



**Data Validation Report
SDG 160-18638-1**

**Characterization of Structures, Items, Solutions, and Soil at the
Proposed Outfall 200 Treatment System Sites
Y-12 National Security Complex**

Revision 0

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Validated by: *Dianne McNeill* Date: 10/14/2016
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SCOPE

This report contains validation results for Laboratory Job No. 160-18638-1 containing two bulk samples submitted for asbestos content analysis. The samples were analyzed for asbestos at the TestAmerica Richland laboratory.

METHOD

The analytical data were validated using guidelines provided in the applicable portions of the *Characterization of Structures, Items, Solutions, and Soils at the Proposed Outfall 200 Treatment Systems Site Work Plan (AC-4326-002-WP)* and the *Sampling and Analysis Plan/Quality Assurance Project Plan for Geotechnical and Waste Characterization of the Outfall 200 Mercury Treatment Facility Area at the National Security Complex, Oak Ridge, Tennessee (DOE/OR-01-2657&D1) (SAP/QAPP)*.

VERIFICATION AND VALIDATION RESULTS

Completeness

Results for two bulk samples (Job No. 160-18638-1, Lot J6H240413, Sample Delivery Group [SDG] J18638-1) were evaluated. Asbestos content analysis was performed by TestAmerica (TA)-Richland. The following lists analytical methods and sample numbers for reported results.

Analysis	Laboratory	Method	Project Sample ID Numbers
Asbestos	TA-Richland	Polarized Light Microscopy (PLM) by National Institute for Occupational Safety and Health (NIOSH) Method 9002	YMT4A88 RF (M85RX) YMT4A90 IN (M85R1)

Holding times

The date of sample collection (08/15/16) and date of sample analysis (09/07/16) were evaluated. The holding time for asbestos is “indeterminate”. Recommended holding times per the analytical methods were considered to have been met.

Preservation and Laboratory Sample Receipt

All samples arrived at the laboratory intact and in good condition under valid chain of custody (COC). The COC was signed indicating the samples were appropriately relinquished by the samplers and sample transporter and accepted by the analytical laboratory. Custody seals were noted by the laboratory to be signed and intact on the shipping container at receipt. Samples were noted to be in bags rather than in glass as per the SAP/QAPP and method. The type of bags was not noted. Contamination is the primary concern for samples collected into plastic bags; however, no contamination was evident and no qualifications were required.

Analytical Methods, Reporting Units, and Detection Limits

All analytical methods specified (or equivalent to those specified) on the COC (COC No. 160-91468.1) were utilized for the analyses. All results were reported in appropriate units. The detection limits were appropriate.

Transcription (COC and Lab Data)

There were no transcription errors in sample numbers or other information listed on COCs and in data reports that would impact the results.

Trip Blank

Not Applicable.

Equipment Blanks (EB)

Not applicable.

Field Blank (FB)

Not applicable.

Duplicates

Not applicable.

Laboratory Case Narratives

The laboratory case narrative did not indicate any issues with the analyses.

Verification/Validation Checklists, Data Qualifiers, and Qualifier Definitions

Verification and validation checklists are presented in Appendix A and Appendix B. Validation qualifier codes are defined in SAP/QAPP and show in the table below. No qualifiers were assigned to the data evaluated for this report.

Qualifier or Reason Code	Definition
J	Result is estimated
U	Analyte is not detected at or above the stated reporting limit
R	Result is rejected
UJ	Analyte is not detected but there is uncertainty about the reporting limit

Asbestos

Two samples were analyzed for asbestos content. Holding times, reported techniques and logs were acceptable for all methods.

Asbestos by PLM

Asbestos analysis by PLM was performed. Sample YMT4A88RF was noted as having two distinct layers. Both layers were evaluated and reported; however, a total asbestos content (nondetect [ND]) was also reported for the sample. All asbestos ND for both samples. Results were acceptable and no qualifications are necessary.

Summary

No qualifiers were assigned to the data evaluated for this report.

Appendix A
Verification Summary Tables

Data Verification	Y	N	N/A	Comment
Custody of Samples				
Are samples traceable through inspection of signature records on field and laboratory chains of custody (COCs)?	Y			
Has contractual turn-around time been met for all samples?	Y			
Have all samples been preserved correctly and pertinent documentation included?			N/A	
Is the laboratory log in sample receipt checklist present	Y			
Are any sample receipt non-conformances noted?		N		
Standard Traceability				
Have certificate(s) been included for the LCS and MS?			N/A	
Standards have not exceeded the certificate expiration date			N/A	
Are chemical standards and reference materials traceable to a reliable source? (Reagent traceability summary)			N/A	
Analytical Completeness				
Are all COC samples and associated analytical results reported in the laboratory data package?	Y			
Data Summaries				
The case narrative is present and summarizes the sample receipt and analysis information including any analytical anomalies for all methods reported in the data package.	Y			
Other data summary forms are present as applicable (detection, sample results, surrogate, tracer/carrier, QC results and association, prep and analysis chronicle, method and sample summaries)	Y			
Sample Data				
Is the Sample Data included for each COC requested analytical method?	Y			
Is the calibration data included for each method? (ICAL, ICV, CCAL as required for each method)			N/A	
Are the QC summary forms included for each method? (MB, ICS/CCB, LCS/LCSD, MS/MSD, surrogates, internal standards, serial dilution as required and applicable for each method)			N/A	
Are the method run logs and/or bench sheets included	Y			

Data Verification	Y	N	N/A	Comment
for each method?				
Are the method preparation/extraction logs included for each applicable method?			N/A	
Is the sample and QC raw data included for each method?			N/A	
Is the internal Laboratory Review documented by checklists and included in the data package?	Y			

Appendix B
Validation Summary Tables

Asbestos by Polarized Light Microscopy	Y	N	N/A	Qualifier	Comment or Reason Code
Preservation and Holding Times					
Were samples properly preserved?			N/A	None	Samples were noted as received in bags, rather than bottles per the method and the approved QAPP; however, all samples were ND for asbestos content, so no contamination is evident and no qualifications are needed.
Have the samples been analyzed within holding times?			N/A	None	Asbestos has a holding time of "indefinite". Samples were evaluated 23 days after collection.
<i>Detection Limits</i>					
Do all laboratory RLs <= recommended reporting limits in the SAP?		Y			
Asbestos Content Evaluation					
Were each of the listed parameters evaluated? Actinolite Amosite Anthophyllite Chrysotile Crocidolite Tremolite		Y			
Laboratory Duplicate					
Has at least one laboratory duplicate been prepared for up to 20 samples?	N				No duplicate was prepared or evaluated in association with the two samples in this SDG. No qualifications are needed.

Asbestos by Polarized Light Microscopy	Y	N	N/A	Qualifier	Comment or Reason Code
<i>Overall Evaluation</i>					
Were any issues or anomalies noted?	Y				Sample YMT4A88RF was noted as having two distinct layers. Both layers were evaluated and reported; however, a total asbestos content (ND) was also reported for the sample.

Analytical Data Review Verification Checklist

Laboratory:	TestAmerica	SOW or Contract No.:	Outfall 200
Verifier Name:	JD Milloway	Date Verified:	9/16/16
SDG No(s).	18638-1		

Item No.	Criteria	Acceptable?				Comments
		Yes	No	NA	NR	
1.	Case Narrative Present	X				
2.	Lab Qualifiers Present	X				
3.	Methods Specified in SAP or Equivalent Methods were Used	X				Asbestos results only
4.	Data is Complete for All Requested Analytes with All Samples	X				
5.	Units are as Specified in SOW/Contract or Otherwise are Appropriate	X				
6.	Detection Limits Meet Contract Required Detection Limits or Other Project Defined Limits (e.g., regulatory limits)	X				
7.	Samples IDs and Analytes Agree with those on COCs	X				
8.	Samples IDs Agree Throughout Report	X				
9.	Raw Data Results Agree with Data Reports and Electronic Data	X				
10.	COCs – Samples Traceable	X				
11.	All Samples Preserved Correctly			X		
12.	Samples Arrived Intact	X				
13.	Custody Seals on Samples			X		COC seals on coolers only
14.	Holding Times Met			X		Asbestos results only
	-Metals other than Mercury ≤ 180 days			X		
	-Mercury ≤28 days			X		
	-TCLP Metals other than Mercury to TCLP Extraction ≤180 days			X		
	-TCLP Metals other than Mercury TCLP Extraction to Analysis ≤180 days			X		
	-TCLP Mercury to TCLP Extraction ≤28 days			X		
	-TCLP Mercury TCLP Extraction to Analysis ≤28 days			X		
	-VOAs to Extraction/Analysis ≤14 days			X		
	-SVOAs to Extraction ≤7 days (liquids),			X		

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Item No.	Criteria	Acceptable?				Comments
		Yes	No	NA	NR	
	≤14 days (solids)					
	-SVOAs Extraction to Analysis ≤40 days			X		
	-Pesticides to Extraction ≤7 days (liquids), ≤14 days (solids)			X		
	-Pesticides Extraction to Analysis ≤40 days			X		
	-Herbicides to Extraction ≤7 days (liquids), ≤14 days (solids)			X		
	-Herbicides Extraction to Analysis ≤40 days			X		
	PCBs - none			X		
	-TCLP VOAs to TCLP Extraction ≤14 days			X		
	-TCLP VOAs TCLP Extraction to Analysis ≤14 days			X		
	-TCLP SVOAs to TCLP Extraction ≤14 days			X		
	-TCLP SVOAs TCLP Extraction to Prep Extraction ≤7 days			X		
	-TCLP SVOAs Prep Extraction to Analysis ≤40 days			X		
	-TCLP Pesticides to TCLP Extraction ≤14 days			X		
	-TCLP Pesticides TCLP Extraction to Prep Extraction ≤7 days			X		
	-TCLP Pesticides Prep Extraction to Analysis ≤40 days			X		
	-TCLP Herbicides to TCLP Extraction ≤14 days			X		
	-TCLP Herbicides TCLP Extraction to Prep Extraction ≤7 days			X		
	-TCLP Herbicides Prep Extraction to Analysis ≤40 days			X		
	TOC ≤28 days			X		
	-Hexane Extractable Material, Oil and Grease ≤28 days			X		

Analytical Data Review Verification Checklist

Laboratory:	TestAmerica	SOW or Contract No.:	Outfall 200
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SDG No(s).	18638-1		

Item No.	Criteria	Acceptable?				Comments
		Yes	No	NA	NR	
	-Chloride, Fluoride, Nitrate, Sulfate ≤28 days			X		
	-Cyanide ≤14 days			X		
	-Sulfide ≤7 days			X		
	-pH – immediately			X		
	-Specific Conductance - immediately			X		
	-Radionuclides 180 days (best practice)			X		