

N00639.AR.002489
NSA MID SOUTH
5090.3a

SAMPLING AND ANALYSIS PLAN (SAP) MODIFICATION 3 FORM FOR THE SAMPLING
AND ANALYSIS PLAN FOR AREA OF CONCERN (AOC) A AND SOLID WASTE
MANAGEMENT UNIT (SWMU) 15 MILLINGTON SUPPACT TN
12/15/2015
RESOLUTION CONSULTANTS

Site Name: SWMU 15 – Former North Fuel Farm (Mod 3)		Location: NSA Mid-South; Millington, TN		CTO: JM50	
Type of modification:					
<input type="checkbox"/> Analytical method change		<input checked="" type="checkbox"/> Sampling scope (e.g., quantities)		<input type="checkbox"/> Field SOP mod	
<input type="checkbox"/> Lab SOP change		<input type="checkbox"/> Field variance (e.g., location)		<input type="checkbox"/> New field SOP	
<input type="checkbox"/> QA sample mod		<input type="checkbox"/> DQO/screening level change		<input type="checkbox"/> Personnel change	
Document (plan or SOP, including title, revision number, and date):					
<i>Draft Final Sampling and Analysis Plan – Area of Concern A – Fluvial Deposits Groundwater; Naval Support Activity Mid-South; September 2012.</i>					
<i>Draft Final Sampling and Analysis Plan Amendment – Area of Concern A – Fluvial Deposits Groundwater (SWMU 15); Naval Support Activity Mid-South; September 2014.</i>					
Proposed Modification:					
The following changes are being incorporated in the above SAP Amendment for expanding the soil investigation at SWMU 15:					
<ul style="list-style-type: none"> • Screen soil samples at 11 boring locations for organic vapor concentrations and submit two soil samples from each boring for the following laboratory analyses: benzene, toluene, ethylbenzene, xylenes, naphthalene (Method 8260B), and total petroleum hydrocarbons (Method TNEPH). Soil samples will be retained from the terminal depth of the boring (26 to 28 feet) and the highest organic vapor concentrations from 0 to 20 feet interval below ground surface. • Boring locations are shown on Worksheet 17-1. 					
Reason for Change:					
The horizontal extent of soil contaminations remains undefined.					
Effective Date:					
7 December 2015					
Submitted by:			Date:		
Ben Brantley Resolution Consultants Task Order Manager			8 December 2015		
Project QA Officer Approval:			Date:		
Resolution Consultants Quality Assurance Officer 			15 December 2015		
CTO Manager Approval:			Date:		
			8 December 2015		
Internal distribution:					
<input checked="" type="checkbox"/> CTO Manager		<input checked="" type="checkbox"/> QA Officer		<input checked="" type="checkbox"/> Field Team Leader	
				<input checked="" type="checkbox"/> Project file	
External Distribution:					
<input checked="" type="checkbox"/> Navy RPM		<input type="checkbox"/> Navy Chemist		<input type="checkbox"/> EPA Regulator	
				<input checked="" type="checkbox"/> State Regulator	
Attachments:					
The SAP and SAP Amendment cited above will be used and Worksheets that cover the scope changes are attached to this form.					
Worksheet Figure 17-1 Worksheets #18, 19, 20, 30					



SAP WORKSHEET #18: LOCATION-SPECIFIC SAMPLING METHODS/SOP REQUIREMENT TABLE
SAP WORKSHEET #19: FIELD SAMPLING REQUIREMENTS TABLE
SAP WORKSHEET #20: FIELD QUALITY CONTROL SAMPLE SUMMARY TABLE
SAP WORKSHEET #30: ANALYTICAL SERVICES TABLE
 (UFP-QAPP Manual Section 3.1.1), (UFP-QAPP Manual Section 3.5.2.3)

NSA Mid-South CTO JM 50 AOC A				Analysis Group:			Benzene, Ethylbenzene, toluene, xylenes, naphthalene, TPH		
SWMU 15 Soil Investigation (Dec. 2015)				Preparation and Analytical Method:			SW846 5030/8260B & TNEPH		
				Analytical Laboratory SOP Reference:			SOP 202		
Empirical Laboratories, LLC, 621 Mainstream Drive, Suite 270, Nashville, TN 37228, (615) 345-1115, Sonya Gordon, sgordon@empirlabs.com				Data Package Turnaround Time:			21 Days		
				Container Type/Volume Required:			1 – 250mL glass		
				Preservative:			Cool to ≤6°C		
				Holding Time Preparation/Analysis) ¹ :			28 days		
MAP ID	Matrix	Boring ID	Sample ID	X	Y	Depth			
1	Soil	015 SS 63	015SSS63 - depth	TBD	TBD	TBD	1		
1	Soil	015 SS 63	015SSS63 28				1		
2	Soil	015 SS 64	015SSS64 - depth	TBD	TBD	TBD	1		
2	Soil	015 SS 64	015SSS64 28				1		
3	Soil	015 SS 65	015SSS65 - depth	TBD	TBD	TBD	1		
3	Soil	015 SS 65	015SSS65 28				1		
4	Soil	015 SS 66	015SSS66 - depth	TBD	TBD	TBD	1		
4	Soil	015 SS 66	015SSS66 28				1		
5	Soil	015 SS 67	015SSS67 - depth	TBD	TBD	TBD	1		
5	Soil	015 SS 67	015SSS67 28				1		
6	Soil	015 SS 68	015SSS68 - depth	TBD	TBD	TBD	1		
6	Soil	015 SS 68	015SSS68 28				1		
7	Soil	015 SS 69	015SSS69 - depth	TBD	TBD	TBD	1		
7	Soil	015 SS 69	015SSS69 28	TBD	TBD	TBD	1		
8	Soil	015 SS 70	015SSS70 - depth	TBD	TBD	TBD	1		



NSA Mid-South CTO JM 50 AOC A				Analysis Group:			Benzene, Ethylbenzene, toluene, xylenes, naphthalene, TPH
SWMU 15 Soil Investigation (Dec. 2015)				Preparation and Analytical Method:			SW846 5030/8260B & TNEPH
				Analytical Laboratory SOP Reference:			SOP 202
Empirical Laboratories, LLC, 621 Mainstream Drive, Suite 270, Nashville, TN 37228, (615) 345-1115, Sonya Gordon, sgordon@empirlabs.com				Data Package Turnaround Time:			21 Days
				Container Type/Volume Required:			1 – 250mL glass
				Preservative:			Cool to ≤6°C
				Holding Time Preparation/Analysis) ¹ :			28 days
MAP ID	Matrix	Boring ID	Sample ID	X	Y	Depth	
8	Soil	015 SS 70	015SSS70 28				1
9	Soil	015 SS 71	015SSS71 - depth	TBD	TBD	TBD	1
9	Soil	015 SS 71	015SSS71 28				1
10	Soil	015 SS 72	015SSS72 - depth	TBD	TBD	TBD	1
10	Soil	015 SS 72	015SSS72 28				1
11	Soil	015 SS 73	015SSS73 - depth	TBD	TBD	TBD	1
11	Soil	015 SS 73	015SSS73 28				1
12	Soil	015 SS 74	015SSS74 - depth	TBD	TBD	TBD	1
12	Soil	015 SS 74	015SSS74 28				1
QA	Field Duplicates						2
QA	Trip Blanks						2
							28



Notes:

VOCs = Volatile organic compounds
SOP = Standard operating procedure
°C = Degrees Celsius
mL = Milliliters
Field Duplicate — One per 20 field samples
MS/MSD — One pair per 20 field samples (including field QC samples)
Trip Blank — One per cooler to the laboratory containing volatiles



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- | | | | |
|------------|---|-----------------|---------------------------------|
| ● (Yellow) | Proposed Soil Sample Location | □ (Grey) | Approximate Structure Location |
| ● (Purple) | Boring Locations | ▬ (Yellow) | Former SWMU 15 Removal Area |
| ● (Black) | Monitoring Well / DPT Groundwater Sampling Point | ▬ (Light Blue) | Benzene > 52 µg/kg (0' to 10') |
| ● (Brown) | Benzene < Leachability Based Cleanup Level | ▬ (Medium Blue) | Benzene > 52 µg/kg (11' to 20') |
| ▼ (Blue) | RFI DPT Fluvial Groundwater Sampling Point | ▬ (Dark Blue) | Benzene > 52 µg/kg (21' to 30') |
| — (Dashed) | Approximate Location of Former Pipe Line | ▬ (Green) | Benzene > 52 µg/kg (21' to 30') |
| — (Solid) | Traces of Cross-sections Shown in Figures 3 and 4 | | |

Notes
 - All units in µg/kg
 - ND - Not Detected
 - NS - Not Sampled due to absent FID/PID readings
 - U = Undetected value
 - Half of the undetected values will be taken as a conservative estimate of Benzene concentrations

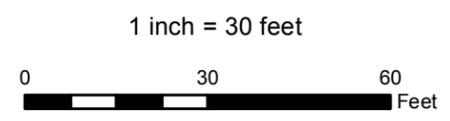


Figure 17-1
 Proposed Soil Sample Locations
 SWMU 15
 NSA Mid-South
 Millington, Tennessee

REQUESTED BY: B. BRANTLEY	DATE: 12/7/2015
DRAWN BY: N. RINEHART	TASK ORDER NUMBER: JM50