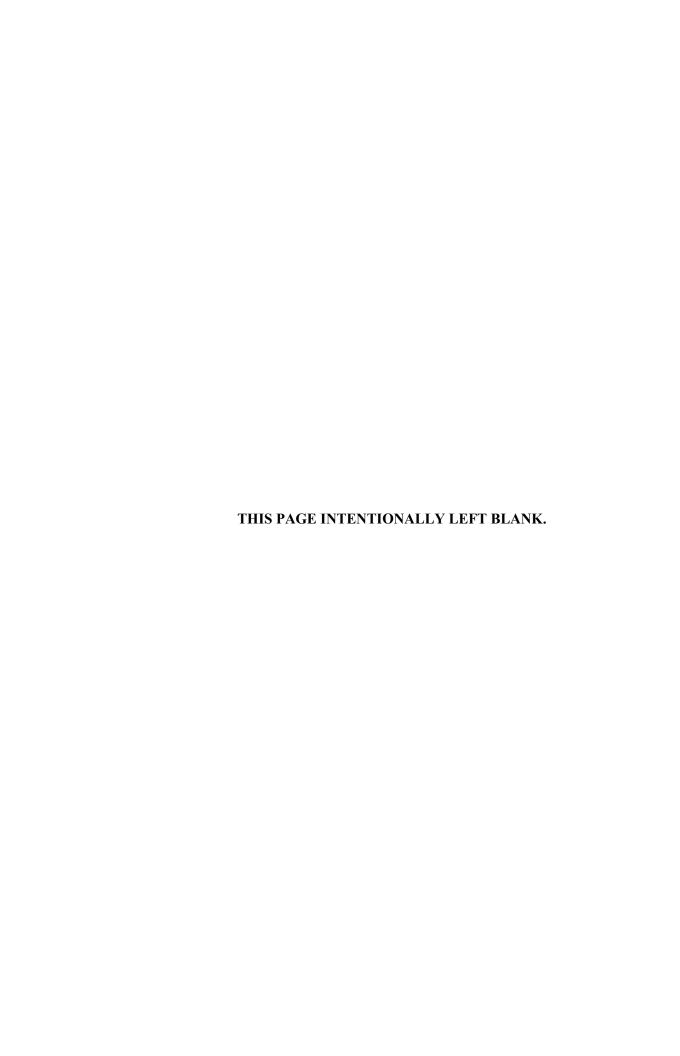
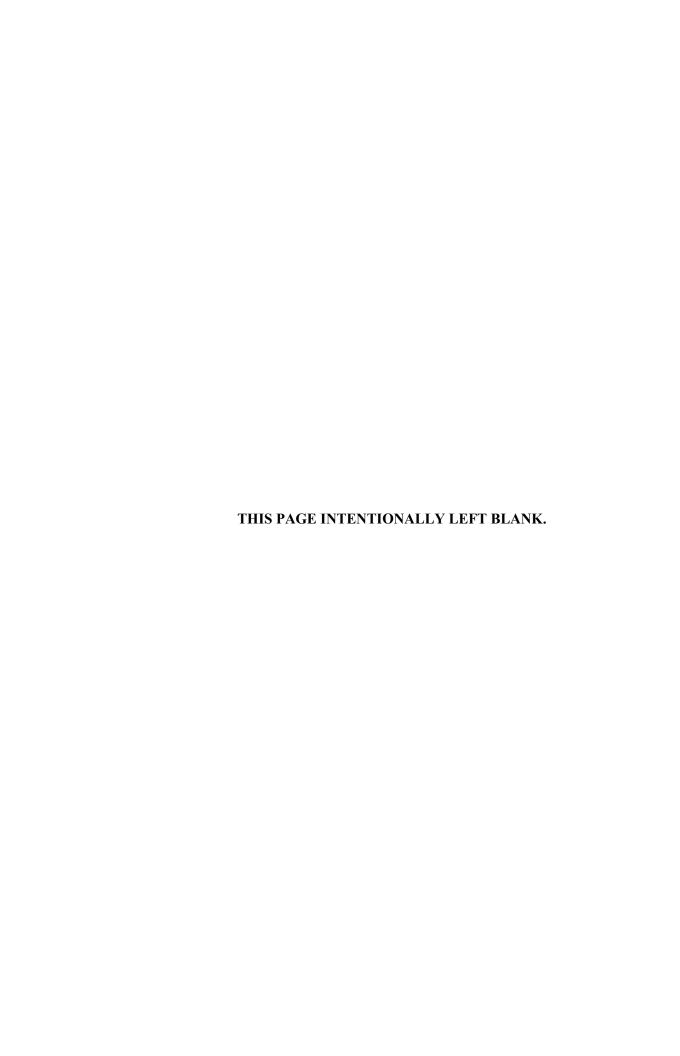
APPENDIX A

Field Sampling Logs

Discrete Surface Soil Samples
Soil Boring Samples
Surface Water and Sediment Samples
August 2012 Sampling







TRW	DRILL	ING L	OG (continued)	DISTRICT	.t			BOREHOLE NUI	-t
	MPANY NAM			USACE - Lou				LUOSS	· \$73
SA		_		NA NA	ONTRACTOR			SHEET 1	OF 1
		MAP OF	3A 2008 PI	4. LOCATIO	N RVAA	P 8451 Sta	te Route 5 Ra	L avenna. OH 4	4266
AME OF DRIL	LER I ANG	RUM	Launch Steve Vi	SOCK V 6. DIRECTIO	ON OF BOREHO		VERTICAL	INCLINED	
IOTES PID I	MAKE/MODEL		Carrier Latines A.	PID SERIAL	#: NA		Colors from	Munsell Soil Color	Chart, Rev
WAT	ER LEVEL MA	KE/MODEL:	NIA	WATER LEV	/EL SERIAL#:	NIA	-	R 2004	1994
ELEVATION	DEPTH	USCS	CLASSIFICAT	ION OF MATERIALS		SPT DATA	MONITORING		MARKS
	(Feet)					(0.5 Feet)	(PPM/CPM)	(Sample IDs/De	epths/Core Box/Etc.)
	ø.25 <u></u>								
	ø.5	G	14						
	0.75				13/				
			SAWDY SILT (S Sands are fine angular, cur	rus (CL) ger	very lowsh			collect Li	uss-173-523
	1		mothing love 5/19 with some ora	1 LOSE ,	gray			FOLFAIT S	1100 1' bys
MMENTS	/ SKETC	н		X			Bato		
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TRW [RILL	ING L	OG (continued)	USACE -	Louisville			BOREHOLE NUME	
	MPANY NAMI		•		SUBCONTRACTOR	R		LUSS-	974
SAI				NA				SHEET 1	OF 1
	70	MW.	PBA2008 RI	4. LOC	ATION RVA	AP 8451 Stat	e Route 5 Ra	l venna, OH 44	266
AME OF DRILL		- /	SOYEY	6. DIRE	ECTION OF BOREH		VERTICAL	INCLINED	DEGREES
OTES PID M	AKE/MODEL:		30104	PID SE	RIAL#:		Colors from	Munsell Soil Color (Chart, Rev
WATE	R LEVEL MA	KE/MODEL:		WATE	R LEVEL SERIAL#:		Y	2004	1994
LEVATION	DEPTH	USCS	CLASSIFICATIO	OF MATERIALS	3	SPT DATA	MONITORING	REM	ARKS
	(Feet)		0.00 (-)		21 6	(0.5 Feet)	(PPM/CPM)		ths/Core Box/Etc.)
			CLAY (CL) TO	ace ar	nourt of			1335	collected
			gravel, very brown love	dark	grayish)		sample	' S
			Beaun 104R	112 m	th			LL 1855-07	74-5239
			Beauti 10-11-	meit	LI MIT			LLLESS-07	14-523F-n
			stiff damp to Plastic some	110191	11011-			FOR TARM	IENTLS,/
			Plastic Some	organi	S Croops.			EUPLOSIUKS	a PAILS
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LOGIST SIGN	ATURE/DATE		Shan palalio	VOC SIGNATUR	E/DATE			BOREHOLE NUM	174
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				DISTRICT	-		BOREHOLE NUMBER	
ITRW D	RILL	ING L	.OG (continued)	USACE - Louisville			LLless-0	75
1. COM	IPANY NAM	E		2. DRILLING SUBCONTRACTO	R			
SAIC)			NA			SHEET 1 OF	1
3. PRO	- VAI	AAP-	PBAOB RI				venna, OH 44266	
NAME OF DRILLE		Visol	ay leyan Launc		HOLE 🔽	VERTICAL	INCLINED	DEGREE
OTES PID MA				PID SERIAL#:			Munsell Soil Color Chart,	
WATER ELEVATION	DEPTH	KE/MODEL: USCS	CLASSIFICATION	WATER LEVEL SERIAL#	SPT DATA	MONITORING	ML 2004 REMARKS	1944
LELVATION	(Feet)				(0.5 Feet)	(PPM/CPM)	(Sample IDs/Depths/C	
			CLAY(CC). LITTLE Dark gray 10418 Yellowish brow 10485/10. medic non-plastic; little	gravel-angular		T	@1140 coll	_
			Dark gray 1041	24/1 with				
			ye navish brow	in mottling			FOR CHLOME	ochie
			IOUR SILE, medin	m stiff wet:			I DIE CHEVILE	que
			non-plastic; little	organies ourd				
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TRW [PRILL	ING L	OG (continued)	USACE - Louisville			LLLess	- 15710
1. CO	MPANY NAM	E		2. DRILLING SUBCONTRACT	TOR		0000	Piu
SAI				NA Section			SHEET 1	OF 1
3. PR	DJECT PV	MAP.	PBAROOS RI	4 LOCATION R	/AAP 8451 Sta	te Route 5 Ra	venna, OH 442	266
IAME OF DRILL	- O 10	Je VI	SOYLY	6. DIRECTION OF BOR	REHOLE	VERTICAL	INCLINED	DEGREES
IOTES PID M	AKE/MODEL:		_ '	PID SERIAL#:		Colors from	Munsell Soil Color Ch	· ·
	R LEVEL MA		1	WATER LEVEL SERIA	1	T	M 2004	1994
ELEVATION	DEPTH (Feet)	USCS	CLASSIFICATIO	ON OF MATERIALS	SPT DATA (0.5 Feet)	MONITORING (PPM/CPM)	REMA (Sample IDs/Depth	
	(1 661)		CIAN (CI) ar	MI INRSI	(0.5 / 661)	(11 WECT W)		collecto
			with clarr	المحترية المحترية			LLLOSS-	i i
			brown 104R	4110 medium			FOLTALM	
			Stiff morst	yellowsh 416 medium some ofsiz leaves)			EXPLOSIVES	apante 1
			organics troc	its ? leaves)			(P. 65. 652	
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OLOGIST SIGN	ATURE/BATI	= -		DA/QC SIGNATURE/DATE			BOREHOLE NUMB	ER
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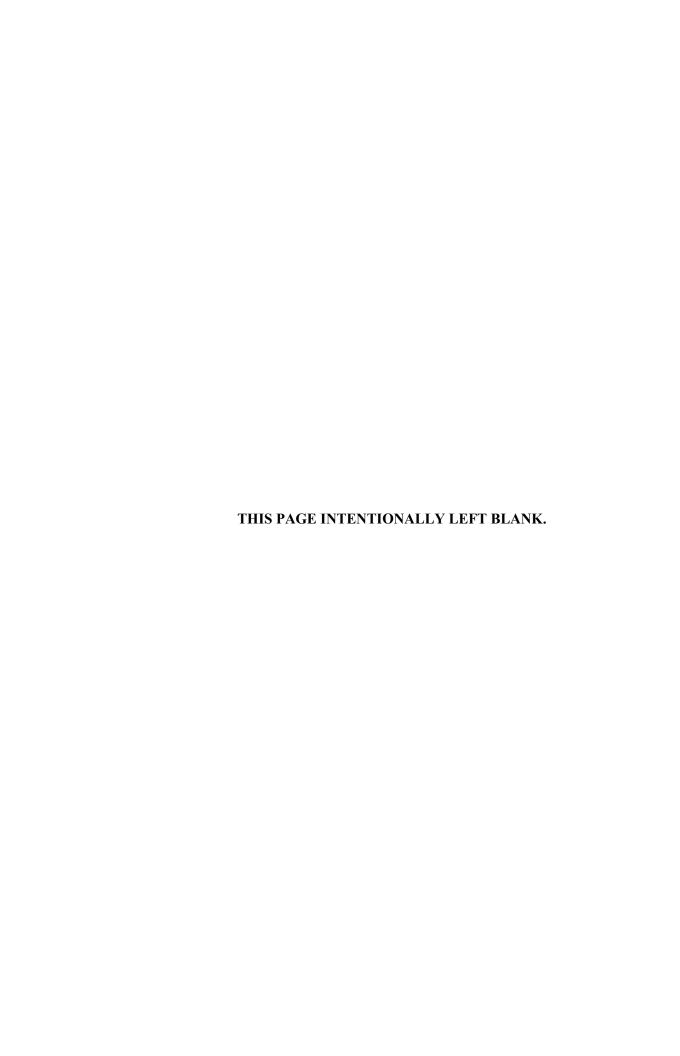
TRW D	RILL	ING I	_OG	USACE - Louisville			LL655-677
1. COI	MPANY NAM	1E	0. 99	2. DRILLING SUBCONTRAC	CTOR		
SAIC	3			NA			SHEET 1 OF
		VAAID	PBA 08-27		VAAP 8451 St	ate Route 5 R	l avenna, OH 44266
IAME OF DRILL			Leskrine	6. DIRECTION OF BO		VERTICAL	INCLINED DEGR
IOTES PID M	AKE/MODEL		A	PID SERIAL#:	NA		Munsell Soil Color Chart, Rev
WATE	R LEVEL MA	/ // :AKE/MODEL	: ,10° A	WATER LEVEL SERIA	AL#: NA		2000 Rev ED
ELEVATION	DEPTH	uscs	CLASSIFICATION	OF MATERIALS	SPT DATA	MONITORING	REMARKS
	(Feet)				(0.5 Feet)	(PPM/CPM)	(Sample iDs/Depths/Core Box/
			SILT (ML). Some C	May, and med. Sar	nd		LL655-077-5247
•		ML	Significant organi	125 Throughout	1		P 1025
			Bon = 10 42 4/2 m	and Sille News	1		for Tutal Cr +
	:	10. 17	Brown 10 YR 4/3, m med. Plastic, Trace	Chia	History		Hex Cn:
			lestic, I ruce	FINE GRAVI.	429		
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i			CLAY(CL), Som	e Si H. Truce For			
		10	Supangular Conval				
		CL	med. Plastiz to be Damp, trace Some	Yellowith Brown	h	Ī	
			mad Strains di	1045 2/1 20 ft,			
			Men. 1-123+12 10 1	lighly Plastici			
			Damp, I race Som	d that is			
	i i		Palenel 10 R 6/4	•			
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1			BORING COMPLETE	LILLING A 2" CC	HAND AUG	40	
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				DISTRICT			BOREHOLE NUMBER	
ITRW	DRILL	ING L	.OG (continued)	USACE - Louisville			11 loss 078	3
1. CC	MPANY NAM	E		2. DRILLING SUBCONTRACTO	OR .		SHEET 1 OF	1
SAI				NA			SHEET TOP	
3. PR	ROJECT RV	PAP-	PBA 2008 EI				evenna, OH 44266	_
NAME OF DRIL	MAKE/MOĎEL		cich Skue Visore	41		VERTICAL Colors from	Munsell Soil Color Chart, Re	DEGREES
	ER LEVEL MA			PID SERIAL#:	#:		Mulisell Soll Color Chart, Re	4
ELEVATION	DEPTH	USCS	CLASSIFICATION		SPT DATA	MONITORING	REMARKS	/
	(Feet)				(0.5 Feet)	(PPM/CPM)	(Sample IDs/Depths/Core	Box/Etc.)
			CLAY (CL). Gra YEllawish bro 10412 5/10. tra cocurse sand. Low plasticity (ROOTS & 10018	y IOLES/I with			1100 collec	ten
			YEllowish bro	un mottling			W655078-	
		1	10416 5/10: tra	ce amount of			LL655-1076-1	20595
			coarse sand.	soft weter moist.			Wess-078-6	059-1
			Low plasticity	oeganics '			FOR TACMETAC	
		OL-	LROUTS 2 1EAULS	<i>y.</i>			ENDOSIVESAD	MYS
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		DISTRICT			BOREHOLE NUMBER
ITRW DRILLING LO	(continued) خ	USACE - Louisville			LL655-679
1. COMPANY NAME		2. DRILLING SUBCONTRACTO	DR .		
SAIC		NA			SHEET 1 OF 1
3. PROJECT ROADS PBF	12000 EI	4. LOCATION RVA	AAP 8451 Sta	te Route 5 Ra	ivenna, OH 44266
NAME OF DRILLER PLYAN) auri		6. DIRECTION OF BORE	HOLE 🔽	VERTICAL	INCLINED DEGREES
NOTES PID MAKE/MODEL:		PID SERIAL#:		Colors from	Munsell Soil Color Mart, Rev
WATER LEVEL MAKE/MODEL: -		WATER LEVEL SERIAL#	*		re 2004 1994
ELEVATION DEPTH USCS (Feet)	CLASSIFICATION	OF MATERIALS	SPT DATA	MONITORING	REMARKS
	LAY LALJORD	= ~ ~ (sc).	(0.5 Feet)	(PPM/CPM)	(Sample IDs/Depths/Core Box/Etc.)
	ome entri	SARCO (SC)			Proto collect
	rave 1. cla	Scre Brown			LL685-67952
10	4R 513 and	and trace Sure Brown sands are			FOR TAL METALSO
CL 5'	mong brown	TESYE US			Eaplosives 2 PMS
S	oft moist	clay 15 Low			/
PI	asticity ar	TOSYR US. clay 15 Low Id sands are rganics (losse)	,		/
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TRW DRILLING LOG (continued)	DISTRICT	BOREHOLE NUMBER
1. COMPANY NAME	USACE - Louisville 2. DRILLING SUBCONTRACTOR	LL685-120-
		SHEET 1 OF 1
SAIC 3. PROJECT THE PROJECT TO SAIC THE	NA I. LOCATION RVAAP 8451 State Route	5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
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TES PID MAKE/MODEL:	TV VENTIONE	rs from Munsell Soil Color Chart, Rev
WATER LEVEL MAKE/MODEL:	WATER LEVEL SERIAL#:	RC 2007 1994
	TION OF MATERIALS SPT DATA MONITO	
(Feet)	(0.5 Feet) (PPM/C	PM) (Sample IDs/Depths/Core Box/Etc.
CLAY (CL)	TEACE Gravel-	1015 collected
angular. Gr	rayish Braun	LL6SS-080-56
104R 517 CU	TEACE Gravel- ray 15h Brown and Brownish	LCC 35 400 se
YELLOW 104R	- blu soft	FOR CHEOME Specia
damp, med	Lolle soft. rum plasticity, cs (roots).	
1 male organi	CS (roots).	
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	OWING A 3" SS HAND AUGGE	
MMENTS / SKETCH		/
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		LI4 -003
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	DI	STRICT						BOREHOLE NUM	BER
HTRW DRILLING LOG	U	SACE - Lo	uisville					LLOSE	800-6
1. COMPANY NAME	2.	DRILLING SUB	CONTRAC	TOR				- 3300	
SAIC 3. PROJECT D. LAWO ON THE COMP	F	rontz Drillin						SHEET 1	_
I PURINE REPUIR KI			CATION	RVA	AP 845	1 State F	Route 5	Ravenna, O	H 44266
5. NAME OF DRILLER JEKEMY LECKRONE; FRON 7. SIZES AND TYPES OF SAMPLING EQUIPMENT	rz Den			L OF DRIL		Geopro	be (620 DT	
3 3 HAND AUGER		8. BC	HEHOLE	LOCATION	553	19.65	20,2	353794.	3176
		9. 50	HEAGE E	EVAIION	DATUM	NADS	3		
1.5" x4 ACETATIE LINE	R	15. D	EPTH GRO	UITTO DUNDWAT	STARTED:	104 Intered	5	COMPLETED:	15p
2" Dun Tube		16. D	EPTH TO	WATER/EL	APSED TII		NH BOREHO	LE COMPLETION	
12. OVERBURDEN THICKNESS 3+ FT 13. DEPTH DRILLED INTO BEDROCK NA		47.0	THE WAY			<u>NA</u>			
14. TOTAL DEPTH OF BOREHOLE 13 FT			IHEH WA	IER LEVE	L MEASUR	EMENTS (IN	ILCLUDE	DATE/TIME)	-
18. GEOTECHNICAL SAMPLES UNDISTURBED: NA	DIS	STURBED: NA	····	T:	9. TOTAL	NUMBER O	CORE	BOXES NA	
20. CHEMICAL SAMPLES CHEM: HET/EVA / PAR PA			R: NA					ORE RECOVERY 9	° NA
22. DISPOSITION OF BOREHOLE DATE STARTED/INSTALLE	0:03/01/				OMPLETE	D/ABANDO	VED:		1007
BACKFILL TYPE: GROUT BENTONITE	ſ	TEMPORAR	Y WELL P	OINT	ſ	MONITORI	NG WEL	L	
23. NOTES BKG: ≤ Background BGS: Below Groun	d Surface	СРМ	Counts	oer Minut	9	PPM: Par	ts per M	lillion	
: First Water Encountered	: Static V	Vater Level		NA: No	t Applical	ble			
LOCATION SKETCH/COMMENTS						SCALE	;	None	
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OLOGIST SIGNATURE/DATE Amanda Onerto 03/01/10	OAVOC SIGN	NATURE/DATE		3/12				PREHOLE NUMBER	





Driller : Jeremy Leckrone
Designation of Drill : Geoprobe 6620DT
Type of Drill Rig : Direct Push Technology
Geologist : Amanda Trenton

RVAAP PBA 2008 Remedial Investigation Ravenna Army Ammunition Plant 8451 State Route 5 Ravenna, Ohio 44266 Portage County

 Start Date
 : 03/01/10; 1045

 End Date
 : 03/01/10; 1150

 Northing Coord.
 : 553619.6520

 Easting Coord.
 : 2353794.3176

Total Depth of Boring : 13.0 ft

Oversight Company
Borehole Diameter

Drilling Company

Sampling Equipment : 1.5" x 4' Long Acetate Liner

: 2" x 4' Dual Tube : 3" Hand Auger

: Frontz Drilling

: SAIC

			Portage County	Total Depth of Boring : 13.0	O IL			. 5 Hand Auger
Depth in feet	USCS Symbol	USCS Graphic	Descriptio	n	Analyses	Recovery	Collection Interval	Comments
0-			(0.0' - 1.1') CLAY and medium to fin	o grained SAND (SC)				Soil Color Chart
1-	sc		trace Gravel, 1/2" - 3", subangular; soft; damp; medium plasticity; roots throughout, trace brick and sandsto	IOYR3/3 dark brown; and organics ne fragments.	LL6sb-068-5215-SO collected from 0.0' - 1.0' or 03/01/10 at 1105 for TAL	1.0'/1.0'		Munsell 2000 Rev. Ed.
2-	CL		(1.1' - 2.9') CLAY (CL); trace fine grabrown with 10YR6/6 brownish yellow 10YR4/1 dark gray mottling; soft; daplasticity.	v and trace	Metals + Hg, PAHs, and Explosives.			
-					LL6sb-068-5216-SO collected from 1.0' - 4.0' or	2.1'/3.0'		
3-	ML		(2.9' - 4.2') SILT (ML); little Clay; training and Gravel, 1/4", subrounded; 2.5Y-10YR5/3 brown, and 10YR4/4 dark soft; damp to day.	1/4 olive brown,	03/01/10 at 1130 for TAL Metals + Hg, PAHs, and Explosives.			
4-			soft; damp to dry.	0 1 4/4"				
5— 5— 6—	CL		(4.2' - 8.4') CLAY (CL); little Silt; trac subangular; 7.5YR4/6 strong brown and 10YR5/4 yellowish brown; stiff; Silt content decreases with depth. (4.5' - 6.2') Color is 10YR5/1 gray w yellowish brown mottling. (6.2' - 8.4') Color is 10YR4/3 brown pale brown mottling.	mottled 2.5Y6/1 gray dry; low plasticity. th 10YR4/6 dark	LL6sb-068-5217-SO collected from 4.0' - 7.0' or 03/01/10 at 1150 for TAL Metals + Hg, PAHs, and Explosives.	2.85'/3.0'		
7- 								
9-	sc		(8.4' - 9.6') Clayey SAND (SC); trace subrounded; 10YR4/4 dark yellowis stiff; damp. (9.0 - 9.6') Stiffer; increased clay con	h brown; medium		2.55'/3.0'		
10-			(9.6 - 13.0) Fine Grained SAND (SV medium dense; damp; nonplastic. (10.0' - 13.0') Trace lenses of moisti	,.	LL6sb-068-5218-SO collected from 7.0' - 13.0' o 03/01/10 at 1210 for TAL Metals + Hg, PAHs, and	on		
11-	sw				Explosives.	2.9'/3.0'		
12-								0
13-			Boring terminated at 13.0 ft bgs.					Coordinate System: NAD 83
		Ш						

Boring backfilled with sodium bentonite chips and hydrated.

0.0' - 1.0' sampled using a 3" hand auger and triangular subsample procedure for explosives as presented in Section 4.5.2.1.1 of the Facility-Wide SAP. Sampes were composited and homogenized for all analyses.

LITEW DOLLARS LOS	DISTRICT		BOREHOLE NUMBER
HTRW DRILLING LOG	USACE - Louisville		LL650-069
1. COMPANY NAME	2. DRILLING SUBCONTRACTOR		
SAIC	Frontz Drilling		SHEET 1 OF 2
3. PROJECT RUMAP PBA 08 RI	4. LOCATION R	VAAP 8451 State Route	5 Ravenna, OH 44266
5. NAME OF DRILLER TEREMY LECURALE 7. SIZES AND TYPES OF SAMPLING EQUIPMENT	6. MAKE/MODEL OF	DRILL Geoprobe (OLOZA DT
7. SIZES AND TYPES OF SAMPLING EQUIPMENT	8. BOREHOLE LOCA	FION FIFETULL 71125	2353472.2318
3" ST HAND AUGER 1.5" X 4" ACETAGE LINER	3. SUNFACE ELEVAT	ION/DATUM LIAD &3	
1.5" X 4' ACETAGE LINER	02225110	* STARTED: 14(1)(0)	COMPLETED: 1570
2" DUAL TUBE	15. DEPTH GROUND	WATER ENCOUNTERED (A)	
12. OVERBURDEN THICKNESS 3+ FT	16. DEPTH TO WATE	R/ELAPSED TIME AFTER BOREH	OLE COMPLETION
13. DEPTH DRILLED INTO BEDROCK NA	17. OTHER WATER L	EVEL MEASUREMENTS (INLOLUC	DE DATE/TIME)
14. TOTAL DEPTH OF BOREHOLE 3+T		MA	
18. GEOTECHNICAL SAMPLES UNDISTURBED:	DISTURBED:	19. TOTAL NUMBER OF CORE	BOXES NA
20. CHEMICAL SAMPLES CHEMITUS ITE RAD:	NA OTHER: NA		CORE RECOVERY %
22. DISPOSITION OF BOREHOLE DATE STARTED/INSTALLED: 02/2		TE COMPLETED/ABANDONED:	
BACKFILL TYPE: ☐ GROUT ☐ BENTONITE		MONITORING WE	•
23. NOTES BKG: ≤ Background BGS: Below Ground Surface			
		: Not Applicable	Wilhiora
	147	. Not Applicable	
LOCATION SKETCH/COMMENTS		SCALE:	None
/			
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EOLOGIST SIGNATURE/DATE QA/QC	SIGNATURE/DATE	IF	BOREHOLE NUMBER
(imanda hante ostalia)	Xx Wisel	3/12/10	LL656-069
WILLIAM WILLIAM VI		410114	





Designation of Drill
Type of Drill Rig
Geologist

Driller

Drilling Company

: Frontz Drilling : Jeremy Leckrone : Geoprobe 6620DT : Direct Push Technology

: 1.5" x 4' Long Acetate Liner

eologist : Amanda Trenton

Oversight Company : SAIC Borehole Diameter : 2"

Sampling Equipment

RVAAP PBA 2008 Remedial Investigation Ravenna Army Ammunition Plant 8451 State Route 5 Ravenna, Ohio 44266 Portage County

 Start Date
 : 02/25/10; 1400

 End Date
 : 02/25/10; 1510

 Northing Coord.
 : 553244.7435

 Easting Coord.
 : 2353472.2318

Total Depth of Boring : 13.0 ft

: 2" x 4' Dual Tube : 3" Hand Auger

		_		·			
Depth in feet	USCS Symbol	USCS Graphic	Description	Analyses	Recovery	Collection Interval	Comments
0- - 1- - 2-	CL		(0.0' - 2.75') CLAY (CL); some Silt; 10YR4/3 brown; medium stiff; damp; medium plasticity; debris including wire and slag from 0.0' - 0.5'. (1.25' - 2.75') Introduction of trace Gravel, < 1/4", subrounded; 10YR8/2 very pale brown mottling.	LL6sb-069-5219-SO collected from 0.0' - 1.0' on 02/25/10 at 1412 for VOCs, SVOCs, PCBs, Pesticides, Explosives, Propellants, and TAL Metals + Hg.	1.07/1.01		Soil Color Chart Munsell 2000 Rev. Ed.
3-	sc		(2.75' - 4.35') Fine grained SAND and CLAY (SC), trace Gravel, < 1/4", subrounded; 10YR4/3 brown with trace 2.5YR 6/8 red; medium stiff; damp, moist in pockets.	LL6sb-069-5220-SO collected from 1.0' - 4.0' on 02/25/10 at 1440 for VOCs, SVOCs, PCBs, Pesticides, Explosives, Propellants, and TAL Metals + Hg.	2.35'/3.0'		
5— 5— 6—	SW		(4.35' - 9.3') Fine to very fine grained SAND (SW); little Clay; trace Gravel, < 1/4", subrounded; 10YR4/3 brown with trace 5YR5/8 yellowish red; medium dense; damp. Clay content decreses with depth. Trace clay by 4.75'. Gravel content increases with depth.	LL6sb-069-5221-SO collected from 4.0' - 7.0' on 02/25/10 at 1452 for VOCs, SVOCs, PCBs, Pesticides, Explosives, Propellants, and TAL Metals + Hg.	2.6'/3.0'		
8 — 8 — 9 —			(9.3' - 13.0') SILT and CLAY (ML); trace Gravel; decreasing		2.35'/3.0'		
11-	ML		(9.9' - 10.2') Sand stone fragments. (~11.05' - 13.0') Color is 5Y5/1 gray.	LL6sb-069-5222-SO collected from 7.0' - 13.0' on 02/25/10 at 1509 for VOCs, SVOCs, PCBs, Pesticides, Explosives, Propellants, and TAL Metals + Hg.	3.4'/3.0'		
13-			Boring terminated at 13.0 ft bgs.				Coordinate System: NAD 83

Boring backfilled with sodium bentonite chips and hydrated.

0.0' - 1.0' sampled using a 3" hand auger and triangular subsample procedure for explosives as presented in Section 4.5.2.1.1 of the Facility-Wide SAP. Samples were composited and homogenized for all analyses, except VOCs.

HTRW			DISTRICT				BOREHOLE NUMBER
•	/ DRILLING	LOG	USACE	- Louisville			LL653-97¢
1	. COMPANY NAME			G SUBCONTRACTOR			
i	SAIC		Frontz D	Prilling			SHEET 1 OF 2
3.	PROJECT RUMAP	PEA 08 RT	<u> </u>	4. LOCATION	RVAAP 845	1 State Rout	e 5 Ravenna, OH 44266
5. NAME OF D	TYPES OF SAMPLING EQU	LECKRONE		6. MAKE/MODEL OF	DRILL	Geoprobe	(0(020) Dr
				8. BOREHOLE LOCA	ATION 553	3100 7487	1:2353153.1686
3	" HAND			5. COM NOW ELLVA	HOWDATOW	MAD 83	
	•	CETATE LINER		10. DRILL DATE/TIM 03/01/10 15. DEPTH GROUND	E STARTED	1310	COMPLETED: 1530
	21 DUAL	TUBE				- //	5 HOLE COMPLETION
12. OVERBUR	DEN THICKNESS	3+ FT			EIVEEN OED II	M	
	ILLED INTO BEDROCK	NA		17. OTHER WATER	LEVEL MEASUF	REMENTS (INLCL	JDE DATE/TIME)
14. TOTAL DEF	PTH OF BOREHOLE 13	ITT BOS	****			MA	· ·
18. GEOTECHI	NICAL SAMPLES	UNDISTURBED: NA	DISTURBED	»: NA	19. TOTAL	NUMBER OF CO	RE BOXES NA
20. CHEMICAL		CHEM: EXPLINAT/ANH RAD:	NA	OTHER: NA	·····		L CORE RECOVERY %
	ON OF BOREHOLE	DATE STARTED/INSTALLED	doulio; i	310 0	ATE COMPLETE	D/ABANDONED:	03/01/10:1530
BACKFILL TYP 23. NOTES		BENTONITE	/ TEMP	ORARY WELL POINT		MONITORING V	
.S. NO1ES	BKG: ≤ Background			CPM: Counts per N	/linute	PPM: Parts pe	er Million
	: First Water E	ncountered	Static Water Le	evel N	A: Not Applica	ble	
COCATION	N SKETCH/COMME	ENTS				SCALE:	None
		er or or or or or or or production and pro-					
		Salt			(1658-C		Soto
				X X W—Luss	(1658-C	71	
OLOGIST SIG	NATURE/DATE		×	X N-muss	(1658-C	71	SO TO CY





RVAAP PBA 2008 Remedial Investigation

Ravenna Army Ammunition Plant

8451 State Route 5

Ravenna, Ohio 44266

Portage County

Boring backfilled with sodium bentonite chips and hydrated.

Samples were composited and homogenized for all analyses. Twin boreholes were drilled to obtain volume required for analyses.

0.0' - 1.0' sampled using a 3" hand auger and triangular subsample procedure

for explosives as presented in Section 4.5.2.1.1 of the Facility-Wide SAP.

RVAAP-33 Load Line 6 LL6sb-070

: 23553153.1686

Start Date : 03/01/10; 1310 **End Date** : 03/01/10; 1530 Northing Coord. : 553368.7487

Total Depth of Boring : 13.0 ft

Easting Coord.

Drilling Company : Frontz Drilling Driller : Jeremy Leckrone : Geoprobe 6620DT Designation of Drill

Geologist

Oversight Company

Type of Drill Rig : Direct Push Technology : Amanda Trenton

: SAIC Borehole Diameter Sampling Equipment : 1.5" x 4' Long Acetate Liner

LL6sb-070

: 2" x 4' Dual Tube : 3" Hand Auger

			Total Doputor Botting . To.	* **			-
Depth in feet	USCS Symbol	USCS Graphic	Description	Analyses	Recovery	Collection Interval	Comments
0-				I			
1-	CL		(0.0' - 1.5') CLAY (CL); some medium grained Sand; little 1" subangular Gravel and Slag from 0.0' - 1.0'; 10YR4/4 yellowish brown; Sand is 10YR5/6 yellowish brown and 10YR6/4 pale red; soft; wet to moist from 0.0' - 0.4'; medium plasticity; little organics from 0.0' - 0.5'.	LL6sb-070-5223-SO collected from 0.0' - 1.0' on 03/01/10 at 1330 for TAL Metals + Hg, PAHs, and	1.0'/1.0'		Soil Color Chart Munsell 2000 Rev. Ed.
2-			(1.5' - 5.6') CLAY (CL), trace fine grained Sand, trace Gravel, 1/4" - 1/2"; 10YR4/3 brown with 10YR6/6 brownish yellow and 10YR5/1 gray mottling; medium stiff; dry; medium plasticity.	Explosives. LL6sb-070-5224-SO and MS/MSD collected from 1.0' - 4.0' on 03/01/10 at 1435 for	1.8'/3.0'		
3-	CL			TAL Metals + Hg, PAHs, and Explosives.			
4-			(4.2' - 5.6') Stiff. (4.5' - 5.6') Introduction of 10YR8/2 very pale brown.				
5-				LL6sb-070-5225-SO collected from 4.0' - 7.0' on 03/01/10 at 1515 for TAL	3.0'/3.0'		
6-	sw		(5.6' - 6.5') Fine to very fine grained SAND (SW), little Silt, trace Gravel; 10YR4/4 dark yellowish brown and 2.5YR4/3 reddish brown; medium dense; damp; nonplastic.	Metals + Hg, PAHs, and Explosives.			
7-			(6.5' - 11.5') SILT (ML); some fine and very fine grained Sand; trace Gravel, 1/4" - 1/2", subangular; 10YR4/3 brown; medium dense; dry.				
8-					3.0'/3.0'		
9-	ML						
10-				LL6sb-070-5226-SO collected from 7.0' - 13.0' on 03/01/10 at 1530 for TAL Metals + Hg, PAHs, and			
11-				Explosives.	3.5'/3.0'		
12-	sw		(11.5' - 12.4') Medium grained SAND (SW); 10YR4/3 brown; medium dense; wet; nonplastic. (12.2' - 12.4') Silt content increases with depth.				
13-	ML		(12.4' - 13.0') SILT (ML), little fine grained Sand, trace 1/4" Gravel; 5RB5/1 bluish gray; medium stiff; dry.				
			Boring terminated at 13.0 ft bgs.				Coordinate System: NAD 83

HTRW DRILLING LOG	DISTRICT			BOREHO	LE NUMBER
	USACE	- Louisville			
1. COMPANY NAME		G SUBCONTRACTOR			050-47
SAIC	Frontz D				1 OF 2
3. PROJECT RUMAP IBA 08 RT 5. NAME OF DRILLER TO STATE OF THE STATE O		4. LOCATION RV	/AAP 8451 State	Route 5 Raver	nna, OH 44266
7. SIZES AND TYPES OF SAMPLING EQUIPMENT		6. MAKE/MODEL OF DE	Geop	robe (1020	DY
9"		8. BOREHOLE LOCATION	^{DN} 553510, 88	15 ; 23 <i>5</i> 30	86.3371
3" suZ" HAND AUGER	_	9. SUHFACE ELEVATIO	NAD I	83	
1.5" x 4" ACETATE LINER		10. DRILL DATE/TIME	12_	35 COMPLET	TED: 1425
		15. DEPTH GROUNDW.		7-1110	
21 DUAL TUBE 12. OVERBURDEN THICKNESS 12 TT		16. DEPTH TO WATER/			.ETION
12 DEPTH PRINTED BETTER			M		
IVA		17. OTHER WATER LEV			1E)
017			NK		
ONDISTORBED: MA	DISTURBED		19. TOTAL NUMBER		NA
CHEMILY A /MAT / MATHAD:	NA	OTHER: MA	f	. TOTAL CORE RECO	
DATE STARTED/INSTALLED: O	03/04/10; 13	235 DATE	E COMPLETED/ABAND	ONED: 03/01/10	, 1425
BACKFILL TYPE: ☐ GROUT ☐ BENTONITE 23. NOTES BKG: < Bentrary and BCG. Belley Company 1. Bentrary and BCG. Bentrary and B		ORARY WELL POINT		RING WELL	
BGS: Below Ground St		CPM: Counts per Mini		arts per Million	
: First Water Encountered	: Static Water Le	ivel NA:	Not Applicable		
LOCATION SKETCH/COMMENTS			SCAL	E: None	
					
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		*			\$01L 510
					\$01L 570CK
		× × ×	~ 092		\$01L \$70CKP
			LOSB-072 (GEOTELH)		\$01L \$70CKP1L
			W\$\$-072 (GEOTECH)		\$01L 570CKPILC
			USB-072 (OE07tCH)		SOIL STOCKPILC
			LOSB-072 (GEOTELI)		\$01L \$70CKPILC
			ω\$\$-@72 (Θ€07€€#)		SOIL STOCKPILC
			WSB-072 (GEOTECH)		SOIL STOCKPILC
			LOSB-072 (GEOTELH)		301L 370CKPILE
			LOSS-072 (GEOTECH)		SOIL STOCKPILE
			USB-072 (GEOTECH)		SOIL STOCKPILC
OLOGIST SIGNATURE/DATE	A/OC SIGNATURE/	2 015/	2/16	BOREHOLE	Sol C STOCK PICC





Designation of Drill
Type of Drill Rig
Geologist
Oversight Company

: Frontz Drilling : Jeremy Leckrone : Geoprobe 6620DT : Direct Push Technology

Geologist : Amanda Trenton

Oversight Company : SAIC
Borehole Diameter : 2"

Drilling Company

Driller

Sampling Equipment : 1.5" x 4' Long Acetate Liner

: 2" x 4' Dual Tube : 3" Hand Auger

RVAAP PBA 2008 Remedial Investigation Ravenna Army Ammunition Plant 8451 State Route 5 Ravenna, Ohio 44266 Portage County

 Start Date
 : 03/01/10; 1235

 End Date
 : 03/01/10; 1425

 Northing Coord.
 : 553510.8815

 Easting Coord.
 : 2353086.3371

 Total Depth of Boring
 : 13.0 ft

Collection Interval Graphic Symbol Depth in feet Recovery USCS (**USCS** Analyses Description Comments 0 (0.0' - 4.0') CLAY (CL); some medium grained Sand; trace Soil Color Chart Gravel and Slag, 1/4" - 1/2", subrounded; 10YR5/1 gray and 10YR 4/4 yellowish brown; soft; wet to moist from Munsell 2000 Rev. Ed. 1.0'/1.0' LL6sb-071-5227-SO collected from 0.0' - 1.0' on surface runoff 0.0' - 0.4 then dry'; medium plasticity; 03/01/10 at 1253 for TAL organics from 0.0' - 0.75'. Metals + Hg, PAHs, and (1.6' - 4.0) Medium stiff. Explosives. 2. CL LL6sb-071-5228-SO, LL6sb-071-6068-FD, & 2.1'/3.0' LL6sb-071-6070-QA 3 collected from 1.0' - 4.0' on 03/01/10 at 1400 for TAL Metals + Hg, PAHs, and Explosives. 4 (4.0' - 7.0') CLAY (CL); little Silt; trace Gravel, 1/4", subangular; 10YR4/3 brown with little 10YR8/2 very pale LL6sb-071-5229-SO, brown mottling; stiff; dry; low plasticity. LL6sb-071-6069-FD, & 5 LL6sb-071-6071-QA collected from 4.0' - 7.0' on 3.1'/3.0' CL 03/01/10 at 1405 for TAL Metals + Hg, PAHs, and 6 Explosives. (7.0' - 8.3') Clayey SILT (ML); trace Gravel, 1/4" - 1/2", subrounded; 10YR4/4 dark yellowish brown; stiff; dry; ML crumbly; low plasticity. 8 (8.3' - 8.9') Fine grained SAND (SW); trace Gravel, 1/4" -2.8'/3.0' SW 1/2", subrounded; 10YR4/4 dark yellowish brown; medium 9 dense; moist; nonplastic. (8.9' - 10.0') Clayey SILT (ML); trace Gravel, 1/4" - 1/2", ML subrounded; 10YR4/4 dark yellowish brown; stiff; dry; LL6sb-071-5230-SO crumbly; low plasticity. 10 collected from 7.0' - 13.0' on (10.0' - 10.1') Medium grained SAND seam (SW); dry. 03/01/10 at 1425 for TAL (10.1' - 13.0') Fine to very fine grained SAND (SW); Metals + Hg, PAHs, and 10YR4/4 dark yellowish brown; medium dense; moist, wet Explosives. 11 in pockets; nonplastic. 3.6/3.0' SW 12 13

Boring backfilled with sodium bentonite chips and hydrated. 0.0' - 1.0' sampled using a 3" hand auger and triangular subsample procedure for explosives as presented in Section 4.5.2.1.1 of the Facility-Wide SAP. Samples were composited and homogenized for all analyses.

Boring terminated at 13.0 ft bgs.

LL6sb-071

Coordinate System: NAD 83

IITDW DDW I WA			DISTRIC	OT .				BOREHOLE NUMBER
HTRW DRILLING	LOG		USAC	E - Lou	isville			LLUSD-0
1. COMPANY NAME			2. DRILI	ING SUBC	ONTRACTOR			
SAIC			Front	z Drilling				SHEET 1 OF
3. PROJECT RUMAP	PBA 08	ei				AAP 845	1 State Box	ute 5 Ravenna, OH 4426
NAME OF DRILLER JERROMY	LELKRONE	, , , , , , , , , , , , , , , , , , , 		6. MA	E/MODEL OF DE	ILL	Geoprobe	
SIZES AND TYPES OF SAMPLING EQUI	IPMENT	<u> </u>	****** · · · · · · · · · · · · · · · ·	8. BOF	EHOLE LOCATIO	N 552F	14 8815	: 2363086.3371
2"x4! Accor		•		9. SUF	FACE ELEVATIO	N/DATUM	MO 83	. 2300080.33 11
2" Duan - 4"4" HSAS	TUCE			10. DR	LL DATE/TIME	STARTED:	1440	COMPLETED: 1033
44" HSAS	>			15. DE	OSCILLITO PTH GROUNDWA			
3º Stab	i TUBE			16. DE	PTH TO WATER/	ELAPSED TIN	ME AFTER BOF	.5万 REHOLE COMPLETION
OVERBURDEN THICKNESS 21	,25 FT						WA	
DEPTH DRILLED INTO BEDROCK	NA			17. OT	HER WATER LEV	EL MEASURI	EMENTS (INLC	LUDE DATE/TIME)
TOTAL DEPTH OF BOREHOLE	21.25 #1 /1	10.5 #	- (mess	-			MA	
GEOTECHNICAL SAMPLES	UNDISTURBED:	<u> </u>		BED: NA		19. TOTAL I	NUMBER OF C	ORE BOXES NA
CHEMICAL SAMPLES	CHEM: NO	RAD:	NA	OTHER	: AM)	<u> </u>	21. TOT	AL CORE RECOVERY % MA
DISPOSITION OF BOREHOLE	DATE STARTED/INST	FALLED: (02				COMPLETE		03/01/10; 1033
CKFILL TYPE: GROUT	■ BENTON		•		WELL POINT		MONITORING	
NOTES BKG: ≤ Background	BGS: Below G				Counts per Minu		PPM: Parts p	
: First Water En			Static Water			lot Applicat	•	Der Million
			Tatio Water	20701	197. 1	ot Applicat	ле	
CATION SKETCH/COMME	NTS						SCALE:	None
					umw-06 B-071			5010
								STOCKPICE
					(Uus	B-Ø72		
MANORD NOTHERY WE Lile MWOODS WATCH LEVEL - 1								
ogist signature/date Imanda Ne	ntn 03/0	7/10 QAQ	C SIGNATUR	RE/DATE	u/	3/12	<u> </u>	BOREHOLE NUMBER LL 6 Sb - 07





Driller
Designation of Drill
Type of Drill Rig
Geologist

Drilling Company

: Frontz Drilling
: Jeremy Leckrone
: Geoprobe 6620DT
: Direct Push Technology
: Amanda Trenton

Geologist
Oversight Company

nny : SAIC er : 8"

Borehole Diameter :

Sampling Equipment : 4.25" Hollow Stem Augers

: 28" x 3" Shelby Tube

RVAAP PBA 2008 Remedial Investigation Ravenna Army Ammunition Plant 8451 State Route 5 Ravenna, Ohio 44266 Portage County

 Start Date
 : 03/01/10; 1440

 End Date
 : 03/01/10; 1633

 Northing Coord.
 : 553510.8815

 Easting Coord.
 : 2353086.3371

 Total Depth of Boring
 : 21.25 ft

Collection Interval Graphic Symbol Depth in feet Recovery USCS (USCS Analyses Description Comments 0 Soil Color Chart (0.0' -1.5') CLAY (CL); some medium grained Sand; little Munsell 2000 Rev. Ed. CL Gravel, 1/4" - 1"; 10YR4/4 yellowish brown and 10YR5/1 1 gray; soft; moist from 0.0' - 0.5' then dry; medium plasticity; little organics. 2 (1.5' - 5.5') CLAY (CL); trace fine grained Sand; little Silt; 10YR4/3 brown with 10YR6/6 brownish yellow and 3 10YR5/1 gray; medium stiff; dry; medium plasticity. Shelby Tube CL LL6sb-072-5231-SO 4 collected from 4' - 5' on 03/01/10 at 1555 for Porosity, Bulk Density, Moisture Content, 1.0'/2.0' 5 Total Organic Carbon. (5.5' - 6.5') Fine grained SAND (SM); little to some Silt; trace Permeabilty, and Grain Size 6 SM Gravel; 10YR4/4 dark yellowish brown; medium dense; Fraction Analysis. Shelby tube refusal at 5' bgs. damp. 7 (6.5' - 12.5') SAND and SILT (SM); sandier in pockets; trace fine Gravel; 10YR4/3 brown; medium dense; damp. 8 Shelby Tube LL6sb-072-5232-SO collected from 9' - 10.5' on 9 03/01/10 at 1615 for Porosity, Bulk Density, Moisture Content, 1.5'/2.0' 10 Total Organic Carbon, Permeabilty, and Grain Size Fraction Analysis. (11.25' - 11.75') Moist. Shelby tube refusal at 10.5' 12 bgs. (12.5' - 21.25') SILT (ML); little fine grained Sand; trace 13 Clay; trace 1/4" Gravel; 5RB5/1 bluish gray; stiff to hard; dry. 14 15 16 ML 17 18 19 20 21 S (21.25') Weathered SHALE; hard; dry. Coordinate System: NAD 83 Boring terminated at 21.25 ft bgs. 22

Boring backfilled with sodium bentonite chips and hydrated. Shelby tubes sealed with wax and capped.

Í			DISTRICT				BOREHOLE NUMBER
HTF	RW DRILLING	LOG	USACE	- Louisville			LLUSB-083
	1. COMPANY NAME		2. DRILLIN	IG SUBCONTRACTOR			
	SAIC		Frontz [Drilling			SHEET 1 OF 2
5 NAME	3. PROJECT RUMAK OF DRILLER TO A			4. LOCATION RV	'AAP 8451	State Route	e 5 Ravenna, OH 44266
	AND TYPES OF SAMPLING EQ	LECKRONE		6. MAKE/MODEL OF DR	<i>[</i> V <i>F</i>]	Geoprobe	
		·····		8. BOREHOLE LOCATIO	1,04	5 9 8. 77.	57, 2353057.303
	711 1	nuo Auger		9. SURFACE ELEVATION 10. DBILL DATE/TIME	/\	1AD83	
	3.4 1	AND MUGER		10. DRILL DATE/TIME VZ/25/10 15. DEPTH GROUNDW.	STARTED: ATER ENCOU	0970 NTERED NA	COMPLETED: 1015
				16. DEPTH TO WATER/		, , ,	
	BURDEN THICKNESS 5.	5+ FT		1		NA	
	H DRILLED INTO BEDROCK	NA		17. OTHER WAFER LEV		MENTS (INLCLU	IDE DATE/TIME)
	DEPTH OF BOREHOLE ECHNICAL SAMPLES	5.5 FT (Refus	AL)				
	CAL SAMPLES	UNDISTURBED:		D:	19. TOTAL N	IUMBER OF COF	(4/3
22. DISPO	SITION OF BOREHOLE	CHEM: EXA MET /AH FAD:	NA	OTHER: NA		. 1	L CORE RECOVERY % MA
BACKFILL	TYPE: GROUT	DATE STARTED/INSTALLED: \$\int 2\cdot\) BENTONITE		Q920 DATE PORARY WELL POINT			02/25/10; 1015
3. NOTES				CPM: Counts per Mini		MONITORING W PPM: Parts pe	
	: First Water E		tatic Water L	,	ute Not Applicab		r Million
OCAT	ION SKETCH/COMME						
	ION ORE FOLLOWING	INIS				SCALE:	None
					1		N
						92	
OLOGIST	SIGNATURE/DATE	FRE CINE		1055 077 ×3" +			Concertace water Conning into bore how during Sampling.





Driller : Jeremy Leckrone Designation of Drill : NA

Type of Drill Rig : NA

Drilling Company

Geologist : Amanda Trenton

: Frontz Drilling

Oversight Company : SAIC Borehole Diameter : 3"

Sampling Equipment : 3" Hand Auger

RVAAP PBA 2008 Remedial Investigation Ravenna Army Ammunition Plant 8451 State Route 5 Ravenna, Ohio 44266 Portage County

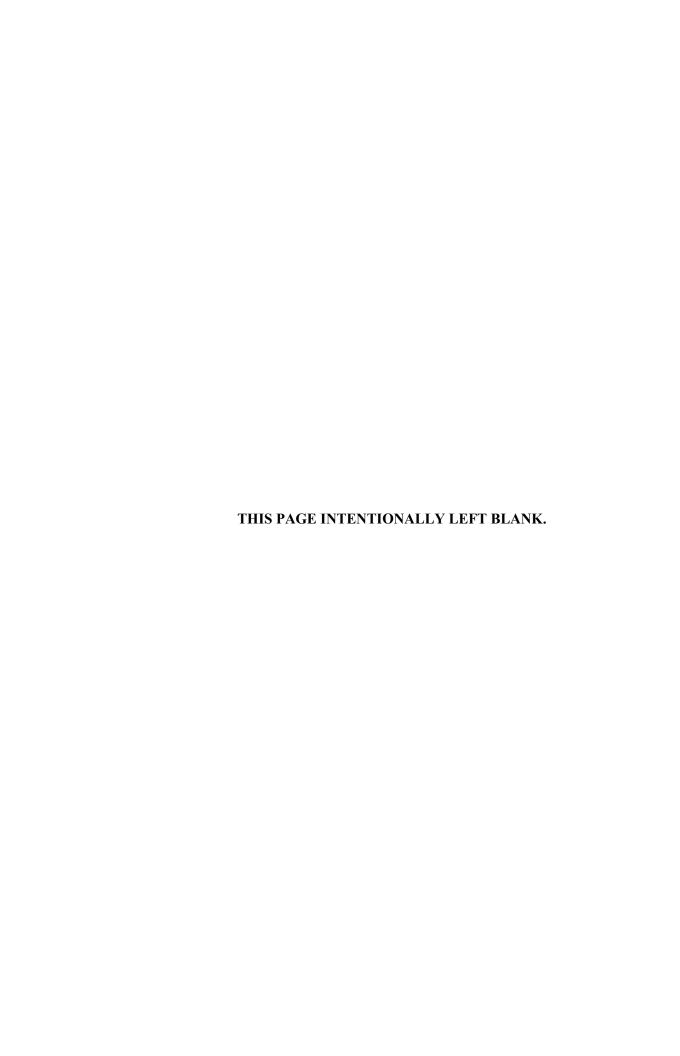
Start Date : 02/25/10; 0920 **End Date** : 02/25/10; 1015 Northing Coord. : 552598.7757 Easting Coord. : 2353057.3031

Total Depth of Boring : 5.5 ft

		_						
Depth in feet	USCS Symbol	USCS Graphic	Descriptio	on	Analyses	Recovery	Collection Interval	Comments
0- 1- 2- 3- 3- 5-	CL		(0.0' - 0.5') SILT (ML); some Clay a Sand; trace fine Gravel; 10YR4/3 b damp; medium plasticity; significar (0.5' - 4.0') CLAY (CL); some Silt; trace Sand lenses; 10YR4, 10YR5/1 gray; Sand is 10R6/4 pal medium plasticity to high plasticity. (4.0' - 5.5') CLAY (CL); little Silt; trace subangular; 10YR4/4 brown with librown mottling; stiff; dry; medium to Boring terminated at 5.5 ft bgs. Ha	orown; medium stiff; nt organics throughout. Atrace fine subangular At yellowish brown with e red; soft; damp; ace Gravel, 1/4", ttle 10YR8/2 very pale o low plasticity.	LL6sb-083-5233-SO collected from 0.0' - 1.0' on 02/25/10 at 0933 for TAL Metals + Hg, PAHs, and Explosives. LL6sb-083-5234-SO collected from 1.0' - 4.0' on 02/25/10 at 0956 for TAL Metals + Hg, PAHs, and Explosives. LL6sb-083-5235-SO collected from 4.0' - 5.5' on 02/25/10 at 1015 for TAL Metals + Hg, PAHs, and Explosives.	1.0'/1.0' 3.0'/3.0' 1.5'/1.5'		Soil Color Chart Munsell 2000 Rev. Ed.
6- 								Coordinate System: NAD 83

Boring backfilled with sodium bentonite chips and hydrated. 0.0' - 1.0' sampled using a 3" hand auger and triangular subsample procedure for explosives as presented in Section 4.5.2.1.1 of the Facility-Wide SAP. Samples were composited and homogenized for all analyses.





715/12

RVAAP	2	
RVAA PBA08 RI - Surface Water	USACE - Louisville	RVAAP 8451 State Rt. 5
	2. PROJECT: RVAAP PBA 2008 RI	Ravenna, OH 44266
and Wet Sediment Sample Log 1. COMPANY NAME: SAIC	3. Sample Team	-
The second secon		SHEET 1 OF 3
	EMILY CONVINCHAM. RYW CAR	(4
LOCATION ID: RVAAP - 46.00-081 HIM	5. Cordinates Recorded: AJA	
i. Surface Water Equipment Used:	SAMPLE TYPE: 12/4	1 0
Sample ID and Time 12 7/5/12 DB	7. Dupe ID (if needed)	
165m-081 DOTA 2000-081-5243	-SANT/shu N/A	
. MS/MSD ID (if needed)	9. Split ID (if needed)	
NA	N/A	
0. Wet Sediment Equipment Used POSH PROSE	SAMPLE TYPE: COMPOST	E 0-0.51 bgs
1. Sample ID	12. Dupe ID (if needed)	•
LLSD-481-5243-SD 08	40 N/A	0.86.58
3. MS/MSD ID (if needed)	14. Split ID (if needed)	
NA	N/A	
/eather Conditions: P. CLOUD? 31°F	Activities in the Area Nov	£
LOCATION SKETCH/COMMENTS	SCALE:	None
WITH ROTS LORGA	17 10 48 4/1 12 ROWN 10 78 3/3 0187: HIGH PLASTICITY IN CLASS	- SAWD GERY LOOK
The state of the s	Lower Andrews	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
WET SEDIMENT ANALYSES: X EXPLOSIVES X TAL METAL	etals, Explosives, Propellants, Pesticides, PCBs)	
Recorded By: (Signature and Date)	QC Checked by: Signature and Date	M Shu

7/5/12

RVAA PBA08 RI - Surface Wa	2 880 (E - Louisville ECT: RVAAP PBA 2008 RI		RVAAP 8451 State Rt. 5 Ravenna, OH 44266
and Wet Sediment Sample Lo	3. Sample	a Team		
	<u> </u>		de i	SHEET 1 OF 1
4. LOCATION ID: LUSW-031	TEMO	CUMMINAHAM & STEVE [5. Cordinates Recorded:	VISORY	
5. Surface Water Equipment Used: GLAB PILECTL		1		
6. Sample ID		7. Dupe ID (if needed)		
LUBW-001-5242-SW		NA		
8. MS/MSD ID (if needed)		9. Split ID (if needed)		
NA 10. Wet Sediment Equipment Used:		NA		
11. Sample ID 2118/2019		SAMPLE TYPE: 12. Dupe ID (if needed)		
The lan Zholan		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	NA	
13. MS/MSD ID (if needed)		14. Split ID (if needed)		
Weather Conditions: 35°F OVELCAST		Activities in the	Area NOME	, and the same of
LOCATION SKETCH/COMMENTS	J	-1	SCALE:	None
	1 1 1	E 1 10 1 1 1		
Field Notes: OLL allocation in a School	C.4 05 . CO.	Kinga Zi		encendrania en accionario de la compansión de la compansi
Field Notes: OLL 2/10/2010 WET SEDIM	ent was cou	ALTON BUT THE	-	
DITCH DID NOT HAVE EMAIGH WATER	DOWELT,	LICATION WAS LECTED	MO	
on 3/02/2000 AND HAD ENOUGH WITHEL	TO COLLECT, 8	& Full SUITE WASGOL	LEUGO.	
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en de en la maina facilità de la calenda			1	
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	X WATT	EL GRAS SAMPLE COLLE	CTEO ADDED	UMATEUL
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SURFACE WATER				
ANALYSES: EXPLOSIVES TAL	METALS S	OCs OTHER		
FULL SUITE (VOCs, SVC	os, Metais, Expl	osives, Propellants, Pestício	ies, PCBs)	
WET SEDIMENT				
ANALYSES: EXPLOSIVES TAL	METALS - 6\	/OCs □OTHER osives, Propellants, Pesticio	toe DCBel	
CTT TOTTE (VOCS, 3VC	, os, metais, expi	oawea, Fropeliants, Pesticio	105, FUBS)	
Boomled Die Grand And Annalder		St_91	11/2/	3/10
Recorded By: 7 MULY (WWW) 69/6 (Signature and Date) 69/6	QC Check	. ,	ure and Date)	11'0
77	1.3	(Signal	one and Date)	

SAMPLE LOG SHEET

PROJECT NO: 172819.00.09456.00.9200.02.200

Language and the second	
SAMPLING LOCATION: LL 6 5 w - OST	DATE COLLECTED (MM/DD/YY):
	TIME:
SAMPLE TEAM: STEVE MONKY, SARAHISE	<u> </u>
WEATHER: SUNNY, 350F	
FIELD OBSERVATIONS (i.e. Water color, odor, flow	.):
STACNANT CLEAR, LEAVES AND	SEDIMENT ON & DITCH BOTTOM
NO ODOR	
SH	
PHOTOGRAPH ID(S): - LL6_Sw_ BC	<i>41</i>

ELD MEASUREMENTS	READING	UNITS	SERIAL NO.	LAST CALIB.
TEMPERATURE:	4.82	°C	15560	03/16/14
pH:	6.79	S.U	1	1
CONDUCTIVITY:	p. 256	mS/cm		
DO:	5.74	mg/L		
TURBIDITY:	7.8	NTU	15559	- t
OTHER :				

Recorded By: QC Checked by: (Signature)

RVAA PBA08 RI - Surface Water	USACE - Louisv	ille		RVAAP 8451 St	ate Rt. !
and Wet Sediment Sample Log	2. PROJECT: RVAAI	PBA 2008 RI		Ravenna, OH 44	4266
. COMPANY NAME: SAIC	3. Sample Team On	JAN LAWEICI	<u> </u>		
	_			SHEET 1 OI	F 久
LOCATION ID: 1 1 1	5. Cordin	NNINGHAM ates Recorded:			
Surface Water Equipment Used: NONE	3/2		2		
Sample ID and Time		ETYPE: GLAC D (if needed)	>		
LLUSW-082-5244-SW: 11		NO NO			
MS/MSD ID (if needed)		(if needed)			
NO		NO			
. Wet Sediment Equipment Used: HAND PUSH PROBE	SAMPL	ETYPE: Comp	NSITE - VINC	-Grabe Com	msite
I. Sample ID	12, Dupe	ID (if needed)	WITE VIA	S-GILLE, CAT	throne
LLUSD-1802-5245-SD; 153	σ	LLLESD -	082-Lea	663-FD	
3. MS/MSD ID (if needed)	14. Split li	D (if needed)			-
No		LLLOSD-	৩ ৯ - ৮৫১	62-00	
eather Conditions: 28°F. SNOW CVERSAST · MO	D.WIND	Activities in the	Area NONE		
		Г	SCALE:	Mone	
OCATION SKETCH/COMMENTS ### Page 17 - 2010			SCALE:	None	157
					7
ield Notes: Samples Collected under	~ 10" of show) and anth	t)		
of ice. Water was about 3" deep. by making holes in ice 5th around Field Dupe and Split collected or	select coding	of collaborated	****************	+	-11
of the water was would 3" deep.	WET SECTIVE	rit coneciec			
on making holes in ice off aroun	no main san	ipie poirti.	101	to line lo	
Eigld Dube and Split collected or	1 Wet Sedin	nent.			1
THE PARTY SING ON A CONTROL OF A CHANGE	NC OLDER & 4	\ 011 TC . SA	VIE	7	
SEDIMENT SICLAY (OL) WITH OCCIAN	JIC CUINA MO	ט אנבום , טט	e anni forma e ono		
SAND VERY DARK GRAY IOYR 3	11 WITH DAR	k yellowsi	-	4	
BROWN MOHLINGIOUR 3/10 USRY SOF	7 WET U	ow PLASTICI			
with koots and operancs.	,			¥	
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20, 100	0	sample	- Al	Jaros de	elio estados
	1 1 1 1 1 7	location 1	<u> ENTIAL</u>	101 1 11	\$1 B
SURFACE WATER Analyses: □ Explosives □ tal meta	ALC CLEVOCS F	TOTUED			
ANALYSES: ☐ EXPLOSIVES ☐ TAL META ☐ FULL SUITE (VOCs, SVOCs, N	Metals Explosives P	JOTHER	les PCRs)		
, see some (************************************	roluio, Enploates, F	repondins, result	.03, 1 003)		
WET SEDIMENT	_	_			
ANALYSES: EXPLOSIVES TAL META	ALS SVOCs	OTHER			
FULL SUITE (VOCs, SVOCs, N	netals, Explosives, P	ropellants, Pesticid	les, PCBs)		
		7			
0 , 0 , 0		Mal		11	
Recorded By: Aniles Cunning Pas	QC Checked by:	Me)	z	18/18	
Recorded By: Miles Curring (Signature and Pate)	QC Checked by:	(Signate	ure and Date)	18/18	

2042

SAMPLE LOG SHEET									
PROJECT NAME: RVAAP PBA08 RI	PROJECT NO: 172819.00.09456.00.9200.02.200								
SAMPLING LOCATION: 1465w-682	DATE COLLECTED (MM/DD/YY): 13/16/14								
	TIME: <u>/ψ3</u> , p								
SAMPLE TEAM: <u>STEVE VISOCKY, SARA F</u>	tis <u>e</u>								

WEATHER: SUNNY, 35°F ACTIVITIES IN AREA: NINE

FIELD OBSERVATIONS (i.e. Water color, odor, flow...): CLEAR LEAVES + SEDIMENT ON BOTTOM. NO ODOR. STEADY LOW FLOW

PHOTOGRAPH ID(S): MA

FIELD MEASUREMENTS	READING	UNITS	SERIAL NO.	LAST CALIB.
TEMPERATURE:	4.91	°C	15564	93/16/14
pH:	7.00	S.U		1.7/4
CONDUCTIVITY:	Ø.Ø37	mS/cm		
DO:	5.84	mg/L		
TURBIDITY:	7.87	NTU	15559	
OTHER:				

Recorded By:

(Signature) QC Checked by:

Life c. / set - 499 4 Surface Water Sample ID:	7/ 1 1	RVAAP	- Surface \	Water & W	/et Sediment F	ield Form	SHEET 1	OF
Freedom Provided	From Science to Solutions				8451 State Rt. 5	1. Sample Team։ խ մ	Ke benullo	
LUC s) Iti ID:	RVAAP PB.	A 2008 RI	Ravenn	a, OH 44266	Steve Visodo		
Surface Water Sample 10: Surface Water Sample 10: Surface Water Sample 10: Surface Water Sample Type and Equipment Used: Dute of F.W. Greb Surface Water Sample Type and Equipment Used: Dute of F.W. Greb Surface Water Sample Type and Equipment Used: Dute of F.W. Greb Surface Water Sample Type and Equipment Used: Congruith Roman Surface Water Sample Type and Equipment Used: Congruith Roman Surface Water Surface Surfa		- diali			o. Nevised Cooldinates	Recorded:	. ,	
LUGAL - JULY - 5794 - SLO Dupo D of meeded) NA Surface Water Sample Type and Equipment Used Direct F. 10 - Greb West Sediment Sample Type and Equipment Used Congright Portics S. St. Doc I + Species West Sediment Sample Type and Equipment Used Congright Portics S. St. Doc I + Species West Sediment Sample Type and Equipment Used Congright Portics S. St. Doc I + Species West Sediment Sample Type and Equipment Used Congright Portics S. St. Doc I + Species West Sediment Sample Type and Equipment Used Congright Portics S. St. Doc I + Species SCALE: None Open Field Open F	در الله على الله الله الله الله الله الله الله ال	- 48 A			NA.			
Surface Water Sample Type and Equipment Used: D. Le. of F. W. Grety 11. Date and Time: 12. Date and Time: 13. Spit ID (if needed) 14. OF 14. OF 15. Date and Time: 15. MS/MSD 15. MS/MSD 15. MS/MSD 16. MS/M		-5794-	51.7		1	11:00		
Surface Water Sample Type and Equipment Used Divert Fitt Greby 0. Wet Sediment Sample Type and Equipment Used Divert Fitt Greby 11. Date and Time: 12. Loc Sh - Well 9 5 7 75 - 5D 2. Dupe 10 (if needed): 12. Advises in the Area Sample Type and Equipment Used Congositi Power S. S. Duct + Spaces 13. Method Sample Type and Equipment Used Congositi Power S. S. Duct + Spaces 14. Wet Sediment Sample Type and Equipment Used Congositi Power S. S. Duct + Spaces 15. Meather Conditions 16. Westerner Conditions 17. Advises in the Area Scale: 18. None OCATION SKETCH/COMMENTS SCALE: None OCATION SKETCH/COMMENTS SCALE: None Open Field Charge Share shap of Clear Paraman, Techpolas, Salesmanus SCALE: None Open Field Charge Share shap of Clear Paraman, Techpolas, Salesmanus SCALE: None Open Field Charge Share shap of Clear Paraman, Techpolas, Salesmanus SCALE: None Open Field Charge Share shap of Clear Paraman, Techpolas, Salesmanus SCALE: None Open Field Charge Share shap of Clear Paraman, Techpolas, Salesmanus SCALE: None Open Field Charge Share shap of Clear Paraman Charge Share shape of	Dupe ID (if needed):		340		7. Split ID (if peeded)	1645		· · · · · · · · · · · · · · · · · · ·
Surface Water Sample Tipe and Equipment Used Due. If F. 17 5 6 26 5 O. West Sediment Sample Tipe LLC 5					_			
11. Date and Time: 12. Date and Time: 13. Signi Divreeded) 15. Signi Divreeded) 15. Signi Divreeded) 15. Signi Divreeded) 17. Admities in the Area: 17. Admities in the Area: 18. MSMSD A	3. Surface Water Sample Type a	and Equipment Us	ed: D. welf C.	VI - Greh			lo vicas	\n
A. West Saddment Sample Type and Equipment Used (0. Wet Sediment Sample ID:				11. Date and Time:		[9, M5/M3	D:
A Wet Sediment Sample Type and Equipment Used Congostif Power 55 Dead + 520cm 15 MSIMSD A 5 Weather Conditions 52 may 80 F 17 Activities in the Area 17 Activities in the Area 18 MSIMSD A 5 Weather Conditions 52 may 80 F 17 Activities in the Area 18 MSIMSD A 5 Weather Conditions 52 may 80 F 17 Activities in the Area 18 MSIMSD A 5 Weather Conditions 52 may 80 F 17 Activities in the Area 18 MSIMSD A 5 Weather Conditions 52 may 80 F 17 Activities in the Area 18 MSIMSD A 5 Weather Conditions 52 may 80 F 17 Activities in the Area 18 MSIMSD A 5 Weather Conditions 52 may 80 F 17 Activities in the Area 18 MSIMSD A 5 Weather Conditions 52 may 80 F 17 Activities in the Area 18 MSIMSD A 5 Weather Conditions 52 may 80 F 17 Activities in the Area 18 MSIMSD A 5 Weather Conditions 52 may 80 F 18 MSIMSD A 6 Weather Conditions 18 MSIMSD A 7 Weather Conditions 18 MSIMSD A 8 Weather Conditions 18 MSIMSD A 8 Weather Conditions 18 MSIMSD A 8 Weather Conditions 18 MSIMSD A 18 Weather Conditions 18 MSIMSD A 18 MS	LL652 -484	- 5795-5	O		4/11/10	1805		
4. Wet Sediment Sumple Type and Equipment Used Congosph Powers, S. Boul + Spaces 15 MSMSO A B. Weather Conditions Survey & 6 F 17 Activities in the Area Month SCALE None OCATION SKETCH/COMMENTS SCALE None SCALE None OPART FIELD Trace Organics (Opaccyte) Clear, Brown, Tecl poles Sedemantry SILT (AL) Trace Organics (Opaccyte) Leaves Cethol's Dk Gray (1078 31) met, man plant Water Survey	2. Dupe ID (if needed):	_			13. Split ID (if needed)			
Coation Sketch/comments Scale: None				·	M			
Coation Sketch/comments Scale: None	4. Wet Sediment Sample Type a	and Equipment U	sed: Composite	Poners, 5	Boul + Spoon		15. MS/M	SD: N
FIELD MEASUREMENTS READING UNITS SERIAL NO. TEMPERATURE: 7.51 °C 15558 Y/1/16 PH: 8,32 S.U CONDUCTIVITY 4/52 mS/cm DO: 144/5 mg/l TURBIDITY: 6,72 NTU 15557 OTHER SUL 4-47 15558 FULL SUITE (VOCS, SVOCS, Metals, Explosives, Propellants, Pesticides, PCBs) WET SEDIMENT NALYSES: EXPLOSIVES TAL METALS SVOCS OTHER FILL SUITE (VOCS, SVOCS, Metals, Explosives, Propellants, Pesticides, PCBs)	6. Weather Conditions: Sun	ny 80'F			17. Activities in the Area			
FIELD MEASUREMENTS READING UNITS SERIAL NO. TEMPERATURE: 7.51 °C 15598 Y/1/10 CONDUCTIVITY \$152 ms/cm DO 14/15 mg/L TURBIDITY: \$72 NTU 15557 OTHER SUL \$449 1 15558 FULL SUITE (VOCS, SVOCS, Metals, Explosives, Propellants, Pesticides, PCBs) VET SEDIMENT INALYSES: EXPLOSIVES TAL METALS SVOCS OTHER EXPLOSIVES (COCS, SVOCS, Metals, Explosives, Propellants, Pesticides, PCBs)	OCATION SKETCH/CO	MMENTS				SCALE:	None	
FIELD MEASUREMENTS TEMPERATURE TEMPERATURE TONDUCTIVITY G152 TURBIDITY: G172 G172 G173						OOKEE:	140116	
FIELD MEASUREMENTS TEMPERATURE: 7.51 CONDUCTIVITY: PS 2 SU CONDUCTIVITY: PS 3 2 SU CONDUCTIVITY: PS 2 SU CONDUCTIVITY: PS 3 2 SU CONDUCTIVITY: PS 3 2 SU CONDUCTIVITY: PS 3 2 SU CONDUCTIVITY: PS 2 SU CONDUCTIVITY: PS 3 2 SU CONDUCTIVITY: PS 2 SU CONDUCTIVITY: PS 3 2 SU CONDUCTIVITY: PS 3 2 SU CONDUCTIVITY: PS 2 SU CONDUCTIVITY: PS 3 2 SU CONDUCTIVITY: PS 5 7 SU CONDUCTIVITY: PS 5 SU CONDUCTIVITY: PS				0	per FIELD	· · · · · · · · · · · · · · · · · · ·		
FIELD MEASUREMENTS TEMPERATURE: 7.51 CONDUCTIVITY: DO: M/S TURBIDITY: OTHER SILL SURFACE WATER WALYSES: EXPLOSIVES ST TAL METALS SVOCS STOTHER FULL SUITE (VOCS, SVOCS, Metals, Explosives, Propellants, Pesticides, PCBs) FULL SUITE (VOCS, SVOCS, Metals, Explosives, Propellants, Pesticides, PCBs)	ield Notes: Wide, App	dn (Deepost -	75) - (ear Brown	n Tadacles Se	clamenders		
FIELD MEASUREMENTS FIELD MEASUREMENTS TEMPERATURE: 7.51 CONDUCTIVITY: DO: 10/5 mg/L TURBIDITY: OTHER SURFACE WATER WALYSES: EXPLOSIVES TAL METALS SVOCS OTHER FULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs) FIUL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs)	SILT (MC) True	e Organics	(Doccymy	Lecues +	Cethoils) DKG.	uy 101/2 311	wet was x	. W.
FIELD MEASUREMENTS READING UNITS SERIAL NO. LAST CALIB. TEMPERATURE: 7.5(°C 15558 Y/1/10 PH: 3.32 SU CONDUCTIVITY: \$\sqrt{15} \cdot 2 mS/cm DO: \$\sqrt{16} \sqrt{15} \sqrt{10} \text{VIII} TURBIDITY: \$\sqrt{17} \text{NTU 15557} OTHER \$\sqrt{12} \sqrt{12} \sqrt{17} \text{NTU 15557} SURFACE WATER WALYSES: \$\sqrt{12} \text{EXPLOSIVES} \sqrt{14} \text{TAL METALS} \sqrt{5VOCs} \sqrt{OTHER} SYST SEDIMENT INALYSES: \$\sqrt{15} \text{EXPLOSIVES} \sqrt{15} \text{TAL METALS} \sqrt{5VOCs} \sqrt{OTHER} FULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs)	en e				,	()	אן בססטן	# 16.
FIELD MEASUREMENTS READING UNITS SERIAL NO. LAST CALIB. TEMPERATURE: 7.5(°C 15558 Y/11/0 PH: 3.32 SU CONDUCTIVITY: \$\Phi_15\; 2\text{ mS/cm}\$ DO: \$\phi_15\; 3\text{ mS/cm}\$ TURBIDITY: \$\phi_17\; 2\text{ mS/cm}\$ OTHER \$\frac{1}{2} \text{ NTU } \text{ 15557} SURFACE WATER WALLYSES: \$\Begin{array}{cccccccccccccccccccccccccccccccccccc	Glass.	TY SHEET DO	be	anem			er storer in ode a recur part of a	
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FIELD MEASUREMENTS READING UNITS SERIAL NO. LAST CALIB. TEMPERATURE: 7.51 °C 15558 Y/11/0 pH: 8.32 S.U CONDUCTIVITY: \$\Phi_{15} \cdot 2 \text{ mS/cm} \text{ mS/cm} \text{ DO: } 1\phi_{15} \text{ mg/L} \text{ mg/L} \text{ TURBIDITY: } 6.72 NTU 15557 OTHER \$\frac{5}{2} \text{ NTU } 15558 \text{ MS/cm} \text{ SURFACE WATER } \text{ MALYSES: } EXPLOSIVES \$\Boxed{1} \text{ TAL METALS } \Boxed{1} \text{ SVOCs } OTHER \text{ SVOCs, Wetals, Explosives, Propellants, Pesticides, PCBs)} WET SEDIMENT INALYSES: \$\Boxed{2} \text{ EXPLOSIVES } \Boxed{2} \text{ TAL METALS } \Boxed{3} \text{ SVOCs } OTHER \text{ OTHER } \text{ OTHER } \text{ PULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs)}	Aver Sward from				~(®)		l fix	
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DO: IUL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs) PH: 43.32 S.U CONDUCTIVITY: 0.15 ms/cm DO: IUL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs) PULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs)	<u>B</u> '		READING	Concrete	707	De 0 pm 1	CINY	
CONDUCTIVITY: \$\oldsymbol{\psi} \cdot \sigma \sqrt{\psi} \cdot \sq	FIELD MEASURE	MENTS		UNITS	SERIAL NO.	Per 0 p- 1	CIAV AST CALIB.	7
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OTHER SULL: 0-07 15558 SURFACE WATER ANALYSES: EXPLOSIVES TAL METALS SVOCS OTHER FULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs) VET SEDIMENT ANALYSES: EXPLOSIVES TAL METALS SVOCS OTHER FULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs)	FIELD MEASUREI TEMPERA	MENTS TURE: pH: TIVITY:	7.51 8.32 \$152	UNITS °C S.U mS/cm	SERIAL NO.	Per 0 p- 1	CIAV AST CALIB.	
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ANALYSES: EXPLOSIVES TAL METALS SVOCs OTHER FULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs) VET SEDIMENT NALYSES: EXPLOSIVES TAL METALS SVOCs OTHER FULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs)	FIELD MEASUREI TEMPERA CONDUCT TURB OTHER Sul	MENTS TURE: pH: TIVITY: DO: BIDITY:	7.51 8.32 \$152 14.15 6.72 \$-47	UNITS °C S.U mS/cm mg/L NTU	SERIAL NO. 15558	Per 0 p- 1	CIAV AST CALIB.	
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NALYSES: EXPLOSIVES TAL METALS SVOCs OTHER FULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs)	FIELD MEASUREI TEMPERA CONDUCT TURB OTHER	MENTS TURE: pH: TIVITY: DO: DIDITY: XPLOSIVES	7.51 8.32 \$.152 \$\tau_15 6.72 \$\tau_0.47 -1.7	UNITS °C S.U mS/cm mg/L NTU ALS SVC	SERIAL NO. 15558 15557 15558	ee 0p-1	CIAV AST CALIB.	
NALYSES: EXPLOSIVES TAL METALS SVOCs OTHER FULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs)	FIELD MEASUREI TEMPERA CONDUCT TURB OTHER	MENTS TURE: pH: TIVITY: DO: DIDITY: XPLOSIVES	7.51 8.32 \$.152 \$\tau_15 6.72 \$\tau_0.47 -1.7	UNITS °C S.U mS/cm mg/L NTU ALS SVC	SERIAL NO. 15558 15557 15558	ee 0p-1	CIAV AST CALIB.	
FULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs)	FIELD MEASUREI TEMPERA CONDUCT TURB OTHER	MENTS TURE: pH: TIVITY: DO: DIDITY: XPLOSIVES	7.51 8.32 \$.152 \$\tau_15 6.72 \$\tau_0.47 -1.7	UNITS °C S.U mS/cm mg/L NTU ALS SVC	SERIAL NO. 15558 15557 15558	ee 0p-1	CIAV AST CALIB.	
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ecorded By: 15 1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/	FIELD MEASUREI TEMPERA CONDUCT TURB OTHER SALL SURFACE WATER NALYSES: SE VET SEDIMENT NALYSES: SE	MENTS TURE: pH: pH: TIVITY: DO: BIDITY: XPLOSIVES ULL SUITE (V	7.51 8.32 \$.152 \$.45 6.72 \$.47 -1.7 CCs, SVOCs, I	UNITS °C S.U mS/cm mg/L NTU ALS SVC Metals, Explose	SERIAL NO. 15558 15558 CS OTHER Sives, Propellants, Pr	Esticides, PCBs)	CIAV AST CALIB.	
COUNTIED BY. A VIII VIII AND CALL OF THE STATE OF THE STA	TURB OTHER SURFACE WATER UNALYSES: VET SEDIMENT UNALYSES: FU	MENTS TURE: pH: pH: DO: BIDITY: XPLOSIVES ULL SUITE (V	7.51 8.32 4.152 14.15 6.72 4.47 -1.7 D TAL METOCS, SVOCS, I	UNITS °C S.U mS/cm mg/L NTU ALS SVO Metals, Explose TALS SVO Metals, Explose	SERIAL NO. 15558 15558 CS OTHER sives, Propellants, Pro	Esticides, PCBs)	CIAV AST CALIB.	

Underwater Survey DISTRICT HTRW DRICEING LOG Underwater USACE - Louisville 1. COMPANY NAME 2. DRILLING SUBCONTRACTOR 115A Environmental NA 3. PROJECT RVAMO PBAOS RT 4. LOCATION RVAAP 8451 State Route 5 Ravenna, OH 44266 6. DIRECTION OF BOREHOLE **▼** VERTICAL INCLINED 7. NOTES PID MAKE/MODEL: PID SERIAL#: Colors from Munsell Soil Color Chart, Rev WATER LEVEL MAKE/MODEL WATER LEVEL SERIAL#: ELEVATION DEPTH CLASSIFICATION OF MATERIALS SPT DATA MONITORING REMARKS (Feet) Symbol (0.5 Feet) (PPM/CPM) (Sample IDs/Depths/Core Box/Etc.) Little to no deflector - Area void of anomilies Deflection showed defletion of 1/- 10. Interpritation was various items possibly 1-1.59 in length to the control of the contro Believe to be pieces of I-beam from Crave Frame Believe to be Deflection show rapid charge Interpretation was items of fragmentation and other ferrous 1- < lin in length metal objects + Lucution of pull and direction COMMENTS / SKETCH # Concrete pai 10 15 20 25 1 Box = | Foot

14 7|5|12

RVAAP RVAA PBA08 RI - Surface Water USACE - Louisville RVAAP 8451 State Rt. 5 Ravenna, OH 44266 2. PROJECT: RVAAP PBA 2008 RI and Wet Sediment Sample Log
1, COMPANY NAME: SAIC 3. Sample Team MIKE DENALLO RYAN LINNING SHEET 1 OF 7_ 5. Cordinates Recorded: p: 549516.98 E: 2353985.52 ELV 4. LOCATION ID: FWS SW/SD - 101 5. Surface Water Equipment Used: **SAMPLE TYPE:** GUIS 6. Sample ID and Time 7. Dupe ID (if needed) lown) FWS SW-101-5008-SW 9. Split ID (if needed) 8. MS/MSD ID (if needed) NIA 10. Wet Sediment Equipment Used: SAMPLE TYPE: VOCS - GRAB, ALL OTHES COMPOSITE PUSH PROBE 12. Dupe ID (if needed) FWS SD-161-5009-SD NA 14. Split ID (if needed) NA NA Weather Conditions: 7 8°F Activities in the Area 1 BUEILLAST LOCATION SKETCH/COMMENTS SCALE: None CLEMR WATER Field Notes: PRIMM GROUP; SAUD SM GOOD PLOWING STREAM NO IZE COUBLIGH Ghoel, some organics GRAVEL COARSE 199R 4/1 FENCE UEKY SOPT LINE SATURACE NOW - PLASTIC NO OBOR, ORGANIC MATGUAL POINT DIRECTLY EAST OF BEND THE FEME LINE PERINGTER RD. & Sample Location moved south see cevised additutes. **SURFACE WATER** ANALYSES: □ EXPLOSIVES □ TAL METALS □ SVOCs □ OTHER FULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs) **WET SEDIMENT** ☐ EXPLOSIVES ☐ TAL METALS ☐ SVOCs ☐OTHER ANALYSES: FULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs) 02/26/10 2-25-18 QC Checked by: 1 Recorded By: (Signature and Date) (Signature and Date)

SAMPLE LOG SHEET

PROJECT NAME: RVAAP PBA08 RI

PROJECT NO: 172819.00.09456.00.9200.02.200

SAMPLING LOCATION: FSW SW - 101 DATE COLLECTED (MM/DD/YY): 3/15/10 TIME: 1555
SAMPLE TEAM: RYTH LAUCICH, MIKE DEUMLO
WEATHER: 40°F BROSTY, CLOUDY ACTIVITIES IN AREA: NA
FIELD OBSERVATIONS (i.e. Water color, odor, flow):
N.C.
3/15/14
PHOTOGRAPH ID(S): NA

7enp 42.06°F

FIELD MEASUREMENTS	READING	UNITS	SERIAL NO.	LAST CALIB.
TEMPERATURE:		°C	15226	3/5/10
pH:	7.06	S.U	1	1
CONDUCTIVITY:	Ø. \$76	mS/cm		
DO:	12.18	mg/L	*	
TURBIDITY:	7.69	NTU	15557	3/15/10
OTHER NA:	42.00 KL			Ala:

Recorded By:

(Signature)

QC Checked by:

(Signature)

PL 7/5/12

RVAA PBA08 RI - Su	rface Water		- Louisville			RVAAP 8451 State Rt
and Wet Sediment S	ample Log		CT: RVAAP PBA 200			Ravenna, OH 44266
COMPANY NAME: SAIC	(1	3. Sample	Team Byan 1	aurich		SHEET 1 OF
			ulu Ciunni	naham		SHEET TOP
LOCATION ID: FWSswisel - 1	03		5. Cordinates Reco	rdèd! YES	· (N) 5!	52471.97 (E) 230 eus. 905.42 FT.
i, Surface Water Equipment Used: No	*UE		SAMPLE TYPE		,	ew. 905 42 FT.
S Sample ID and Time	417 04/ 1000		7. Dupe ID (if needs	•d)		
FWSSW - 103 - 50	112-51V: 1004		9. Split ID (if needer			
B MS/MSD ID (if needed) いひ			la Shit in (ii teeder	, 1/20		
0. Wet Sediment Equipment Used: \\	ad Aish Probe		SAMPLE TYPE	: Campas	alr. VOI	Ca Grane Compo
11. Sample ID	5013-SD 100	9	12, Dupe ID (if need	(NO	•	
13. MS/MSD ID (if needed)			14 Split ID (if needs	<u> </u>		
NO				No		
Veather Conditions: 310F P CLCLI	dy some win	d	Ac	tivities in the Are	B NON	DE -
LOCATION SKETCH/COMMENTS	,	1		1 8	SCALE:	None
					-	
Field Notes: WP. F. Sadurana L	0 -4			Ohn.		
ield Notes: Wet Sediment	MONUS C-A.	SILT (S	us, trace i	amount o	F	
gravel; loose, fine						
	B-6" CLAY Gray love 1 metting lov low plasticia	(CL)	iome silt	and scini	d.	
	aray love	all with	brownish	Vellow		
	mething 104	R 418	soft dan	ומאט על מאר)ו	57.	
2	iow pigsticit	y root	s and len	JRS		
surtace water collect	cted under ~	TEN	= Shipuu a	nd HILA	ſ	
surface water collective. Sample taken	on alialado	at look)	ט ך אוג		
		1 1		1 1 2		
		1.	wco	ds		
			· · · · · · · · · · · · · · · · · · ·			
	a parameter de la companya de la co					
	181	4				
woods	Street	200		anciel	SB	
		1	1	Caroley	الو (د	
	60, -		17	~ J.	w	
	100°C				Occuse E	
	355				B	
	White Str	20 00	7		_ 2	
	- OKEN STY			/		4 Pt. 15 ~ 159 F
	(4)			The state of the s	1000	upstream from George load
		1	ماء			George load.
			voods			
CUDEACE WATER						
SURFACE WATER ANALYSES: EXPLOSE	VES TALMETA	ALS SV	ось Потне	R		
₩ FULL SU	ITE (VOCs, SVOCs, M	letais, Explo	sives, Propellan	ts, Pesticides	, PCBs)	
, ,		•				
WET SEDIMENT ANALYSES: ☐ EXPLOSI	VES T TALMETA	ALS III SV	OCS FINTHE	R		
FULL SU	VES 📋 TAL META ITE (VOCs, SVOCs, M	letals, Explo	sives, Propellan	ts, Pesticides	, PCBs)	
· ·	0 . 0			~ -	1	
Recorded By: MILA	e and Date)	nDC Check	ed by:	140	} `	
(Signa)ure	and Date)	A CHECK	J	(Signature	and Date)	
17	1 /2/1011	. 1		2/10	lid	

SAMPLE LOG SHEET

PROJECT NAME: RVAAP PBA08 RI

PROJECT NO: 172819.00.09456.00.9200.02.200

SAMPLING LOCATION: FWSSW - 103	DATE COLLECTED (M	(MM/DD/YY): <u>03/14/2019</u>				
		TIME:	0927			
SAMPLE TEAM: ITEANER MILLER						
WEATHER: 40°F, Sunny no Wind	ACTIVITIES IN AREA:	HONE				

FIELD OBSERVATIONS (i.e. Water color, odor, flow....):

WATER IS CLEAR WITH 1-2 INCHES OF GOOD FLOW. THIS SIREAM LOOKS LIKE

A MATURE STEEFAM W/ 3' HIGH BANKS ON EACH SIDE

PHOTOGRAPH ID(S): NOME TAKEN

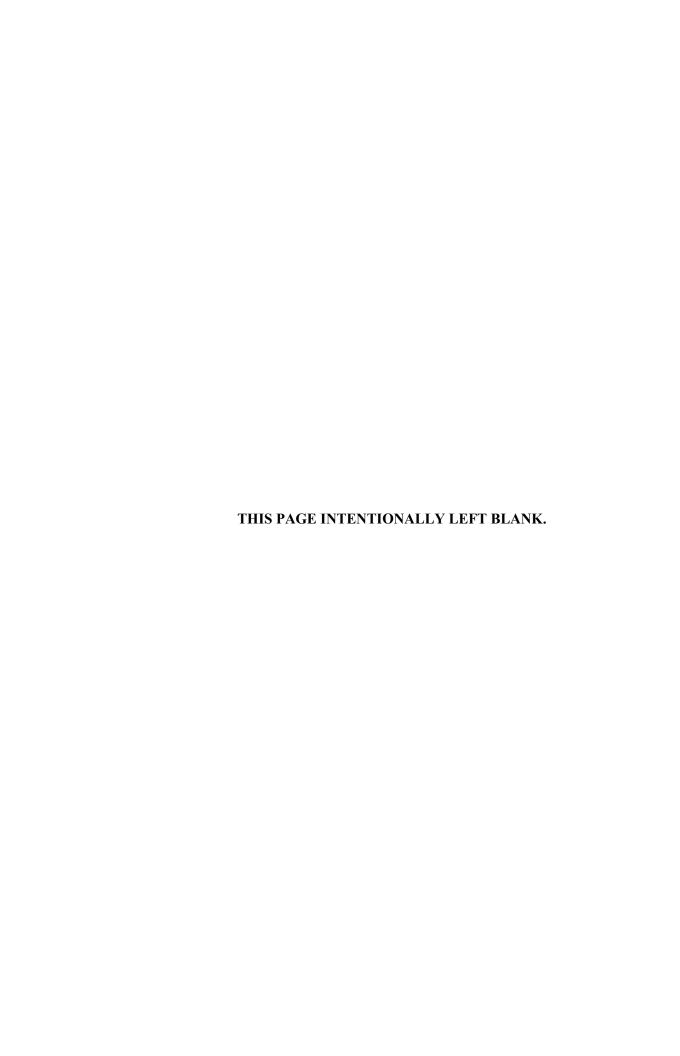
36800

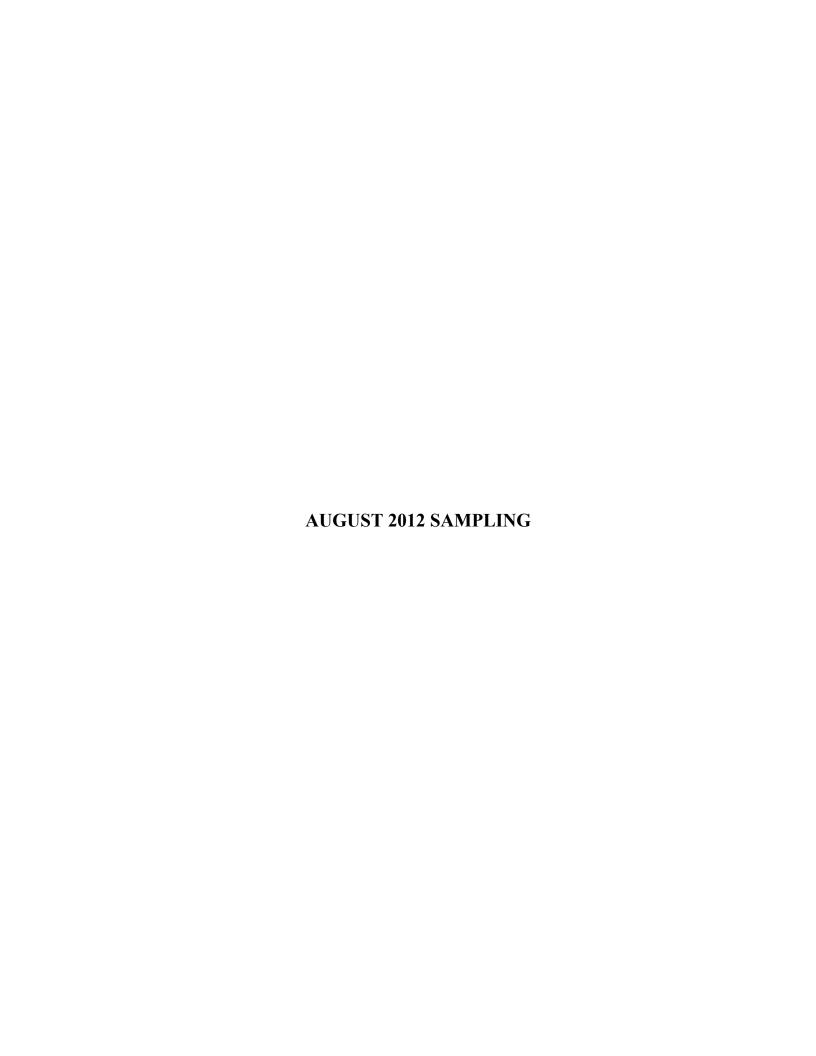
FIELD MEASUREMENTS	READING	UNITS	SERIAL NO.	LAST CALIB.
TEMPERATURE:	331023,48	· CFOR	15556	03/14/2010 BY SV
pH:	7.83	S.U		
CONDUCTIVITY:	01148	mS/cm		
DO:	13,59	mg/L		
TURBIDITY:	7,80	NTU	1	
OTHER:	MA	MA	RL DKA 1555	7

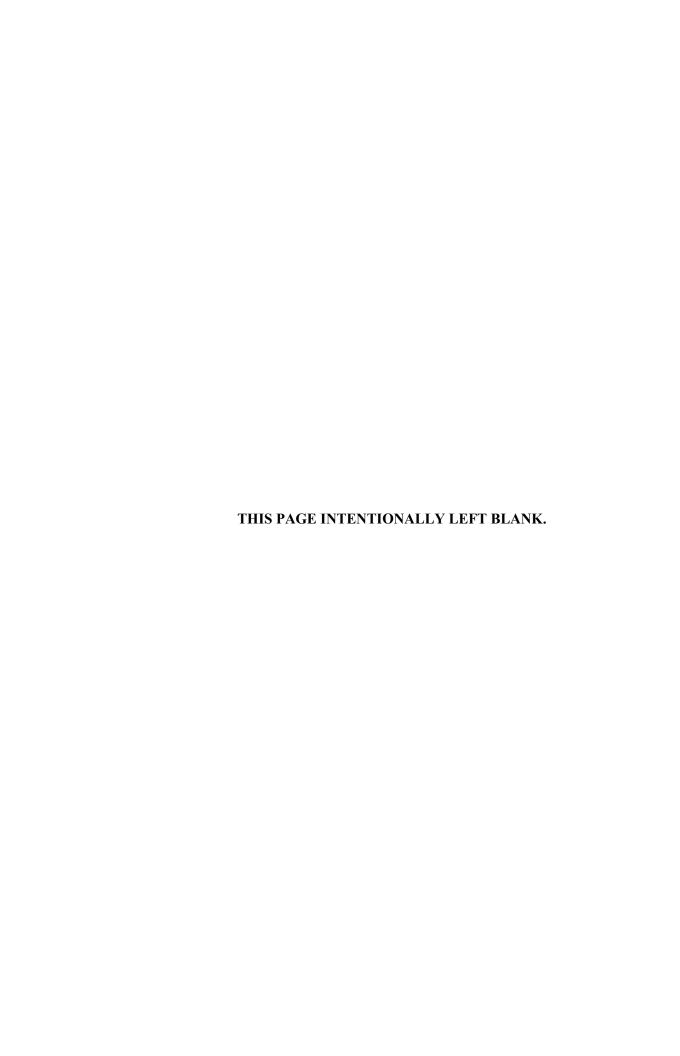
Recorded By:

QC Checked by:

(Signature)







CAIF	RVAAP -	Surface Wa	Vater & Wet Sediment Field Form SHEET 1 OF 1						1		
From Science to Solutions	USACE - Lo	puisville	RVAAP	8451 State Rt. 5	1. Sample	Team: Ame	AMANOA TRENTON				
rtom Science to Solding	RVAAP PB/	A 2008 RI		a, OH 44266	KATTE WELLS						
2. Location ID:	0.1			3. Revised Coordinate		t:		_			
	LLU-090					32" W8	31.061	<u>ንፁ.</u> ՟	798	23"	
4. Surface Water Sample 10: LLLO SW- (1910-	6971	Su)		5. Date and Time:	12 .	1200					
B. Dupe ID (if needed):	00 11-0	<u> </u>		7. Split ID (if needed)	10;	1244					
NA				ΔИ							
8. Surface Water Sample Type	and Equipment Us	ed: DIRECT 1	FILL -	GRAB			9. M	S/MSD	i k	A I	
10. Wet Sediment Sample ID:				11, Date and Time:							
LL6SD-094	0-28.1h)-2D		08/09/		<u> 121ф</u>				-	
12. Dupe ID (if needed):				13. Split ID (if needed	1)						
NA- 14. Wet Sediment Sample Type	and Equipment U	sed: O	. (NA			1				
14. Wet Sediment Sample Type 16. Weather Conditions:			E UNDTYO	17. Activities in the Ar	SCO	. 06 : 10 k mili	UOTS 15. K	/IS/MS	D: N	/ 기	
	F; ligh	r (un			ПО						
LOCATION SKETCH/CC	MMENTS					SCALE:	None				
Field Notes: POND POND; POND IS LIGHT GY THYZOUGHOUT	IS CLOA	R W/ Some	AQUATI	C VESETAT	105	GROWTH.	SED	IME			
		1	CONCRE	TE PAD	1						
		1/4	4		1						
		W			1			1		1	
					ļ	V/ UET	CROW				
	-\())	100) 1.MD-20	- 		ARE	CAC			
	Ψ		OPE	N WATER		1	Po	CO.		SE STAILS	
						Y/			(0)		
		W =		and the second second second		1			: -	1	
		D				1/2	1 1 1 1 1 1 1		m		
		W.	(1)			X	1				
			CONCE	STE PAD AD							
	DIRECT									-	
bree and philips a		SAMPLE S	EDIMENT	SAMPLE TUST	T OFF CO	CATION PA	AD NET	7e 7	DIR	द्धा	
FIELD MEASUREMEN	13 COLLECT	ED W A HAM	YNA HT	1828 METER	+ HAN						
FIELD MEASUR		READING	UNITS	SERIAL N			ST CALI	3.			
TEMPER	RATURE:	22.87	*C	110-004	840 C	08/09/12					
CONDI	pH:	6.50	S.U								
CONDO	CTIVITY:	0.190 3.29	mS/cm mg/L	 	_					-	
TU	RBIDITY:	1,23	NTU	20020	VA50					-11	
	DRP :	68.9	mV	110-0048		1/			_		
			1 1119	TITIE GRET C	142						
SURFACE WATER ANALYSES:	EXPLOSIVE FULL SUITE	S TAL MET	ALS 🗍 S Metals, Exp	VOCs OTHEI closives, Propellan	R ts, Pestic	ides, PCBs)					
WET SEDIMENT ANALYSES:	EXPLOSIVE	S TAL MET	TALS ☐ S Metals, Exp	SVOCs OTHEI	R its, Pestic	ides, PCBs)					
Recorded By:	nonda (Signature a	nd Date) 08109	QC Chec	ked by: <u>[//</u>	tte (Signa	LILLA I	10/17	12			

