	0.095	-0.005	0.026	0.218	1.090	0.215	0.151	3.071	0.167	0.227	0.314	1.140	0.587	1.070	0.18	36,330	0.0086	0.16
9684-RU-140923-07-06	1.110	0.170	0.080	-0.001	0.055	0.219	1.200	0.198	0.154	3.297	0.175	0.144	0.247	1.770	0.555	0.919	0.15	36,270	0.0086	0.14
9684-RU-140923-07-07	1.020	0.171	0.085	-0.004	0.072	0.225	1.250	0.221	0.138	2.568	0.137	0.157	0.288	1.300	0.743	1.200	0.15	34,730	0.0082	0.13
9684-RU-140923-07-08	1.090	0.155	0.079	0.000	0.048	0.224	1.060	0.191	0.155	2.250	0.118	0.148	0.244	1.380	0.598	0.919	0.06	35,040	0.0083	0.06
9684-RU-140923-07-09	1.030	0.164	0.081	0.001	0.028	0.215	1.120	0.215	0.125	1.345	0.069	0.177	0.298	1.010	0.591	0.934	0.07	40,130	0.0095	0.08
9684-RU-140923-07-10	1.060	0.163	0.079	0.018	0.049	0.216	1.120	0.191	0.122	1.837	0.094	0.131	0.256	1.360	0.578	0.902	0.08	39,470	0.0093	0.08
9684-RU-140923-07-11	1.320	0.211	0.088	0.007	0.076	0.216	1.200	0.216	0.156	1.765	0.089	0.176	0.280	1.460	0.712	1.140	0.25	38,150	0.0090	0.24
9684-RU-140923-07-12	1.190	0.177	0.102	0.027	0.082	0.209	1.310	0.212	0.161	3.466	0.187	0.168	0.275	1.490	0.795	1.040	0.25	30,500	0.0072	0.19
9684-RU-140923-07-13	1.160	0.170	0.095	-0.008	0.038	0.222	1.140	0.174	0.131	1.823	0.096	0.197	0.272	1.050	0.322	0.939	0.13	34,140	0.0081	0.12
9684-RU-140923-07-14	1.270	0.189	0.090	-0.012	0.035	0.217	1.370	0.216	0.158	3.033	0.161	0.174	0.278	1.560	0.638	0.998	0.32	35,350	0.0084	0.29
9684-RU-140923-07-15	1.350	0.207	0.075	0.019	0.052	0.215	1.190	0.249	0.151	2.306	0.123	0.164	0.268	1.130	0.601	1.190	0.26	32,950	0.0078	0.22
9695-RU-140924-07-01	1.230	0.183	0.085	0.020	0.059	0.221	1.080	0.166	0.106	2.287	0.123	0.165	0.257	1.020	0.469	0.935	0.15	39,520	0.0093	0.15
9695-RU-140924-07-02	1.180	0.192	0.100	-0.012	0.076	0.223	1.270	0.203	0.132	1.939	0.100	0.156	0.318	1.290	0.683	1.070	0.21	40,550	0.0096	0.22
9705-RU-140925-07-01	1.060	0.179	0.094	0.048	0.131	0.229	1.240	0.212	0.134	3.002	0.162	0.190	0.317	1.300	0.579	1.050	0.15	41,580	0.0098	0.16
9705-RU-140925-07-02	1.190	0.169	0.079	0.000	0.011	0.224	1.210	0.207	0.109	2.041	0.107	0.165	0.296	1.230	0.734	1.170	0.19	40,340	0.0095	0.19
9705-RU-140925-07-03	1.060	0.161	0.079	0.000	0.076	0.226	1.130	0.185	0.135	2.826	0.150	0.166	0.249	1.460	0.573	1.000	0.09	39,010	0.0092	0.09
9705-RU-140925-07-04	1.120	0.186	0.104	-0.008	0.079	0.223	1.270	0.241	0.192	2.531	0.135	0.198	0.299	1.230	0.974	1.220	0.18	38,570	0.0091	0.18
9705-RU-140925-07-05	1.070	0.161	0.082	0.010	0.048	0.231	1.160	0.190	0.136	2.502	0.135	0.149	0.244	1.050	0.351	0.833	0.10	39,320	0.0093	0.10
9705-RU-140925-07-06	1.120	0.176	0.090	-0.004	0.047	0.232	1.160	0.217	0.170	2.520	0.138	0.171	0.285	0.802	0.362	1.010	0.13	41,560	0.0098	0.13
9705-RU-140925-07-07	0.854	0.130	0.092	0.024	0.070	0.222	1.090	0.169	0.146	2.231	0.119	0.149	0.229	1.110	0.568	0.892	0.07	41,570	0.0098	0.07
9731-RU-140930-07-01	1.030	0.147	0.072	-0.001	0.047	0.226	1.130	0.188	0.119	2.632	0.142	0.143	0.241	1.100	0.531	0.827	0.09	37,230	0.0088	0.08
9731-RU-140930-07-02	1.260	0.185	0.073	-0.011	0.023	0.232	1.260	0.221	0.123	1.743	0.093	0.174	0.291	0.904	0.442	1.270	0.25	38,990	0.0092	0.25
9758-RU-141002-07-01	1.200	0.190	0.090	0.043	0.110	0.212	1.150	0.215	0.146	3.133	0.170	0.149	0.219	1.230	0.668	1.050	0.17	37,060	0.0088	0.16
9758-RU-141002-07-02	1.190	0.164	0.067	0.234	0.171	0.206	1.070	0.175	0.129	2.368	0.125	0.153	0.251	1.280	0.569	0.874	0.13	40,270	0.0095	0.13
9758-RU-141002-07-03	1.240	0.182	0.077	0.090	0.035	0.207	1.130	0.200	0.143	3.136	0.168	0.157	0.259	1.500	0.730	0.943	0.19	40,170	0.0095	0.19
9758-RU-141002-07-04	1.070	0.170	0.080	-0.039	0.083	0.209	1.150	0.188	0.168	2.306	0.123	0.192	0.314	1.140	0.362	1.050	0.10	44,330	0.0105	0.11
9783-RU-141006-07-01	1.150	0.172	0.073	-0.001	0.088	0.214	1.130	0.222	0.142	2.727	0.143	0.172	0.312	1.650	0.636	0.994	0.13	39,690	0.0094	0.14
9783-RU-141006-07-02	1.100	0.187	0.098	0.035	0.083	0.212	1.230	0.206	0.152	3.453	0.185	0.197	0.321	1.590	0.574	1.140	0.16	37,520	0.0089	0.16
9783-RU-141006-07-03	1.230	0.195	0.102	0.003	0.041	0.203	1.070	0.236	0.161	3.012	0.163	0.127	0.252	1.200	0.593	1.310	0.15	37,490	0.0089	0.14

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Attachment 2 Reuse Stockpile 8b Sample Data and Calculated SOF Values																				
Sample ID	Ra-226 DCGL = 1.9 pCi/g Background = 1.07pCi/g			Tc-99 DCGL = 25.1 pCi/g			Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g			U-234 DCGL = 195.4 pCi/g	U-235 DCGL = 51.6 pCi/g			U-238 DCGL = 168.8 pCi/g			Sample Uniform SOF (unweighted)	Loaded Truck Wt (lbs)	Weighting Factor	Weighted SOF
	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Inferred Result	Result	Error	MDC	Result	Error	MDC				
9783-RU-141006-07-04	1.270	0.193	0.090	0.006	0.044	0.211	1.100	0.190	0.124	2.437	0.130	0.170	0.282	1.240	0.538	0.966	0.18	38,280	0.0091	0.17
9783-RU-141006-07-05	1.130	0.173	0.079	0.001	0.064	0.215	1.250	0.250	0.150	2.403	0.126	0.156	0.263	1.460	0.548	0.819	0.18	38,990	0.0092	0.18
9783-RU-141006-07-06	1.120	0.183	0.100	0.041	0.043	0.214	1.150	0.213	0.146	3.529	0.193	0.176	0.281	1.160	0.615	1.180	0.13	39,930	0.0094	0.13
9783-RU-141006-07-07	1.040	0.158	0.074	0.032	0.024	0.210	1.300	0.237	0.103	2.939	0.156	0.154	0.267	1.580	0.558	0.831	0.18	42,230	0.0100	0.19
9783-RU-141006-07-08	1.140	0.198	0.107	0.044	0.044	0.204	1.260	0.235	0.193	3.517	0.183	0.179	0.276	2.180	0.971	1.160	0.20	39,080	0.0092	0.20
9783-RU-141006-07-09	1.360	0.206	0.087	0.028	0.059	0.209	1.110	0.178	0.174	3.881	0.214	0.178	0.299	0.919	0.339	0.964	0.24	37,860	0.0090	0.23
9783-RU-141006-07-10	1.160	0.178	0.086	0.027	0.055	0.205	1.250	0.225	0.102	1.898	0.096	0.193	0.322	1.490	0.667	1.050	0.19	39,990	0.0095	0.20
9783-RU-141006-07-11	1.170	0.179	0.087	0.011	0.060	0.212	1.330	0.232	0.135	3.299	0.176	0.149	0.245	1.590	0.579	0.979	0.25	39,200	0.0093	0.25
9783-RU-141006-07-12	1.180	0.177	0.081	0.020	0.063	0.208	1.130	0.190	0.122	1.394	0.074	0.213	0.315	0.784	0.350	0.934	0.14	32,770	0.0078	0.11
Average	1.16	0.18	0.09	0.04	0.06	0.22	1.18	0.21	0.14	2.84	0.15	0.17	0.28	1.34	0.60	1.04	0.17	-	-	0.17
Minimum	0.85	0.13	0.06	-0.07	0.01	0.19	1.01	0.16	0.09	0.97	0.05	0.12	0.17	0.78	0.32	0.81	0.04	-	-	0.02
Maximum	1.46	0.23	0.15	0.75	0.17	0.25	1.52	0.30	0.39	5.03	0.28	0.23	0.35	2.18	0.97	1.43	0.43	-	-	0.45

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Attachment 3						
Box Counter Assay Results for Reuse Stockpile 8a and Reuse Stockpile 8b						
Sample Reuse Stockpile 8a	Ra-226 DCGL = 1.9 pCi/g Background = 0.9 pCi/g	Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g	U-238 DCGL = 168.8 pCi/g	Sample SOF (Uniform DCGL)
8959 - 140619-01-01	0.89 ± 0.13 (0.22)	0.93 ± 0.18 (0.33)	0.00	*(0.66)	*(11.08)	0.00
8959 - 140619-01-02	0.91 ± 0.13 (0.23)	1.15 ± 0.25 (0.34)	13.53	0.42 ± 0.37 (0.62)	*(11.88)	0.16
8959 - 140619-01-03	0.88 ± 0.13 (0.27)	1.20 ± 0.24 (0.34)	24.92	0.77 ± 0.35 (0.57)	*(11.17)	0.24
8959 - 140619-05-01	1.00 ± 0.11 (0.19)	0.88 ± 0.19 (0.30)	7.92	0.43 ± 0.25 (0.41)	2.77 ± 3.22 (5.31)	0.12
8959 - 140619-05-02	0.79 ± 0.10 (0.16)	0.78 ± 0.17 (0.28)	14.70	0.45 ± 0.20 (0.30)	*(8.35)	0.08
8959 - 140619-05-03	0.84 ± 0.11 (0.20)	*(0.49)	28.46	0.88 ± 0.31 (0.48)	*(9.97)	0.16
8977 - 140624-01-01	0.93 ± 0.13 (0.22)	1.06 ± 0.21 (0.28)	10.72	0.33 ± 0.21 (0.33)	*(9.73)	0.11
8977 - 140624-01-02	0.95 ± 0.13 (0.26)	0.99 ± 0.22 (0.32)	11.23	0.35 ± 0.26 (0.43)	*(11.43)	0.09
8977 - 140624-01-03	0.86 ± 0.12 (0.22)	0.90 ± 0.21 (0.32)	0.00	*(0.61)	*(10.68)	0.00
8977 - 140624-01-04	0.95 ± 0.13 (0.28)	0.94 ± 0.22 (0.32)	12.40	0.38 ± 0.30 (0.50)	*(11.35)	0.10
8977 - 140624-05-01	0.76 ± 0.10 (0.18)	0.85 ± 0.17 (0.24)	13.73	0.42 ± 0.25 (0.40)	*(8.65)	0.08
8977 - 140624-05-02	0.97 ± 0.11 (0.19)	0.87 ± 0.20 (0.34)	32.10	0.99 ± 0.26 (0.38)	*(9.90)	0.22
8977 - 140624-05-03	0.97 ± 0.11 (0.18)	0.78 ± 0.17 (0.28)	19.30	0.59 ± 0.25 (0.40)	*(8.83)	0.15
8986 - 140625-01-01	0.83 ± 0.11 (0.19)	0.94 ± 0.16 (0.29)	23.63	0.73 ± 0.26 (0.40)	*(9.12)	0.13
8986 - 140625-01-02	1.22 ± 0.13 (0.23)	0.95 ± 0.20 (0.29)	16.92	0.52 ± 0.30 (0.49)	*(10.31)	0.27
8986 - 140625-01-03	1.12 ± 0.12 (0.22)	0.86 ± 0.19 (0.30)	19.53	0.60 ± 0.30 (0.48)	*(10.14)	0.23
8986 - 140625-01-05	1.03 ± 0.11 (0.18)	0.97 ± 0.19 (0.27)	15.10	0.46 ± 0.25 (0.40)	*(8.73)	0.15
8999 - 140626-01-01	0.93 ± 0.11 (0.16)	0.81 ± 0.17 (0.26)	20.70	0.64 ± 0.28 (0.44)	*(8.47)	0.14
8999 - 140626-01-02	0.96 ± 0.09 (0.14)	*(0.43)	28.14	0.87 ± 0.29 (0.46)	*(8.94)	0.19
8999 - 140626-01-03	1.14 ± 0.14 (0.23)	1.07 ± 0.24 (0.35)	19.33	0.59 ± 0.41 (0.67)	*(12.11)	0.27
8999 - 140626-01-04	1.29 ± 0.14 (0.25)	0.88 ± 0.18 (0.34)	28.30	0.87 ± 0.38 (0.60)	*(10.98)	0.37
8999 - 140626-01-05	1.16 ± 0.14 (0.26)	*(0.49)	28.63	0.88 ± 0.32 (0.49)	*(10.60)	0.30
8999 - 140626-06-01	1.09 ± 0.13 (0.23)	0.96 ± 0.21 (0.35)	0.00	*(0.67)	*(10.99)	0.10
8999 - 140626-06-02	1.01 ± 0.13 (0.19)	*(0.49)	0.00	*(0.66)	*(10.04)	0.06
8999 - 140626-06-03	0.90 ± 0.11 (0.21)	1.04 ± 0.22 (0.34)	0.00	*(0.53)	*(9.71)	0.02
8999 - 140626-06-04	0.86 ± 0.11 (0.21)	1.07 ± 0.20 (0.32)	0.00	*(0.52)	*(9.40)	0.04
8999 - 140626-06-05	0.88 ± 0.11 (0.18)	0.97 ± 0.19 (0.25)	9.55	0.29 ± 0.12 (0.30)	*(9.15)	0.05
9010 - 140627-01-01	0.82 ± 0.10 (0.20)	1.04 ± 0.20 (0.30)	0.00	*(0.52)	*(9.63)	0.02
9010 - 140627-01-02	1.01 ± 0.12 (0.14)	1.08 ± 0.21 (0.30)	0.00	*(0.34)	*(10.38)	0.10

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Box Counter Assay Results for Reuse Stockpile 8a and Reuse Stockpile 8b						
Sample Reuse Stockpile 8a	Ra-226 DCGL = 1.9 pCi/g Background = 0.9 pCi/g	Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g	U-238 DCGL = 168.8 pCi/g	Sample SOF (Uniform DCGL)
9010 - 140627-01-03	0.97 ± 0.13 (0.22)	1.18 ± 0.18 (0.32)	0.00	*(0.54)	*(9.45)	0.12
9010 - 140627-01-04	0.86 ± 0.12 (0.18)	1.14 ± 0.21 (0.26)	0.00	*(0.56)	*(10.02)	0.07
9010 - 140627-01-05	1.09 ± 0.13 (0.19)	1.11 ± 0.23 (0.35)	0.00	*(0.68)	*(10.81)	0.15
9010 - 140627-01-06	1.13 ± 0.13 (0.23)	*(0.56)	0.00	*(0.44)	*(12.24)	0.12
9010 - 140627-01-07	1.06 ± 0.14 (0.27)	1.10 ± 0.21 (0.42)	0.00	*(0.74)	*(12.89)	0.13
9010 - 140627-06-01	0.95 ± 0.13 (0.28)	1.10 ± 0.21 (0.36)	10.24	0.32 ± 0.29 (0.47)	*(11.53)	0.13
9010 - 140627-06-02	0.89 ± 0.14 (0.24)	1.17 ± 0.24 (0.33)	0.00	*(0.72)	*(12.63)	0.09
9010 - 140627-06-03	0.98 ± 0.13 (0.20)	*(0.54)	0.00	*(0.70)	*(11.29)	0.04
9010 - 140627-06-04	0.98 ± 0.13 (0.25)	1.02 ± 0.22 (0.36)	26.49	0.82 ± 0.39 (0.63)	*(12.06)	0.21
9010 - 140627-06-05	0.82 ± 0.12 (0.22)	0.94 ± 0.20 (0.37)	0.00	*(0.60)	*(10.81)	0.00
9010 - 140627-06-06	0.84 ± 0.11 (0.21)	0.97 ± 0.22 (0.36)	0.00	*(0.51)	*(14.22)	0.00
9010 - 140627-06-07	1.00 ± 0.12 (0.18)	1.01 ± 0.21 (0.35)	0.00	*(0.55)	*(10.37)	0.06
9024 - 140630-01-01	0.97 ± 0.11 (0.20)	1.12 ± 0.21 (0.30)	0.00	*(0.50)	*(9.25)	0.10
9024 - 140630-01-02	0.84 ± 0.12 (0.19)	*(0.47)	0.00	*(0.52)	*(9.76)	0.00
9024 - 140630-01-03	0.84 ± 0.11 (0.20)	1.03 ± 0.20 (0.30)	0.00	*(0.52)	*(9.85)	0.02
9024 - 140630-01-04	1.01 ± 0.12 (0.15)	1.07 ± 0.17 (0.30)	0.00	*(0.53)	*(9.25)	0.09
9024 - 140630-01-05	1.01 ± 0.12 (0.16)	1.15 ± 0.22 (0.32)	0.00	*(0.59)	*(10.92)	0.13
9024 - 140630-01-06	1.03 ± 0.14 (0.28)	*(0.59)	0.00	*(0.66)	*(13.14)	0.07
9024 - 140630-01-07	0.86 ± 0.13 (0.28)	1.25 ± 0.21 (0.36)	0.00	*(0.71)	*(11.74)	0.13
9024 - 140630-01-08	0.85 ± 0.13 (0.27)	1.17 ± 0.27 (0.42)	17.39	0.53 ± 0.30 (0.48)	*(11.01)	0.18
9024 - 140630-06-01	0.86 ± 0.13 (0.29)	*(0.56)	0.00	*(0.70)	*(10.89)	0.00
9024 - 140630-06-02	0.95 ± 0.14 (0.27)	1.40 ± 0.26 (0.35)	0.00	*(0.74)	*(12.79)	0.23
9024 - 140630-06-03	0.87 ± 0.13 (0.25)	1.25 ± 0.24 (0.34)	0.00	*(0.71)	*(12.21)	0.12
9024 - 140630-06-04	0.93 ± 0.13 (0.20)	1.19 ± 0.26 (0.39)	0.00	*(0.70)	*(12.29)	0.11
9024 - 140630-06-05	0.94 ± 0.11 (0.19)	1.23 ± 0.22 (0.31)	0.00	*(0.53)	*(9.95)	0.14
9024 - 140630-06-06	0.83 ± 0.11 (0.20)	0.99 ± 0.20 (0.32)	0.00	*(0.52)	*(9.70)	0.00
9024 - 140630-06-07	0.87 ± 0.11 (0.20)	1.00 ± 0.20 (0.28)	12.76	0.39 ± 0.25 (0.40)	*(9.68)	0.07
9040 - 140701-01-01	0.79 ± 0.10 (0.15)	0.99 ± 0.19 (0.30)	10.97	0.34 ± 0.26 (0.42)	*(8.97)	0.06
9040 - 140701-01-02	0.95 ± 0.13 (0.24)	1.13 ± 0.26 (0.41)	10.25	0.32 ± 0.34 (0.56)	*(11.13)	0.15

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Box Counter Assay Results for Reuse Stockpile 8a and Reuse Stockpile 8b						
Sample Reuse Stockpile 8a	Ra-226 DCGL = 1.9 pCi/g Background = 0.9 pCi/g	Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g	U-238 DCGL = 168.8 pCi/g	Sample SOF (Uniform DCGL)
9040 - 140701-01-03	0.89 ± 0.13 (0.27)	1.11 ± 0.26 (0.41)	10.49	0.32 ± 0.27 (0.44)	*(11.82)	0.12
9040 - 140701-01-04	0.86 ± 0.12 (0.22)	1.11 ± 0.23 (0.33)	14.36	0.44 ± 0.32 (0.52)	*(11.18)	0.14
9040 - 140701-05-01	1.03 ± 0.11 (0.19)	0.92 ± 0.15 (0.31)	0.00	*(0.52)	*(9.39)	0.07
9040 - 140701-06-01	0.85 ± 0.10 (0.16)	1.01 ± 0.17 (0.26)	0.00	*(0.50)	*(9.22)	0.01
9040 - 140701-06-02	1.14 ± 0.14 (0.22)	*(0.52)	0.00	*(0.64)	*(11.06)	0.12
9051 - 140702-01-01	1.16 ± 0.14 (0.27)	0.98 ± 0.18 (0.31)	12.97	0.40 ± 0.33 (0.54)	*(11.19)	0.21
9051 - 140702-01-02	1.84 ± 0.26 (0.40)	1.77 ± 0.36 (0.55)	15.08	0.46 ± 0.50 (0.82)	*(17.48)	0.97
9051 - 140702-05-01	0.89 ± 0.11 (0.19)	1.01 ± 0.22 (0.32)	0.00	*(0.61)	*(10.65)	0.01
9051 - 140702-05-02	0.90 ± 0.12 (0.22)	1.11 ± 0.21 (0.38)	16.62	0.51 ± 0.36 (0.59)	*(11.08)	0.15
9671 - 140922-05-03	1.05 ± 0.13 (0.25)	1.23 ± 0.21 (0.33)	0.00	*(0.66)	*(11.59)	0.19
9671 - 140922-05-04	1.08 ± 0.13 (0.23)	1.08 ± 0.24 (0.37)	0.00	*(0.68)	*(11.22)	0.14
9671 - 140922-05-05	0.84 ± 0.13 (0.20)	1.13 ± 0.24 (0.28)	0.00	*(0.69)	*(11.59)	0.06
9671 - 140922-05-06	1.16 ± 0.15 (0.21)	1.18 ± 0.28 (0.36)	0.00	*(0.80)	*(14.14)	0.23
9671 - 140922-06-03	0.99 ± 0.13 (0.19)	1.19 ± 0.38 (0.46)	0.00	*(0.67)	*(10.79)	0.14
9671 - 140922-06-04	1.77 ± 0.19 (0.32)	0.96 ± 0.25 (0.42)	0.00	*(0.80)	*(12.27)	0.46
9671 - 140922-06-05	1.68 ± 0.20 (0.31)	1.09 ± 0.26 (0.40)	0.00	*(0.82)	*(13.98)	0.46
9671 - 140922-06-06	1.12 ± 0.18 (0.27)	1.38 ± 0.30 (0.42)	0.00	*(0.79)	*(14.50)	0.31
9682 - 140923-05-01	1.13 ± 0.17 (0.29)	1.06 ± 0.20 (0.35)	0.00	*(0.72)	*(12.18)	0.15
9682 - 140923-05-02	1.52 ± 0.17 (0.25)	1.04 ± 0.23 (0.37)	0.00	*(0.76)	*(12.33)	0.35
9682 - 140923-05-03	1.51 ± 0.20 (0.34)	1.13 ± 0.27 (0.44)	0.00	*(0.86)	*(13.81)	0.39
9682 - 140923-05-04	0.93 ± 0.14 (0.27)	1.12 ± 0.25 (0.34)	0.00	*(0.79)	*(12.63)	0.07
9682 - 140923-06-01	1.13 ± 0.14 (0.21)	0.83 ± 0.23 (0.36)	0.00	*(0.68)	*(11.81)	0.12
9682 - 140923-06-02	1.02 ± 0.14 (0.27)	1.05 ± 0.24 (0.32)	0.00	*(0.65)	*(11.91)	0.09
9682 - 140923-06-03	1.18 ± 0.15 (0.27)	1.06 ± 0.24 (0.39)	28.90	0.89 ± 0.40 (0.64)	*(12.85)	0.34
9790 - 141007-05-02	1.15 ± 0.14 (0.15)	1.12 ± 0.23 (0.35)	14.29	0.44 ± 0.39 (0.65)	*(12.59)	0.27
9790 - 141007-05-03	1.39 ± 0.15 (0.26)	0.95 ± 0.24 (0.37)	25.12	0.77 ± 0.37 (0.60)	*(12.03)	0.40
9790 - 141007-05-04	1.35 ± 0.15 (0.28)	0.92 ± 0.21 (0.36)	19.26	0.59 ± 0.32 (0.52)	*(12.28)	0.35
9790 - 141007-06-01	1.05 ± 0.13 (0.23)	0.94 ± 0.21 (0.30)	0.00	*(0.46)	*(10.76)	0.08
9818 - 141008-05-01	1.12 ± 0.14 (0.15)	0.91 ± 0.22 (0.32)	0.00	*(0.67)	*(11.75)	0.12

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Box Counter Assay Results for Reuse Stockpile 8a and Reuse Stockpile 8b						
Sample Reuse Stockpile 8a	Ra-226 DCGL = 1.9 pCi/g Background = 0.9 pCi/g	Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g	U-238 DCGL = 168.8 pCi/g	Sample SOF (Uniform DCGL)
9818 - 141008-05-02	1.08 ± 0.13 (0.26)	*(0.53)	10.97	0.34 ± 0.27 (0.44)	*(10.86)	0.16
9818 - 141008-05-03	0.98 ± 0.13 (0.23)	1.02 ± 0.22 (0.29)	13.03	0.40 ± 0.29 (0.48)	*(10.63)	0.13
9818 - 141008-05-04	0.93 ± 0.15 (0.30)	*(0.62)	0.00	*(0.78)	*(14.43)	0.02
9818 - 141008-05-05	1.45 ± 0.16 (0.31)	1.10 ± 0.20 (0.34)	7.87	0.24 ± 0.27 (0.45)	*(12.04)	0.39
9818 - 141008-05-06	1.21 ± 0.14 (0.23)	1.09 ± 0.22 (0.33)	19.26	0.59 ± 0.40 (0.66)	*(10.97)	0.32
9818 - 141008-05-07	1.32 ± 0.17 (0.26)	1.02 ± 0.22 (0.33)	16.27	0.50 ± 0.36 (0.58)	*(11.32)	0.32
9818 - 141008-06-01	1.17 ± 0.15 (0.28)	1.08 ± 0.25 (0.34)	18.17	0.56 ± 0.34 (0.55)	*(12.06)	0.29
9818 - 141008-06-02	0.95 ± 0.13 (0.21)	1.09 ± 0.22 (0.28)	0.00	*(0.66)	*(10.87)	0.07
9818 - 141008-06-03	0.95 ± 0.12 (0.24)	1.13 ± 0.21 (0.27)	22.32	0.69 ± 0.37 (0.61)	*(10.46)	0.22
9818 - 141008-06-04	0.87 ± 0.12 (0.21)	0.97 ± 0.18 (0.33)	0.00	*(0.62)	*(10.52)	0.00
9818 - 141008-06-05	1.28 ± 0.15 (0.27)	1.33 ± 0.28 (0.47)	0.00	*(0.82)	*(13.17)	0.36
9818 - 141008-06-06	1.44 ± 0.17 (0.28)	1.13 ± 0.23 (0.36)	0.00	*(0.83)	*(13.18)	0.35
9818 - 141008-06-07	0.98 ± 0.12 (0.21)	0.92 ± 0.19 (0.29)	22.37	0.69 ± 0.30 (0.48)	*(9.67)	0.17
0049 - 141104-06-01	0.92 ± 0.11 (0.19)	0.90 ± 0.16 (0.29)	13.43	0.41 ± 0.21 (0.33)	*(9.29)	0.09
0049 - 141104-06-02	1.03 ± 0.14 (0.30)	1.14 ± 0.25 (0.34)	18.69	0.58 ± 0.41 (0.67)	*(12.81)	0.24
0078 - 141106-01-01	1.27 ± 0.16 (0.33)	1.34 ± 0.27 (0.36)	0.00	*(0.81)	*(13.39)	0.37
0078 - 141106-01-02	1.14 ± 0.19 (0.47)	1.09 ± 0.24 (0.35)	0.00	*(0.68)	*(10.54)	0.17
0078 - 141106-06-01	0.91 ± 0.13 (0.24)	1.27 ± 0.26 (0.37)	0.00	*(0.74)	*(11.75)	0.14
0078 - 141106-06-02	0.97 ± 0.13 (0.22)	1.29 ± 0.24 (0.28)	0.00	*(0.75)	*(11.65)	0.18
0078 - 141106-06-03	1.16 ± 0.17 (0.26)	1.12 ± 0.24 (0.32)	33.00	1.02 ± 0.39 (0.63)	*(11.07)	0.39
0078 - 141106-06-04	1.35 ± 0.15 (0.21)	1.19 ± 0.19 (0.34)	0.00	*(0.67)	*(11.61)	0.33
0078 - 141106-06-05	1.19 ± 0.13 (0.22)	0.90 ± 0.20 (0.27)	13.96	0.43 ± 0.29 (0.46)	*(9.23)	0.23
0078 - 141106-06-06	1.00 ± 0.12 (0.23)	1.20 ± 0.22 (0.29)	0.00	*(0.55)	*(10.16)	0.15
0098 - 141107-01-01	1.03 ± 0.12 (0.20)	0.94 ± 0.16 (0.30)	8.77	0.27 ± 0.26 (0.42)	*(9.65)	0.12
0098 - 141107-01-02	0.88 ± 0.12 (0.25)	1.04 ± 0.22 (0.32)	0.00	*(0.57)	*(9.95)	0.02
0098 - 141107-01-03	0.92 ± 0.12 (0.23)	1.22 ± 0.24 (0.33)	10.40	0.32 ± 0.25 (0.40)	*(10.66)	0.18
0098 - 141107-01-04	0.95 ± 0.12 (0.20)	1.00 ± 0.22 (0.34)	14.53	0.45 ± 0.26 (0.43)	*(10.38)	0.11
0098 - 141107-01-05	1.49 ± 0.17 (0.31)	1.08 ± 0.28 (0.40)	0.00	*(0.84)	*(13.51)	0.35
0098 - 141107-01-06	1.20 ± 0.14 (0.23)	0.85 ± 0.21 (0.32)	0.00	*(0.70)	*(12.12)	0.16

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Box Counter Assay Results for Reuse Stockpile 8a and Reuse Stockpile 8b						
Sample Reuse Stockpile 8a	Ra-226 DCGL = 1.9 pCi/g Background = 0.9 pCi/g	Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g	U-238 DCGL = 168.8 pCi/g	Sample SOF (Uniform DCGL)
0098 - 141107-01-07	1.18 ± 0.17 (0.27)	1.22 ± 0.26 (0.34)	10.17	0.31 ± 0.31 (0.52)	*(10.70)	0.32
0098 - 141107-06-01	1.00 ± 0.14 (0.25)	1.16 ± 0.26 (0.45)	11.97	0.37 ± 0.36 (0.60)	*(11.54)	0.20
0098 - 141107-06-02	0.86 ± 0.13 (0.23)	1.00 ± 0.18 (0.36)	0.00	*(0.68)	*(11.03)	0.00
0098 - 141107-06-03	0.95 ± 0.14 (0.26)	1.10 ± 0.24 (0.39)	0.00	*(0.75)	*(11.72)	0.08
0098 - 141107-06-04	1.02 ± 0.14 (0.28)	0.82 ± 0.23 (0.36)	0.00	*(0.75)	*(11.70)	0.06
0098 - 141107-06-05	0.90 ± 0.11 (0.19)	0.97 ± 0.20 (0.30)	12.37	0.38 ± 0.27 (0.44)	*(9.48)	0.07
0098 - 141107-06-06	0.95 ± 0.12 (0.22)	0.80 ± 0.18 (0.29)	16.75	0.52 ± 0.28 (0.45)	*(9.98)	0.12
0098 - 141107-06-07	0.84 ± 0.10 (0.16)	1.08 ± 0.20 (0.30)	11.01	0.34 ± 0.24 (0.39)	*(9.38)	0.10
0129 - 141111-01-01	0.95 ± 0.11 (0.20)	1.09 ± 0.16 (0.28)	0.00	*(0.51)	*(8.81)	0.07
0129 - 141111-01-02	1.04 ± 0.11 (0.20)	0.98 ± 0.20 (0.29)	10.97	0.34 ± 0.25 (0.40)	*(9.00)	0.14
0129 - 141111-01-03	0.94 ± 0.13 (0.17)	1.05 ± 0.21 (0.32)	0.00	*(0.68)	*(10.71)	0.05
0129 - 141111-01-04	1.14 ± 0.14 (0.25)	1.04 ± 0.23 (0.33)	0.00	*(0.71)	*(11.73)	0.15
0129 - 141111-01-05	0.91 ± 0.13 (0.22)	1.00 ± 0.23 (0.36)	0.00	*(0.65)	*(9.93)	0.01
0129 - 141111-06-01	1.00 ± 0.14 (0.22)	1.01 ± 0.25 (0.38)	0.00	*(0.73)	*(11.76)	0.06
0129 - 141111-06-02	1.12 ± 0.13 (0.24)	1.07 ± 0.24 (0.37)	0.00	*(0.69)	*(11.15)	0.15
0129 - 141111-06-03	1.03 ± 0.13 (0.22)	1.00 ± 0.21 (0.32)	0.00	*(0.35)	*(10.23)	0.07
0129 - 141111-06-04	1.02 ± 0.14 (0.25)	1.11 ± 0.19 (0.32)	16.17	0.50 ± 0.37 (0.60)	*(11.38)	0.21
0129 - 141111-06-05	0.99 ± 0.12 (0.23)	1.07 ± 0.24 (0.32)	0.00	*(0.53)	*(8.96)	0.08
0145 - 141112-01-01	1.06 ± 0.12 (0.22)	1.06 ± 0.20 (0.29)	0.00	*(0.53)	*(9.42)	0.12
0145 - 141112-06-01	1.13 ± 0.13 (0.21)	1.17 ± 0.22 (0.29)	0.00	*(0.47)	*(10.72)	0.21
0159 - 141113-01-01	1.03 ± 0.12 (0.14)	1.03 ± 0.22 (0.31)	6.07	0.19 ± 0.22 (0.36)	*(9.60)	0.12
0159 - 141113-01-02	1.01 ± 0.11 (0.20)	1.07 ± 0.19 (0.26)	0.00	*(0.48)	*(8.94)	0.10
0159 - 141113-01-03	0.90 ± 0.12 (0.21)	1.05 ± 0.16 (0.32)	13.46	0.41 ± 0.22 (0.34)	*(9.17)	0.10
0159 - 141113-01-04	1.05 ± 0.14 (0.25)	1.07 ± 0.19 (0.38)	0.00	*(0.70)	*(11.37)	0.11
0159 - 141113-01-05	1.03 ± 0.14 (0.26)	1.26 ± 0.25 (0.34)	0.00	*(0.72)	*(11.48)	0.20
0159 - 141113-01-06	1.17 ± 0.13 (0.20)	1.18 ± 0.26 (0.31)	9.56	0.29 ± 0.27 (0.45)	*(11.96)	0.28
0159 - 141113-06-01	1.12 ± 0.15 (0.28)	1.24 ± 0.25 (0.30)	0.00	*(0.78)	*(12.47)	0.24
0159 - 141113-06-02	0.96 ± 0.13 (0.24)	1.13 ± 0.24 (0.32)	14.97	0.46 ± 0.36 (0.60)	*(11.25)	0.18
0159 - 141113-06-03	0.92 ± 0.13 (0.25)	1.25 ± 0.26 (0.33)	17.97	0.55 ± 0.34 (0.56)	*(11.55)	0.24

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Box Counter Assay Results for Reuse Stockpile 8a and Reuse Stockpile 8b						
Sample Reuse Stockpile 8a	Ra-226 DCGL = 1.9 pCi/g Background = 0.9 pCi/g	Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g	U-238 DCGL = 168.8 pCi/g	Sample SOF (Uniform DCGL)
0159 - 141113-06-04	0.84 ± 0.13 (0.27)	0.96 ± 0.20 (0.40)	0.00	*(0.72)	*(11.51)	0.00
0159 - 141113-06-05	1.02 ± 0.12 (0.21)	1.11 ± 0.21 (0.31)	0.00	*(0.56)	*(10.03)	0.11
0159 - 141113-06-06	0.88 ± 0.11 (0.22)	1.04 ± 0.21 (0.32)	0.00	*(0.54)	*(9.59)	0.02
0159 - 141113-06-07	0.93 ± 0.12 (0.22)	1.01 ± 0.21 (0.31)	0.00	*(0.53)	*(9.58)	0.02
0178 - 141114-01-01	0.96 ± 0.13 (0.23)	1.32 ± 0.25 (0.37)	0.00	*(0.42)	*(11.84)	0.19
0178 - 141114-01-02	0.98 ± 0.13 (0.26)	1.33 ± 0.26 (0.32)	19.78	0.61 ± 0.38 (0.62)	*(11.08)	0.32
0178 - 141114-01-03	1.04 ± 0.12 (0.15)	1.10 ± 0.22 (0.33)	0.00	*(0.65)	*(11.14)	0.12
0178 - 141114-06-01	1.00 ± 0.12 (0.21)	1.12 ± 0.21 (0.30)	0.00	*(0.56)	*(10.29)	0.11
0178 - 141114-06-02	0.96 ± 0.11 (0.12)	1.13 ± 0.21 (0.34)	0.00	*(0.53)	*(9.45)	0.10
0178 - 141114-06-03	1.10 ± 0.13 (0.23)	1.27 ± 0.24 (0.33)	0.00	*(0.59)	*(9.87)	0.24
0212 - 141117-01-01	0.90 ± 0.11 (0.20)	1.16 ± 0.22 (0.31)	11.41	0.35 ± 0.23 (0.38)	*(9.70)	0.14
0212 - 141117-01-02	1.02 ± 0.12 (0.23)	1.18 ± 0.23 (0.33)	0.00	*(0.49)	*(10.45)	0.15
0212 - 141117-01-03	1.59 ± 0.16 (0.24)	1.24 ± 0.23 (0.30)	0.00	*(0.65)	*(11.31)	0.48
0342 - 141203-01-01	1.27 ± 0.14 (0.24)	1.09 ± 0.22 (0.33)	0.00	*(0.64)	*(10.80)	0.24
0342 - 141203-01-02	1.11 ± 0.13 (0.22)	1.27 ± 0.24 (0.37)	0.00	*(0.63)	*(10.74)	0.24
0355 - 141204-01-01	0.98 ± 0.12 (0.22)	1.02 ± 0.18 (0.32)	0.00	*(0.59)	*(9.97)	0.06
0355 - 141204-01-02	1.12 ± 0.14 (0.18)	1.08 ± 0.19 (0.30)	0.00	*(0.61)	*(10.42)	0.16
0355 - 141204-01-03	1.07 ± 0.13 (0.24)	1.26 ± 0.24 (0.31)	10.46	0.32 ± 0.28 (0.46)	*(10.51)	0.28
0355 - 141204-01-04	0.95 ± 0.12 (0.22)	1.13 ± 0.18 (0.28)	0.00	*(0.59)	*(9.87)	0.09
0355 - 141204-01-05	1.04 ± 0.13 (0.24)	1.24 ± 0.23 (0.27)	17.99	0.55 ± 0.33 (0.53)	*(9.61)	0.30
0379 - 141208-01-01	1.03 ± 0.12 (0.15)	1.16 ± 0.19 (0.35)	13.11	0.40 ± 0.30 (0.48)	*(9.89)	0.22
0379 - 141208-01-02	0.92 ± 0.11 (0.20)	1.10 ± 0.18 (0.29)	16.55	0.51 ± 0.24 (0.38)	*(9.70)	0.16
0379 - 141208-01-03	0.99 ± 0.11 (0.14)	1.03 ± 0.20 (0.29)	0.00	*(0.53)	*(9.50)	0.06
0390 - 141209-01-01	1.16 ± 0.13 (0.21)	1.11 ± 0.18 (0.35)	14.38	0.44 ± 0.28 (0.45)	*(9.97)	0.28
0390 - 141209-01-02	1.14 ± 0.12 (0.22)	1.05 ± 0.19 (0.28)	9.26	0.28 ± 0.22 (0.35)	*(9.10)	0.20
0390 - 141209-01-03	0.99 ± 0.12 (0.18)	1.06 ± 0.17 (0.34)	12.68	0.39 ± 0.24 (0.38)	*(9.29)	0.15
0390 - 141209-01-04	1.18 ± 0.13 (0.22)	1.47 ± 0.24 (0.32)	0.00	*(0.59)	*(10.26)	0.38
0390 - 141209-01-05	1.14 ± 0.15 (0.25)	1.05 ± 0.21 (0.29)	0.00	*(0.56)	*(9.97)	0.15
0408 - 141210-01-01	0.96 ± 0.12 (0.18)	1.17 ± 0.21 (0.30)	0.00	*(0.56)	*(10.07)	0.12

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Box Counter Assay Results for Reuse Stockpile 8a and Reuse Stockpile 8b						
Sample Reuse Stockpile 8a	Ra-226 DCGL = 1.9 pCi/g Background = 0.9 pCi/g	Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g	U-238 DCGL = 168.8 pCi/g	Sample SOF (Uniform DCGL)
0408 - 141210-01-02	0.93 ± 0.11 (0.22)	1.14 ± 0.21 (0.28)	0.00	*(0.52)	*(8.84)	0.09
0408 - 141210-01-03	1.05 ± 0.12 (0.20)	1.18 ± 0.20 (0.28)	0.00	*(0.53)	*(9.71)	0.17
0408 - 141210-01-04	1.09 ± 0.12 (0.22)	1.20 ± 0.22 (0.37)	8.41	0.26 ± 0.31 (0.51)	*(9.34)	0.25
0408 - 141210-01-05	1.07 ± 0.12 (0.21)	1.23 ± 0.21 (0.31)	0.00	*(0.53)	*(9.70)	0.20
0421 - 141211-01-01	1.05 ± 0.13 (0.20)	1.15 ± 0.22 (0.30)	0.00	*(0.56)	*(10.30)	0.16
0421 - 141211-01-02	1.10 ± 0.12 (0.19)	1.21 ± 0.21 (0.29)	10.87	0.33 ± 0.25 (0.41)	*(10.64)	0.27
0421 - 141211-01-03	1.06 ± 0.11 (0.19)	1.03 ± 0.20 (0.34)	0.00	*(0.53)	*(9.37)	0.10
0421 - 141211-01-04	1.12 ± 0.13 (0.25)	1.18 ± 0.22 (0.30)	0.00	*(0.56)	*(9.18)	0.21
0421 - 141211-01-05	0.94 ± 0.14 (0.29)	1.15 ± 0.23 (0.32)	0.00	*(0.53)	*(9.09)	0.10
0421 - 141211-01-06	0.91 ± 0.11 (0.17)	1.05 ± 0.20 (0.32)	0.00	*(0.54)	3.65 ± 2.30 (5.27)	0.05
0446 - 141212-01-01	0.92 ± 0.11 (0.22)	1.00 ± 0.21 (0.31)	0.00	*(0.54)	*(8.38)	0.01
0446 - 141212-01-02	0.94 ± 0.10 (0.17)	1.27 ± 0.25 (0.27)	0.00	*(0.50)	*(9.22)	0.16
0446 - 141212-01-03	1.19 ± 0.13 (0.22)	1.19 ± 0.22 (0.27)	17.77	0.55 ± 0.30 (0.48)	*(10.43)	0.35
0446 - 141212-01-04	1.11 ± 0.13 (0.25)	1.21 ± 0.25 (0.32)	12.13	0.37 ± 0.29 (0.47)	*(10.33)	0.28
0446 - 141212-01-05	1.11 ± 0.13 (0.23)	1.03 ± 0.21 (0.30)	0.00	*(0.60)	*(10.54)	0.12
0470 - 141213-01-01	1.05 ± 0.13 (0.21)	1.42 ± 0.26 (0.31)	0.00	*(0.58)	*(11.14)	0.29
0470 - 141213-01-02	1.03 ± 0.12 (0.22)	1.26 ± 0.24 (0.34)	0.00	*(0.60)	*(10.37)	0.20
0470 - 141213-01-03	1.06 ± 0.13 (0.23)	1.34 ± 0.23 (0.35)	13.48	0.41 ± 0.31 (0.51)	*(10.95)	0.33
0470 - 141213-01-04	0.91 ± 0.12 (0.23)	1.07 ± 0.21 (0.31)	0.00	*(0.57)	*(9.91)	0.04
0470 - 141213-01-05	0.96 ± 0.13 (0.22)	1.13 ± 0.23 (0.32)	9.27	0.29 ± 0.26 (0.44)	*(9.13)	0.15
0470 - 141213-01-06	0.90 ± 0.11 (0.20)	0.99 ± 0.20 (0.29)	0.00	*(0.55)	*(9.12)	0.00
0494 - 141216-01-01	0.85 ± 0.11 (0.20)	1.00 ± 0.21 (0.34)	0.00	*(0.54)	*(9.91)	0.00
0494 - 141216-01-02	0.92 ± 0.12 (0.19)	1.08 ± 0.17 (0.29)	16.40	0.50 ± 0.30 (0.48)	*(9.93)	0.14
0494 - 141216-01-03	1.02 ± 0.11 (0.15)	1.23 ± 0.20 (0.31)	0.00	*(0.54)	*(9.76)	0.17
0508 - 141217-01-01	0.89 ± 0.11 (0.22)	1.27 ± 0.21 (0.23)	0.00	*(0.55)	*(10.34)	0.14
0508 - 141217-01-02	0.82 ± 0.12 (0.24)	1.02 ± 0.20 (0.28)	0.00	*(0.55)	*(9.60)	0.01
0508 - 141217-01-03	1.12 ± 0.12 (0.21)	0.99 ± 0.20 (0.32)	11.48	0.35 ± 0.28 (0.46)	*(9.66)	0.18
0508 - 141217-01-04	1.11 ± 0.12 (0.20)	1.07 ± 0.24 (0.32)	0.00	*(0.54)	*(9.25)	0.15
0508 - 141217-01-05	0.90 ± 0.11 (0.18)	1.07 ± 0.21 (0.24)	10.66	0.33 ± 0.39 (0.64)	*(8.39)	0.10

Hematite Decommissioning Project	FSSFR Volume 2, Chapter 6: <i>Data Summary Report for Reuse Stockpiles 8a and 8b</i>					
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Attachment 3						
Box Counter Assay Results for Reuse Stockpile 8a and Reuse Stockpile 8b						
Sample Reuse Stockpile 8a	Ra-226 DCGL = 1.9 pCi/g Background = 0.9 pCi/g	Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g	U-238 DCGL = 168.8 pCi/g	Sample SOF (Uniform DCGL)
0520 - 141218-01-01	1.06 ± 0.12 (0.17)	1.02 ± 0.21 (0.28)	0.00	*(0.56)	*(10.35)	0.09
0520 - 141218-01-02	1.13 ± 0.14 (0.19)	1.08 ± 0.22 (0.30)	11.54	0.36 ± 0.29 (0.47)	*(10.17)	0.23
0520 - 141218-01-03	1.01 ± 0.13 (0.20)	1.19 ± 0.22 (0.35)	11.04	0.34 ± 0.36 (0.60)	*(10.43)	0.22
0520 - 141218-01-04	1.09 ± 0.12 (0.23)	1.21 ± 0.21 (0.32)	0.00	*(0.59)	*(9.59)	0.20
0520 - 141218-01-05	0.97 ± 0.12 (0.17)	1.24 ± 0.19 (0.33)	0.00	*(0.58)	*(10.60)	0.16
0535 - 141219-01-01	1.27 ± 0.14 (0.27)	1.17 ± 0.20 (0.37)	0.00	*(0.60)	*(10.66)	0.28
0535 - 141219-01-02	1.38 ± 0.14 (0.23)	1.20 ± 0.22 (0.37)	0.00	*(0.61)	*(10.49)	0.35
0535 - 141219-01-03	1.96 ± 0.17 (0.25)	1.02 ± 0.24 (0.37)	10.79	0.33 ± 0.32 (0.52)	*(11.34)	0.63
0549 - 141222-01-01	1.22 ± 0.14 (0.22)	1.21 ± 0.21 (0.40)	8.73	0.27 ± 0.30 (0.50)	*(11.69)	0.32
0549 - 141222-01-02	1.01 ± 0.14 (0.24)	1.33 ± 0.25 (0.34)	12.00	0.37 ± 0.26 (0.42)	*(11.73)	0.29
0549 - 141222-01-03	1.12 ± 0.15 (0.25)	1.07 ± 0.23 (0.32)	0.00	*(0.63)	*(11.83)	0.15
0644 - 150112-01-01	1.17 ± 0.14 (0.24)	1.27 ± 0.19 (0.30)	0.00	*(0.58)	*(10.27)	0.28
0644 - 150112-01-02	1.06 ± 0.13 (0.25)	1.15 ± 0.23 (0.32)	10.53	0.32 ± 0.30 (0.49)	*(10.68)	0.22
0653 - 150113-01-01	1.10 ± 0.13 (0.22)	0.98 ± 0.20 (0.27)	0.00	*(0.32)	*(10.32)	0.11
0653 - 150113-01-02	1.10 ± 0.13 (0.24)	1.20 ± 0.22 (0.35)	0.00	*(0.55)	*(10.39)	0.20
0653 - 150113-01-03	1.51 ± 0.15 (0.24)	1.27 ± 0.26 (0.46)	9.78	0.30 ± 0.27 (0.45)	*(10.72)	0.51
0653 - 150113-01-04	1.12 ± 0.14 (0.26)	1.03 ± 0.23 (0.30)	0.00	*(0.60)	*(10.36)	0.13
0672 - 150114-01-01	1.23 ± 0.13 (0.17)	1.18 ± 0.22 (0.33)	0.00	*(0.43)	*(9.50)	0.27
0672 - 150114-01-02	1.33 ± 0.14 (0.22)	1.03 ± 0.23 (0.37)	14.62	0.45 ± 0.35 (0.58)	*(11.04)	0.32
0672 - 150114-01-03	1.37 ± 0.15 (0.03)	1.35 ± 0.25 (0.32)	0.00	*(0.62)	*(10.46)	0.42
0672 - 150114-01-04	1.27 ± 0.14 (0.23)	1.22 ± 0.25 (0.37)	0.00	*(0.62)	*(10.99)	0.31
0672 - 150114-01-05	1.26 ± 0.14 (0.24)	1.06 ± 0.22 (0.34)	0.00	*(0.58)	*(11.42)	0.22
0684 - 150115-01-01	1.11 ± 0.13 (0.20)	1.09 ± 0.25 (0.35)	9.74	0.30 ± 0.33 (0.54)	*(12.27)	0.21
0684 - 150115-01-02	0.46 ± 0.47 (0.23)	0.55 ± 0.57 (0.24)	9.92	0.41 ± 0.50 (0.29)	16.07 ± 16.90 (8.04)	0.15
0684 - 150115-01-03	0.52 ± 0.57 (0.28)	0.64 ± 0.60 (0.27)	13.27	0.61 ± 0.49 (0.37)	17.67 ± 19.10 (9.01)	0.18
0684 - 150115-01-04	0.41 ± 0.29 (0.26)	0.52 ± 0.49 (0.21)	8.86	0.39 ± 0.49 (0.28)	13.92 ± 15.70 (7.80)	0.14
1277 - 150323-01-01	0.35 ± 0.28 (0.19)	0.38 ± 0.38 (0.15)	7.27	0.32 ± 0.33 (0.15)	10.24 ± 10.60 (5.02)	0.10
1277 - 150323-01-02	0.34 ± 0.35 (0.14)	0.31 ± 0.23 (0.17)	8.41	0.37 ± 0.38 (0.18)	12.30 ± 12.50 (6.03)	0.12
1277 - 150323-01-03	0.31 ± 0.39 (0.21)	0.35 ± 0.37 (0.18)	7.27	0.32 ± 0.45 (0.32)	11.78 ± 14.80 (8.72)	0.11

Box Counter Assay Results for Reuse Stockpile 8a and Reuse Stockpile 8b

Sample Reuse Stockpile 8a	Ra-226 DCGL = 1.9 pCi/g Background = 0.9 pCi/g	Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g	U-238 DCGL = 168.8 pCi/g	Sample SOF (Uniform DCGL)
1277 - 150323-01-04	0.24 ± 0.26 (0.12)	0.23 ± 0.27 (0.13)	5.68	0.25 ± 0.29 (0.14)	8.15 ± 9.29 (4.65)	0.08
1277 - 150323-01-05	0.39 ± 0.24 (0.12)	0.43 ± 0.48 (0.22)	7.98	0.33 ± 0.42 (0.24)	12.87 ± 13.60 (6.44)	0.12
1277 - 150323-01-06	0.37 ± 0.39 (0.19)	0.48 ± 0.49 (0.20)	8.64	0.38 ± 0.37 (0.17)	13.60 ± 13.80 (6.53)	0.13
1277 - 150323-01-07	0.38 ± 0.37 (0.15)	0.45 ± 0.29 (0.13)	7.26	0.30 ± 0.37 (0.21)	13.71 ± 14.70 (6.99)	0.12
1277 - 150323-01-08	0.44 ± 0.35 (0.24)	0.58 ± 0.49 (0.28)	8.86	0.39 ± 0.45 (0.23)	12.47 ± 13.40 (6.36)	0.13
1293 - 150324-01-01	0.42 ± 0.36 (0.21)	0.48 ± 0.50 (0.20)	9.55	0.42 ± 0.45 (0.21)	13.56 ± 15.00 (7.32)	0.14
1309 - 150325-01-01	0.45 ± 0.37 (0.23)	0.55 ± 0.51 (0.22)	9.77	0.43 ± 0.47 (0.22)	13.64 ± 15.60 (7.77)	0.14
1482 - 150410-01-01	0.54 ± 0.36 (0.42)	0.49 ± 0.50 (0.19)	8.64	0.38 ± 0.46 (0.24)	13.68 ± 15.10 (7.25)	0.13
1482 - 150410-01-02	1.16 ± 0.39 (0.53)	1.43 ± 0.50 (0.33)	11.61	0.48 ± 0.50 (0.24)	19.54 ± 21.00 (9.97)	0.54
1482 - 150410-01-03	0.26 ± 0.26 (0.11)	0.30 ± 0.31 (0.15)	5.59	0.21 ± 0.22 (0.10)	11.09 ± 12.00 (5.77)	0.10
1482 - 150410-01-04	0.28 ± 0.29 (0.12)	0.36 ± 0.34 (0.14)	5.08	0.21 ± 0.25 (0.13)	9.98 ± 12.00 (6.59)	0.09
1482 - 150410-01-05	0.42 ± 0.37 (0.20)	0.48 ± 0.50 (0.24)	6.53	0.27 ± 0.36 (0.22)	12.55 ± 12.80 (6.15)	0.11
1537 - 150415-01-01	0.54 ± 0.50 (0.22)	0.67 ± 0.42 (0.23)	10.68	0.47 ± 0.48 (0.23)	16.49 ± 16.90 (8.08)	0.16
1537 - 150415-01-02	0.62 ± 0.48 (0.37)	0.81 ± 0.37 (0.21)	10.00	0.44 ± 0.49 (0.24)	15.86 ± 16.80 (7.93)	0.15
1537 - 150415-01-03	0.78 ± 0.30 (0.26)	0.76 ± 0.42 (0.18)	9.68	0.40 ± 0.45 (0.23)	16.40 ± 17.30 (8.20)	0.15
1537 - 150415-01-04	0.86 ± 0.30 (0.17)	0.84 ± 0.37 (0.18)	10.00	0.44 ± 0.51 (0.26)	14.74 ± 16.50 (8.11)	0.15
1537 - 150415-01-05	0.90 ± 0.32 (0.23)	0.97 ± 0.38 (0.24)	11.82	0.52 ± 0.47 (0.25)	17.61 ± 18.00 (8.63)	0.17
1537 - 150415-01-06	0.60 ± 0.41 (0.44)	0.96 ± 0.42 (0.22)	10.23	0.45 ± 0.51 (0.25)	15.60 ± 16.80 (7.96)	0.15
1537 - 150415-01-07	0.99 ± 0.49 (0.52)	1.23 ± 0.58 (0.58)	18.28	0.84 ± 0.53 (0.37)	24.72 ± 24.70 (13.35)	0.42
1537 - 150415-01-08	0.91 ± 0.32 (0.60)	1.07 ± 0.48 (0.54)	13.27	0.61 ± 0.38 (0.37)	18.66 ± 18.70 (7.65)	0.23
1537 - 150415-01-09	1.34 ± 0.45 (1.05)	1.10 ± 0.47 (0.55)	14.76	0.61 ± 0.43 (0.27)	23.82 ± 23.80 (11.20)	0.51
2039 - 150529-01-01	0.89 ± 0.13 (0.22)	0.93 ± 0.18 (0.33)	0.00	*(0.66)	*(11.08)	0.00
2039 - 150529-01-02	0.91 ± 0.13 (0.23)	1.15 ± 0.25 (0.34)	13.53	0.42 ± 0.37 (0.62)	*(11.88)	0.16
2039 - 150529-01-03	0.88 ± 0.13 (0.27)	1.20 ± 0.24 (0.34)	24.92	0.77 ± 0.35 (0.57)	*(11.17)	0.24

* (asterisk): Indicates measurement < HRGS Decision Level

Note: A combination of Box Counter measurements and Portable ISOCS measurements were used to assay individual Stockpile 8a soil piles.

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Attachment 3 Box Counter Assay Results for Reuse Stockpile 8a and Reuse Stockpile 8b						
Sample Reuse Stockpile 8b	Ra-226 DCGL = 1.9 pCi/g Background = 0.9 pCi/g	Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g	U-238 DCGL =168.8 pCi/g	Sample SOF (Uniform DCGL)
9566-RU-140905-07-01	1.41	1.41	27.73	1.22	39.14	0.87
9566-RU-140905-07-02	0.85	1.0	20.68	0.91	31.95	0.31
9566-RU-140905-07-03	0.76	0.81	18.18	0.8	29.04	0.28
9566-RU-140905-07-04	0.68	0.81	15.68	0.69	26.16	0.25
9567-RU-140908-07-01	1.28	1.23	19.32	0.85	32.37	0.62
9567-RU-140908-07-02	0.93	1.05	16.14	0.71	25.24	0.29
9567-RU-140908-07-03	0.87	0.89	17.50	0.77	29.1	0.28
9567-RU-140908-07-04	0.82	0.9	14.09	0.62	23.21	0.22
9567-RU-140908-07-05	1.01	0.61	16.37	0.72	26.11	0.31
9567-RU-140908-07-06	0.83	0.77	16.14	0.71	26.01	0.25
9567-RU-140908-07-07	1.02	0.87	17.50	0.77	28.71	0.34
9567-RU-140908-07-08	1.12	0.93	17.50	0.77	27.59	0.38
9567-RU-140908-07-09	0.69	0.7	15.00	0.66	24.4	0.23
9567-RU-140908-07-10	0.49	0.53	12.96	0.57	22	0.21
9604-RU-140908-07-11	1.3	0.92	18.91	0.71	46.25	0.60
9604-RU-140908-07-12	0.87	0.55	12.50	0.55	19.37	0.19
9604-RU-140908-07-13	0.97	0.69	15.00	0.66	21.97	0.26
9604-RU-140908-07-14	0.73	0.63	13.87	0.61	22.76	0.22
9604-RU-140908-07-15	0.66	0.7	13.64	0.6	20.64	0.20
9604-RU-140908-07-16	0.68	0.59	12.96	0.57	21.2	0.20
9604-RU-140908-07-17	0.71	0.67	11.13	0.46	19.94	0.18
9604-RU-140908-07-18	1.2	0.89	17.73	0.78	28.84	0.43
9605-RU-140909-07-01	0.82	0.76	14.77	0.65	23.14	0.23
9605-RU-140909-07-02	0.69	0.73	14.27	0.59	22.88	0.22
9605-RU-140909-07-03	0.88	0.65	12.82	0.53	20.85	0.20
9605-RU-140909-07-04	0.82	0.76	14.09	0.62	22.33	0.22
9605-RU-140909-07-05	0.66	0.6	14.32	0.63	20.74	0.21
9605-RU-140909-07-06	1.08	0.91	18.41	0.81	29.39	0.38
9605-RU-140909-07-07	1.21	0.79	13.79	0.57	25.75	0.40
9605-RU-140909-07-08	1.15	0.72	16.93	0.7	27.29	0.39

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Attachment 3						
Box Counter Assay Results for Reuse Stockpile 8a and Reuse Stockpile 8b						
Sample Reuse Stockpile 8b	Ra-226 DCGL = 1.9 pCi/g Background = 0.9 pCi/g	Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g	U-238 DCGL =168.8 pCi/g	Sample SOF (Uniform DCGL)
9605-RU-140909-07-09	1.12	0.7	14.03	0.58	26.24	0.35
9605-RU-140909-07-10	0.91	0.75	16.69	0.69	27.01	0.26
9605-RU-140909-07-11	1.1	0.64	17.50	0.77	29.57	0.38
9605-RU-140909-07-12	0.88	0.69	15.91	0.7	24.27	0.24
9605-RU-140909-07-13	1.05	0.87	17.05	0.75	28.89	0.35
9605-RU-140909-07-14	0.76	0.93	16.37	0.72	25.73	0.25
9605-RU-140909-07-15	1.17	0.77	16.82	0.74	26.01	0.40
9605-RU-140909-07-16	1.02	0.74	15.46	0.68	24.22	0.30
9606-RU-140910-07-01	1.05	0.5	15.23	0.67	23.43	0.31
9606-RU-140910-07-02	0.99	0.56	15.46	0.68	23.07	0.28
9606-RU-140910-07-03	0.97	0.74	17.73	0.78	25.6	0.29
9606-RU-140910-07-04	1.05	0.78	17.28	0.76	26.79	0.34
9606-RU-140910-07-05	0.9	0.57	14.32	0.63	23.11	0.22
9606-RU-140910-07-06	0.96	0.65	15.00	0.66	23.79	0.26
9606-RU-140910-07-07	0.8	0.66	15.00	0.66	24.31	0.23
9606-RU-140910-07-08	0.71	0.7	15.23	0.67	24.33	0.24
9606-RU-140910-07-09	0.65	0.69	16.37	0.72	27.07	0.26
9607-RU-140911-07-01	0.85	0.72	14.09	0.62	23.73	0.22
9607-RU-140911-07-02	0.83	0.82	14.55	0.64	22.93	0.22
9607-RU-140911-07-03	0.85	0.65	15.68	0.69	26.7	0.25
9607-RU-140911-07-04	0.93	0.68	16.21	0.67	26.95	0.27
9607-RU-140911-07-05	0.78	0.62	15.00	0.62	25.66	0.24
9607-RU-140911-07-06	1.21	0.76	13.55	0.56	24.32	0.39
9607-RU-140911-07-07	1.27	0.83	18.39	0.76	29.77	0.48
9607-RU-140911-07-08	1.18	0.72	16.14	0.71	27.21	0.40
9607-RU-140911-07-09	0.99	0.71	16.69	0.69	28.46	0.31
9607-RU-140911-07-10	1.12	0.66	15.91	0.7	25.58	0.36
9669-RU-140922-07-01	1.51	0.73	15.23	0.67	23.22	0.55
9669-RU-140922-07-02	1.06	0.75	15.68	0.69	23.88	0.32
9669-RU-140922-07-03	1.14	0.78	16.37	0.72	25.97	0.38

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Attachment 3						
Box Counter Assay Results for Reuse Stockpile 8a and Reuse Stockpile 8b						
Sample Reuse Stockpile 8b	Ra-226 DCGL = 1.9 pCi/g Background = 0.9 pCi/g	Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g	U-238 DCGL =168.8 pCi/g	Sample SOF (Uniform DCGL)
9669-RU-140922-07-04	1.22	0.87	16.14	0.71	24.88	0.41
9669-RU-140922-07-05	1.17	0.79	16.37	0.72	25.29	0.39
9669-RU-140922-07-06	1.02	0.96	17.73	0.78	26.91	0.33
9669-RU-140922-07-07	1.09	0.8	17.90	0.74	29.69	0.38
9669-RU-140922-07-08	0.94	0.89	16.37	0.72	25.36	0.27
9669-RU-140922-07-09	1.13	0.94	18.18	0.8	27.45	0.39
9684-RU-140923-07-01	0.99	0.96	17.05	0.75	26.99	0.31
9684-RU-140923-07-02	0.82	0.93	16.82	0.74	26.2	0.26
9684-RU-140923-07-03	0.77	0.93	16.82	0.74	27.16	0.26
9684-RU-140923-07-04	0.84	0.82	17.50	0.77	29.24	0.28
9684-RU-140923-07-05	1.42	0.87	16.21	0.67	26.59	0.53
9684-RU-140923-07-06	1.16	0.85	17.28	0.76	27.62	0.40
9684-RU-140923-07-07	1.09	0.9	18.41	0.81	29.17	0.38
9684-RU-140923-07-08	1.3	0.85	18.41	0.81	28.33	0.49
9684-RU-140923-07-09	1.08	0.8	17.18	0.71	28.25	0.36
9684-RU-140923-07-10	0.91	0.79	16.14	0.71	26.15	0.26
9684-RU-140923-07-11	0.87	0.96	15.00	0.62	25.98	0.24
9684-RU-140923-07-12	1.27	1.14	19.32	0.85	30.13	0.56
9684-RU-140923-07-13	1.12	1.09	18.41	0.81	29.28	0.44
9684-RU-140923-07-14	1	1.05	16.69	0.69	27.44	0.34
9684-RU-140923-07-15	1.06	0.96	17.96	0.79	29.02	0.36
9695-RU-140924-07-01	0.84	0.9	13.31	0.55	25.76	0.23
9695-RU-140924-07-02	0.87	0.91	13.06	0.54	25.86	0.23
9705-RU-140925-07-01	0.82	0.88	10.91	0.48	16.66	0.16
9705-RU-140925-07-02	0.87	0.78	11.37	0.5	19.14	0.18
9705-RU-140925-07-03	1.05	1.25	11.37	0.5	18.31	0.38
9705-RU-140925-07-04	0.97	0.85	10.68	0.47	18.1	0.21
9705-RU-140925-07-05	0.58	0.46	9.09	0.4	13.83	0.14
9705-RU-140925-07-06	0.64	0.47	9.09	0.4	13.37	0.13
9705-RU-140925-07-07	0.4	0.44	8.41	0.37	12.3	0.12

Attachment 3

Box Counter Assay Results for Reuse Stockpile 8a and Reuse Stockpile 8b

Sample Reuse Stockpile 8b	Ra-226 DCGL = 1.9 pCi/g Background = 0.9 pCi/g	Th-232 DCGL = 2.0 pCi/g Background = 1.0 pCi/g	U-234 DCGL = 195.4 pCi/g Inferred Results	U-235 DCGL = 51.6 pCi/g	U-238 DCGL =168.8 pCi/g	Sample SOF (Uniform DCGL)
9731-RU-140930-07-01	0.38	0.44	7.73	0.34	12.65	0.12
9731-RU-140930-07-02	1.31	1.04	11.37	0.5	17.83	0.41
9758-RU-141002-07-01	0.72	0.88	15.00	0.66	22.94	0.23
9758-RU-141002-07-02	0.79	0.55	14.52	0.6	23.83	0.23
9758-RU-141002-07-03	0.75	0.78	14.52	0.6	23.5	0.23
9758-RU-141002-07-04	0.64	0.72	12.50	0.55	20.35	0.20
9783-RU-141006-07-01	0.77	0.8	14.09	0.62	20.26	0.20
9783-RU-141006-07-02	0.74	0.64	14.77	0.65	24.02	0.23
9783-RU-141006-07-03	0.67	0.78	14.55	0.64	21.82	0.22
9783-RU-141006-07-04	0.75	0.84	14.09	0.62	19.3	0.20
9783-RU-141006-07-05	0.92	0.88	14.09	0.62	23.26	0.23
9783-RU-141006-07-06	0.88	0.76	14.32	0.63	21.73	0.21
9783-RU-141006-07-07	0.87	0.76	13.41	0.59	20.57	0.20
9783-RU-141006-07-08	0.79	0.72	14.32	0.63	21.54	0.21
9783-RU-141006-07-09	0.94	0.7	14.32	0.63	22.73	0.24
9783-RU-141006-07-10	0.83	0.72	13.87	0.61	22.94	0.22
9783-RU-141006-07-11	0.77	0.88	15.00	0.66	22.9	0.23
9783-RU-141006-07-12	0.84	0.82	17.05	0.75	26.85	0.26

Note: Portable ISOCS units (HRGS) were used to assay individual Stockpile 8b soil piles. The higher of the sample result, or MDC is reported above.

APPENDIX A
ProUCL 5.1 OUTPUT**STATISTICAL SUMMARY FOR REUSE STOCKPILE 8a**

UCL Statistics for Uncensored Full Data Sets

User Selected Options

Date/Time of Computation ProUCL 5.18/15/2016 3:19:16 PM
From File SP8a Weighted SOF.xls
Full Precision OFF
Confidence Coefficient 95%
Number of Bootstrap Operations 2000

Weighted SOF

General Statistics

Total Number of Observations	256	Number of Distinct Observations	256
		Number of Missing Observations	0
Minimum	0.0276	Mean	0.222
Maximum	0.721	Median	0.204
SD	0.125	Std. Error of Mean	0.0078
Coefficient of Variation	0.561	Skewness	0.88

Normal GOF Test

Shapiro Wilk Test Statistic	0.933	Shapiro Wilk GOF Test	
5% Shapiro Wilk P Value	3.331E-16	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.0798	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.0558	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.235	95% Adjusted-CLT UCL (Chen-1995)	0.236
		95% Modified-t UCL (Johnson-1978)	0.235

Gamma GOF Test

A-D Test Statistic	0.611	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.76	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.0469	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.0575	Detected data appear Gamma Distributed at 5% Significance	

APPENDIX A ProUCL 5.1 OUTPUT

Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics			
k hat (MLE)	3.116	k star (bias corrected MLE)	3.082
Theta hat (MLE)	0.0714	Theta star (bias corrected MLE)	0.0722
nu hat (MLE)	1595	nu star (bias corrected)	1578
MLE Mean (bias corrected)	0.222	MLE Sd (bias corrected)	0.127
		Approximate Chi Square Value (0.05)	1487
Adjusted Level of Significance	0.0491	Adjusted Chi Square Value	1486

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	0.236	95% Adjusted Gamma UCL (use when n<50)	0.236
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Lognormal GOF Test

Shapiro Wilk Test Statistic	0.968	Shapiro Wilk Lognormal GOF Test	
5% Shapiro Wilk P Value	0.0024	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0664	Lilliefors Lognormal GOF Test	
5% Lilliefors Critical Value	0.0558	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-3.588	Mean of logged Data	-1.672
Maximum of Logged Data	-0.327	SD of logged Data	0.61

Assuming Lognormal Distribution

95% H-UCL	0.243	90% Chebyshev (MVUE) UCL	0.254
95% Chebyshev (MVUE) UCL	0.267	97.5% Chebyshev (MVUE) UCL	0.284
99% Chebyshev (MVUE) UCL	0.319		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.235	95% Jackknife UCL	0.235
95% Standard Bootstrap UCL	0.235	95% Bootstrap-t UCL	0.235
95% Hall's Bootstrap UCL	0.235	95% Percentile Bootstrap UCL	0.235
95% BCA Bootstrap UCL	0.235		

APPENDIX A

ProUCL 5.1 OUTPUT

90% Chebyshev(Mean, Sd) UCL	0.246	95% Chebyshev(Mean, Sd) UCL	0.256
97.5% Chebyshev(Mean, Sd) UCL	0.271	99% Chebyshev(Mean, Sd) UCL	0.3

Suggested UCL to Use

95% Approximate Gamma UCL	0.236
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

APPENDIX B
ProUCL 5.1 OUTPUT
STATISTICAL SUMMARY FOR REUSE STOCKPILE 8b
UCL Statistics for Uncensored Full Data Sets

User Selected Options
Date/Time of Computation ProUCL 5.18/17/2016 9:25:44 AM
From File SP8b Weighted SOF.xls
Full Precision OFF
Confidence Coefficient 95%
Number of Bootstrap Operations 2000

Weighted SOF

General Statistics			
Total Number of Observations	108	Number of Distinct Observations	108
		Number of Missing Observations	0
Minimum	0.0238	Mean	0.171
Maximum	0.448	Median	0.165
SD	0.0789	Std. Error of Mean	0.00759
Coefficient of Variation	0.46	Skewness	0.889

Normal GOF Test			
Shapiro Wilk Test Statistic	0.95	Shapiro Wilk GOF Test	
5% Shapiro Wilk P Value	0.00146	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.0771	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.0855	Data appear Normal at 5% Significance Level	
Data appear Approximate Normal at 5% Significance Level			

Assuming Normal Distribution			
95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.184	95% Adjusted-CLT UCL (Chen-1995)	0.185
		95% Modified-t UCL (Johnson-1978)	0.184

Gamma GOF Test			
A-D Test Statistic	0.652	Anderson-Darling Gamma GOF Test	
5% A-D Critical Value	0.756	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.0789	Kolmogorov-Smirnov Gamma GOF Test	
5% K-S Critical Value	0.0876	Detected data appear Gamma Distributed at 5% Significance Level	

APPENDIX B

ProUCL 5.1 OUTPUT

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics			
k hat (MLE)	4.425	k star (bias corrected MLE)	4.308
Theta hat (MLE)	0.0387	Theta star (bias corrected MLE)	0.0398
nu hat (MLE)	955.8	nu star (bias corrected)	930.5
MLE Mean (bias corrected)	0.171	MLE Sd (bias corrected)	0.0826
		Approximate Chi Square Value (0.05)	860.7
Adjusted Level of Significance	0.0478	Adjusted Chi Square Value	859.8

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.185	95% Adjusted Gamma UCL (use when n<50)	0.185
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Lognormal GOF Test

Shapiro Wilk Test Statistic	0.949	Shapiro Wilk Lognormal GOF Test	
5% Shapiro Wilk P Value	0.00128	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.112	Lilliefors Lognormal GOF Test	
5% Lilliefors Critical Value	0.0855	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-3.736	Mean of logged Data	-1.881
Maximum of Logged Data	-0.804	SD of logged Data	0.521

Assuming Lognormal Distribution

95% H-UCL	0.192	90% Chebyshev (MVUE) UCL	0.202
95% Chebyshev (MVUE) UCL	0.215	97.5% Chebyshev (MVUE) UCL	0.232
99% Chebyshev (MVUE) UCL	0.266		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.184	95% Jackknife UCL	0.184
95% Standard Bootstrap UCL	0.184	95% Bootstrap-t UCL	0.185
95% Hall's Bootstrap UCL	0.185	95% Percentile Bootstrap UCL	0.184
95% BCA Bootstrap UCL	0.185		
90% Chebyshev(Mean, Sd) UCL	0.194	95% Chebyshev(Mean, Sd) UCL	0.204

APPENDIX B

ProUCL 5.1 OUTPUT

97.5% Chebyshev(Mean, Sd) UCL 0.219 99% Chebyshev(Mean, Sd) UCL 0.247

Suggested UCL to Use

95% Student's-t UCL 0.184

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.