APPENDIX A

Field Sampling Logs

Discrete Surface Soil Samples Incremental Sampling Method Surface Soil Samples Soil Boring Samples Surface Water and Sediment Samples

DISCRETE SURFACE SOIL SAMPLES

			DIST	RICT			BOREHOLE NUMBER /,	
HTRW DRIL	LINGL	OG (continued)	US	ACE - Louisville			LLSSS - OF	3
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3. PROJECT	WAAP	PBAOB RE		4 LOCATION RVA	AP 8451 Sta	te Route 5 Ra	avenna, OH 44266	
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INCREMENTAL SAMPLING METHOD (ISM) (FORMERLY MULTI-INCREMENTAL) SURFACE SOIL SAMPLES

RVAAP - Multi-Incremental (MI) Field Form SHEET OF 1 1. Sample Team: Sara **USACE - Louisville** 1130 RVAAP 8451 State Rt. 5 From Science to Solutions Ravenna, OH 44266 RVAAP PBA 2008 RI Emily Lunninghe 2. Location ID: 3. Revised Coordinates Recorded: LLSJS - OGLM NO 4. Sample ID: 5. Sample Date and Time: LUSS - 062M - 5044-50 03/03/10 1630 6. Dupe ID: 7. Solit ID NF MA 9. MS/MSD Collected: 8. MI Equipment Used: SS Push Probe + Bowl 10. Activities in the Area: 11. Soil Description and Field Notes: CLAY (CL). and Silt some Sand trace Gravel. brown 1042513 and dark gray love 41, with yellowish brown (Iran staining) 1042518 soft to medium stiff: damp to moist stightsplasticity, some organics (roots, leaves). 12. Location Sketch/Comments (not to seale): K USSS-062M € US\$5-061` 13. MI Soil EXPLOSIVES I TAL METALS SVOCs PAHs OTHER FULL SUITE (VOCs, SVOCs, Metals, Explosives, Propellants, Pesticides, PCBs) Analyses: Recorded By: <u>Str. Unil 3/3/10</u> QC Checked By: <u>Signature and Date</u>) QC Checked By: <u>Signature and Date</u>) QC Checked By: <u>Signature and Date</u>)

From Science to Solutions	USACE - Louisville	RVAAP 8451	State Rt 5	1. Sample Team:	STEVE VI	Stale	 }	L
	RVAAP PBA 2008 RI	Ravenna, OH	1 44266		-11-1P		1	
2. Location ID:		3. Re	vised Coordinate	s Recorded:				
4555-1	w3m		ENF.					
4. Sample ID:		5. Sa	mple Date and Ti	me:				
LL5SS-043M	-5045-50	0	3103 kan	D 100	DAD .			
5. Dupe ID:	· · · · · · · · · · · · · · · · · · ·	7. Sp	lit ID:	1	4			
<u>USSS-96311</u>	- 4051-SO	L	1555-U	03M - 604	D-QA			
3. MI Equipment Used:		9. MS	MSD Collected:	NO				
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 Soil Description and 	field Notes:							-
2. Location Sketch/Co	mments (not to scale);	•	······································	· · · · · · · · · · · · · · · · · · ·				
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B. MI Soil Analyses:	AUMP DECLA DECLA DECLA DECLA DECLA DECLA DECLA ELLS XPLOSIVES X TAL METAL ULL SUITE (VOCS, SVOCS, ME	reliant rel	PAHs O Topellants, Pe	THER				

	USACE - Louisville		State Dt E	. Sample Team:			
From Science to Solutions	RVAAP PBA 2008 RI	Ravenna, OH	44266	SANA the	6		
2, Location ID:		3. Revi	sed Coordinates	Recorded:	<u> </u>		
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4, Sample ID:		5. Sam	ple Date and Tim	8:			
USSS-QUAY	n- 5064-50	02	03 2011	D 1120			
6. Dupe ID		7. Split	ID;				
NH 8. MI Equipment Used:		N/†	- ASD Collected:	<u> </u>			
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13. MI Soil Analyses:	KPLOSIVES A TAL MET	ALS SVOCs ALS Ketals, Explosives, Pr	PAHs 07	HER			
13. MI Soil Analyses:	KPLOSIVES A TAL MET JLL SUITE (VOCs, SVOCs, M	ALS SVOCs Als Ketals, Explosives, Pr	PAHs 001 ropellants, Per	HER			
13. MI Soil Analyses: X El Recorded By: Att	KPLOSIVES A TAL MET JIL SUITE (VOCS, SVOCS, M Wing 3/3/10	ALS SVOCs A Metals, Explosives, Pr	PAHs 01 ropellants, Per	HER sticides, PCBs)	3 2010		n - Person Stranger

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	RVAAP PBA 2008 RI	Ravenna,	OH 44266	`````	<u> </u>	Prin	14		
2. Location ID: LL5ss	-065M	3	. Revised Coordinate	es Recorded:			·		
4. Sample ID:		5	. Sample Date and T	ime:					·····
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6. Dupe ID:		7	. Split ID: MA			that .			
8. MI Equipment Used:		9	MS/MSD Collected:	LLSse mer	~ M C	114 7		in	<u>ح ۱</u>
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		Dita 205	5- 165 m (5 m 4 - co)						N .
		Dita 2253	5- 165 m 5 m hr - clos						
		Dita 2055	5- 163 m 5 m h - col						N.
Crive	LLS ₅₅	062M	5-25-20-0001 5-20-0001						
Creve A.C.		Dita 2055	5- 16-3 m 5-5m hr - ccol						Ϋ́,
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Crive Corive	Lusss-	Dita 2053	5- 16-3-m 5-5-m-1- 5-5-m-1						
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From Science to Solutions	USACE - Louisville	RVAAP 8	451 State Rt. 5	1. Sample Tea	am: RICH	SPEH	121	
	RVAAP PBA 2008 RI	Ravenna,	OH 44266					
2. Location ID:	······································		3. Revised Coordinate	es Recorded:				
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4. Sample ID:		ŧ	5. Sample Date and T	ime:				
LL555-Cla	om-5049-50		(13/03/2010	<u>p 10</u>	15			
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3. MI Equipment Used:	Martine		ND MS/MSD Collected					
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From Science to Solutions	USACE - Louisville	RVAAP 8451 State Rt. (5 1. Sample Team: En	vily Cinnin	, han	
	RVAAP PBA 2008 RI	Ravenna, OH 44266			1	
2. Location ID:	undan	3. Revised Coordin	nates Recorded:			
LL 555 - 06	7 M	No				
4. Sample ID:		5. Sample Date and	d Time:			
$LL5_{55} - 067$	M-5099-50		2010 1440			
o. Dupe ID.	~ A	7. Split ID:				
8 MI Equipment Used:	/]+				·····	ŝ
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12. Location Sketch/Comn	nents (not to scale):			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	Ń
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3. MI Soil Analyses:	PLOSIVES TAL METAL L SUITE (VOCS, SVOCS, Me	24 24 24 26 26 26 26 26 26 26 26 26 26 26 26 26	CTHER_Pesticides, PCBs)	7		

	RVAAP - Multi-I	ncrementa	I (MI) Fie	eld Form	SHEET	1 0
From Science to Solutions	USACE - Louisville	RVAAP 845	1 State Rt. 5	1. Sample Team:		
2 Location ID:	RVAAP PBA 2008 RI	Ravenna, Oi	1 44200 avised Coordinate	EMIL-1 (un	minglam	
LIEG-	DUBM		10			
4. Sample ID:		5. Si	ample Date and Ti	me:		
U5SS-OUE	<u>m-sasa-su</u>		13/03/201	<u>ø 1130</u>	<u>\$</u>	
ND		/. 3				
8, MI Equipment Used:		9. M	NU S/MSD Collected:	NO		
SS PUSH PROS	BE AND BOWL	10. A	Activities in the Are	" NONE		
11. Soil Description and	Field Notes:	0	10 m Str	and manual 14	NUR 21.	<u>د</u>
- damp: 4"-1' Silty (N/n-plastic 'some CLAN (CL), some s	organissi Silt trace	(roots) Gravel	light brow	unish gi	rau I.Un
stiff. la materia	al (roots, leaves, a	na tugs).	(non sta Some a	reas neve i	lle 'organ wes due	רי הונ <u>ה</u>
12. Location Sketch/Cor	nments (not to scale):		Priost 1	naterial w	as negu	21
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	7. 4.3.300	115	5-05Lul	du la		andara
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	6		V/		70% hood a	1
		ROAD			BU% Qint	11
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13. MI Soil Analyses: XI E	EXPLOSIVES 🕅 TAL META	LS 🗂 SVOCs 🛛		THER		
Î F	ULL SUITE (VOCs, SVOCs, M	etals, Explosives,	Propellants, P	esticides, PCBs)		
Δ	1 1 -1	2018) N	ρ.	al	1.1	
Recorded By:	1/ Uniruneller		cked By:	Will 3	/3/10	
(\sim usignature and Date $\sim 33 \pm 6$	64000-2		(Signature an	id Date)	

<i>3441</i> L.	USACE - Louisville			1. Sample Team:	1	_	I
From Science to Solutions	RVAAP PBA 2008 RI	Ravenna.	, OH 44266	Grand Moore			
Location ID:		;	3. Revised Coordinate	s Recorded:			
LL555	-agm		NONE				
Sample ID;			5. Sample Date and T	ime:			
4555-0691M	-5051-50		03/03/201	0 1215			
Dupe ID:			7. Split ID				
<u>NA_</u>	<u> </u>		NA				
	1 0 0	18	v. MS/MSD Collected	N/4			
>> MSH HUDDE	AMD HOWL		To: Acuvities in the An	NONE			
1. Soll Description and F	ield Notes:						
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2. Location Sketch/Comr	nents (not to scale):						
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	135 CEARLY	LL535-0	69m			-	-
	135 KARANI	LL535-0	169m				
	1334CAM	LL535-0	69m				
	1354 CA 194	LL595-Q	69m				
	1339 CE 304	LL595-9	Ж9m				
	1339 CE 334	LL595-0	69m				
	135 4 B B B B B B B B B B B B B B B B B B	LL595-0	69m				
		LL595-0	Ж9 m				
		LL595-0	Ж9 <i>т</i> .				
3. MI Soil Analyses:							
3. MI Soil Analyses:		LLS95-Q	s □ PAHs □C es, Propellants, P	DTHER			
3. MI Soil Analyses:	PLOSIVES TAL METAL LL SUITE (VOCs, SVOCs, Me	LLS35-0 4 20 LS SVOC etals, Explosive	s D PAHs C es, Propellants, P	DTHER			
3. MI Soil Analyses:	PLOSIVES TAL METAL LL SUITE (VOCS, SVOCS, Me	LLS35-Q	SS □ PAHS □C es, Propellants, P	OTHER			

	USACE - Louisville		Ed Ctata Dt C	1. Sample Team: A . 12	<u> </u>	1	I
From Science to Solutions	RVAAP PBA 2008 RI	Ravenna.	OH 44266	- Wike	Denel	<u>lá</u>	
. Location ID:		3	Revised Coordinat	es Recorded:			
il 555 - 07	OM						
Sample ID:		5.	Sample Date and	Time:	······		
LL5-55 - 07	OM-5052-50		3/3/10	1445			
Dupe ID:		7.	Split ID:				
N	A		NA				
MI Equipment Used:	<u>^</u>	9.	MS/MSD Collected	ma			
SS Push	Probe + Bowl	10	Activities in the Ar	ea: Abana			
1. Soil Description and Fi	eld Notes: SILT (ML)	. Little Clay	True Sc	ad concluse Co			
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45% wooded	5% Open Fill	d					
2. Location Sketch/Comm	ients (not to scale)	<u></u>			F F 3		
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MI Soil Analyses: XI FXP	LOSIVES IN TAL METAL						
MI Soil Analyses: 🛛 EXP	LOSIVES 🕅 TAL METAL L SUITE (VOCs, SVOCs, Me	LS SVOCs	PAHs C	THER		· · · · · · · · · · · · · · · · · · ·	
MI Soil Analyses: 🛛 EXP	LOSIVES 🚺 TAL METAL L SUITE (VOCs, SVOCs, Me	LS [] SVOCs etals, Explosives	PAHs C , Propellants, Po	THER pricides, PCBs)			
MI Soil Analyses: X EXP FUL	LOSIVES 🕅 TAL METAL L SUITE (VOCs, SVOCs, Me	LS 🔲 SVOCs etals, Explosives	PAHs C Propellants, P	THER			

		RVAAP -	Multi-Inc	remer	ntal (MI) Fi	eld F	orm		SHEET	1	OF
From Science In	Solutions	USACE - Louisv	ille	RVAAP	8451 State Rt. 5	1. Sam	ple Team:	Rug	n Lau	nel	
	0012110110	RVAAP PBA 200	08 RI	Ravenna	a, OH 44266			-/			
2. Location ID:		71.0			3. Revised Coordinat	es Record	led:				
LLS	55 - U					NO					
4. Sample ID:	LLSSS-	071M - 500	53-62)		5. Sample Date and	Fime: r}		1100	-		
6. Dupe ID:					7. Split ID:			<u>. 1</u> 05			
NA		NA			NIA		M				
8. MI Equipment U	sed:				9. MS/MSD Collected	:	NA				
	SSBon	1 + Push In	ubr		10. Activities in the A	rea:	rone			_	
11. Soil Descri	otion and Fi	eld Notesi ND3	Little Silf	1					8		
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SOFT CA	NSIRTENO	-9									
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12. Location Sk	etch/Comm	ents (not to scale)).				11	8		1	1
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and a second			V30	1						11111	1
13. MI Soil											
Analyses:			TAL METALS	🗆 svoc	s 🎦 PAHs 📋	OTHER					
	U FUL	L SUITE (VOCs, S	SVOCs, Metals	s, Explosiv	es, Propellants, F	Pesticide	s, PCBs)			
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Recorded By:	Xn	VM 31	8 10	~~~	Shaakad Dur	5 C	y) 7	BIN		
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	RVAAP - Multi-I	Incrementa	al (MI) Fie	ld Form		SHEET	1	OF	1
From Science to Solutions	USACE - Louisville	RVAAP 845	1 State Rt. 5	1. Sample Team:	in il	Ge Cini	nni	nel	C. 140
	RVAAP PBA 2008 RI	Ravenna, C	H 44266	S	<u>, , , , , , , , , , , , , , , , , , , </u>		1.11	J	(AKK)_
2. Location ID: LL 555	-072M	3. F	Revised Coordinate:	s Recorded:					
4. Sample ID:	. W72A-5054-5	5. 8	ample Date and Til 3/8////	me:	045	-			
6. Dupe ID: LLScc -	- 072M-6053- E	- 7. 9	plit ID: LL S <s< td=""><td>-072M-</td><td>· (~@5</td><td>72 - Q</td><td><u> </u></td><td></td><td></td></s<>	-072M-	· (~@5	72 - Q	<u> </u>		
8. MI Equipment Used:		<u>9.</u> N	IS/MSD Collected:		<u></u>				
SS Pu	sh Probe + Bowl	10.	Activities in the Are	a: None					
100% haddle	od Area								
12. Location Sketch/Comr	nents (not to scale):		s i i i i i i i i i i i i i i i i i i i	· · · · · · · · · · · · · · · · · · ·					4
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31	NG sanpte. LL555-072M.		US 55 . Ø7	2m					· · · · · · · · · · · · · · · · · · ·
31	NG sanpb. LL555-072M,		U.S. 55 . Ø7	2m					· · · · · · · · · · · · · · · · · · ·
3	WC sanpk. 16555 - 072M,		U.S. 5.5 - Ø7	m					
31	KC sanpte. LL555 - 072M.		U.5.5 Ø7						
3	VC sanpk. LL555 - 072M,		US 55 - Ø7						
31	V& sampt. 16555-072Mr		US 55 - Ø7	2 3					
31 31 3. MI Soil Analyses: X EXI X FUI	PLOSIVES STAL METAL LUSIVES TAL METAL LUSIVES (VOCS, SVOCS, ME	LS 🔀 SVOCs [etals, Explosives,	<i>US̄₅₅Φ</i> 7	33 THER					

	USACE - Louisville		454 Chata Di 1	1. Sample Team:	Sala // tan	
From Science to Solutions	RVAAP PBA 2008 RI	Ravenna	451 State Rt. : . OH 44266		JANA MISIE	
2. Location ID:	073M		3. Revised Coordin	ates Recorded:		
LLS	SS- OT MA JINO			No		
l, Sample ID: U 5s5-	073M-5055-50	1	5. Sample Date and 3/8//0	1 Time:)	1205	
B. Dupe ID:	NA		7. Split ID:	`		
. MI Equipment Used:			NA MS/MSD Collect			
ss Pi	when Prober + Bowl	1	0. Activities in the	Area:		
1. Soil Description and F	ield Notes:			10004		
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ANCIAN	FUEL OALD	- GILAN		1. (1. 5		
most have	, rive SAUD	DARK G	RAYUN ISKI	ow 109R	12	
we, DAMP, N	ION - PLASTIC, RC	273				<u>C</u>
MI SAMPLE AN	14 ~ 902 Woolen					
2. Location Sketch/Com	ments (not to scale):					1
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. MI Soil		_	1184			
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From Science to Solutions	USACE - Louisville	RVAAP	8451 State Rt 5	1. Sample Team: Emi	L (un	n'in	ch.	
Tun science to solutions	RVAAP PBA 2008 RI	Ravenn	a, OH 44266		<u> </u>		<u>y re</u>	<u>n</u>
2. Location ID:		I	3. Revised Coordinate	s Recorded:			···	****
LLSss - a	MYTC		NO					
4. Sample ID: $LLSSS-\Phi^{-}$	74M - 5056-50		5. Sample Date and Ti 3/3/10	me: 154ω				
6. Dupe ID: ℳ ^A		<u></u>	7. Split ID:	<u> </u>				
8. MI Equipment Used:	ì. 1		9. MS/MSD Collected:	AVA			* _	<u>.</u>
55 VJ-	st probe 1 Bowl		10. Activities in the Are	" NONE				
		D.16h w/ web		Trees LLS roco	/ LLSSS7 076M			
	10	LLS	1000 1000 Arou 55 - 074M	icissi ors cravely				·
I3. MI Soil Analyses: 🚺 EXP 🗌 FUL	LOSIVES 🏹 TAL METAL L SUITE (VOCs, SVOCs, Me	S 🗍 SVOC	Cs ⊠ PAHs ⊡O ves, Propellants, Pe	THER		٩		
Recorded By: <u>St. 9</u> /	ignature and Date)	QC (Checked By:	(Signature and D	<u>2/201</u> ate)	'Q		

/AAP PBA 2008 RI			1. Sample Team:	- U.co	
	Ravenna, OH 4	4266		ra mor	
	3. Revis	ed Coordinate	s Recorded		
M		No			
10-0457-50	5. Sam	le Date and Ti	me:		-05
, 1 - 3 6 - 1 - 20	7. Split	D:	VANT 3/3/10	1350	
NA			M		
	9. MS/N	SD Collected:	NA		
USA Probe + Bowl	10. 6	lies in the Are	a None	~	
s (not to scale): 40					
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	NA USA Probe + Baul Notes: SAND (SM Gray 156 Bizwan 10) s (not to scale): 40 Gray 156 Control (Scale): 40 Scale	Notes: SAND (SM), THE Gray ish Bizwa 104R 4/2, LOUS s (not to scale): 40 Gravitation 100 M =	Notes: SAND (SM), The Hash	NA UCA Probe + Baul Notes: SAWD (SM), The Hard Science of Fine Grayish Bizwan 10 YR 4/2, LOUSY, Meist, Nonjalast s (not to scale): 40 (Structure) (Structur	NA NA Notes: SAWD (SM), The first sum Some Gravel & 14/2 S. 14 Somy ist Brown 104R 4/2, Louise, Month & Nonglastic, s (not to scale): 40 S (not to sc

From Science to Solutions	LISACE Lautaville				mnie Team [,]		
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2. Location ID:			3 Revis	ad Coordinates Rec	<u>CH SI7CIN2</u>	£	
115cc- 1	nan		1.10	12	1000.		
4 Sample ID:			5. Samp	e Date and Time:			
U535-0	D710m-5058-	-50	03/	23/20100	120	Ø	
3. Dupe ID:			7. Split I););			
NA			NA				
8. MI Equipment Used:			9. MS/M	SD Collected NC			
SS AUSH-PEOBE,	BUWL & SDOON		10. Activ	ities in the Area:	IONE		
2. Location Sketch/Com	iments (not to scale):		3				
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From Science to Solutions	DVAAB BBA 2008 BI	RVAAP	8451 State Rt. 5	Sampe real Sara	Hise		
2. Looption ID:	RVAAP PDA 2000 RI			. Described			
z. Location ID:	5 077M		3. Revised Coordinate	IS RECORDED			
4. Sample ID:	2 22 Ф. С. М.С.		5 Sample Date and T	ime:			
LL	Sss - 077M -5059	-50	3/8/10	1100			
8. Dupe ID:			7. Split ID:	1140			
N.	4		MA				
B. MI Equipment Used:			9. MS/MSD Collected	NA			
SS Push	-Probe + Bow)		10. Activities in the An	a: None			
11. Soil Description and	Field Notes:) (SM) ."	Imen Sitt T	Concert of	Finan		
12. Location Sketch/Coл	nments (not to scale):			~~ //			
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5		5 U.555	Ditch w	40 (51 1 Weter in it		L	55-071
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2 4 4 4 4 4 4 4 4 4 4 4 4 4		5 U.555	Ditch w	40 (51 1 weter in it			55 - 47 - 1
LLSSS-072 I3. MI Soil Analyses:	M 52 SXPLOSIVES M TAL META	S USSS	Ditch w	yo 51 1 weter in it J DTHER			55 - U 7 1
LLSSS - ¢72 I3. MI Soil Analyses: X E	M 52 EXPLOSIVES TAL META ULL SUITE (VOCs, SVOCs, M	LS SVO	Ditch w Cs & PAHs C ives, Propellants, P	VG SI weter in it DTHER Pesticides, PCBs)			
LLSSS-072 I3. MI Soil Analyses:	M 52 EXPLOSIVES TAL META ULL SUITE (VOCs, SVOCs, M	ALS C SVO	Ditch w Cs & PAHs Co ives, Propellants, P	DTHER			
LLSSS - ¢72 I3. MI Soil Analyses: □ F Recorded By: ₩	M 52 EXPLOSIVES A TAL META ULL SUITE (VOCS, SVOCS, M STAL 3/8/10	LS SVO	Ditch w Ditch w Cs & PAHs C ives, Propellants, P Checked By:	DTHER esticides, PCBs)			

 \bigcirc

SOIL BORING SAMPLES

		100			DISTRICT			S-DHOR			BORE	HOLE NU	MBÉR	
	ILLING	LUG			USACE	- Louisvil	е				L	L55	B-1	057
1. COMPAI	NY NAME				2. DRILLIN	G SUBCONTR	ACTOR							0
SAIC					Frontz (Drilling					SH	EET 1	OF	2
3. PROJEC	T RUAMP	PB	7 08	RI		4. LOCATIO	N RV	AAP 845	1 State	Route	5 Ra	venna,	OH 44	266
NAME OF DRILLER	Joremy	Loc	LEON	F ····		8. MAKE/MC	DEL OF DA		Geopr	obe	6.62	20D1	Γ	
SIZES AND TYPES O	F SAMPLING EQU	IPMENT				8. BOREHO		NE-55	1080	a the	- ALK	Bac	AND	
1,5	"x4" 1	trem	TE L	NER		9. SURFAC	SLEVATIO	N/DATUM [55469	9.0	312	354	161.4	Y
2"	X4' D	UAR TA	BE			03/03 15 DEPTH	SHOUNDW/	STARTED		0	COMP	PLETED:	153	0
3"	XI H	AND I	ALGER			16. DEPTH	O WATER	ELAPSED T	ME AFTER	BORE	IOLE CO	MPLETION	N	_
OVERBURDEN THIC	CKNESS	12+1	T	36	AN 1999 14	100				NA	7			
DEPTH DAILLED IN	TO BEDROCK	NA	1			17. OTHER	WATER LEV	EL MEASUR	REMENTS (NLCLU	DE DATE	E/TIME)		
TOTAL DEPTH OF E	BOREHOLE	13=TT	11			1				NA				
I. GEOTECHNICAL SA	AMPLES	UNDIST		A	DISTURBE	0 MA	=2	19. TOTAL	NUMBER	OFCOR	EBOXE	s NA	1	
I. CHEMICAL SAMPLE	IS	CHEM	Planst /	AHRAD:	NA	OTHER:		3	21	TOTAL	CORE P	RECOVERY	Y % A	A
I. DISPOSITION OF BO	OREHOLE	DATE ST	ARTED/INS	TALLED: ()	303110;	1210	DATI	E COMPLET	ED/ABAND	ONED:	03/03	3/100;1	330	
ACKFILL TYPE:	GROUT	<u>م</u>	BENTO		TEM	PORARY WEI	L POINT	Æ	MONITO	RING W	ELL	_		
BRG	ii: ≤ Background 7 - Einst Wates F	B	GS: Below	Ground Su	ntace Statia Matar 1	CPM: Cou	nts per Min	ute Nat Analia	PPM: Pa	arts pe	r Million			
V	First water c	:ncountere	0		Static Water L	.evei	INA;	NOT Applica	1010	-	-			
OCATION SKE	TCH/COMME	ENTS					1.1		SCAL	Ε:	Non	e		
		T	11		1			11-	Ar	CS(1	ale	IMA	NIN	
		11	ne provins pro	11	OVIN	RTED	BOR	NO 1	y ha	C OI	ou	Luri	11.4	้าไม
		11		R/	-Kern	WITH	111	DITU			i i			N
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States American and American Constitution				Onn	RIGINHU I	SIL	1.17	H	1			1	1 1	
		- in the second second	A Street Street	and a second	UNDINU	N N	FDITC	1	James Law		-	i	service and the service of the	
		N		18/	BORING S	isat o	FDITC							
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				- Ja	BOGINS									
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US A of El Louis	Army ngin sville VAA	P PE aven	A 2008 Remedial Investigation na Army Ammunition Plant 8451 State Route 5 Ravenna, Ohio 44266 Portage County	RVAA Load L LL5sb Start Date : 03, End Date : 03, Northing Coord. : 55 Easting Coord. : 23 Total Depth of Boring : 13	NP-39 ine 5 -052 /03/10; 1210 /03/10; 1330 4699.03 54761.44 .0'	Drilli Drille Desi Type Geo Ove Bore Sam	ing Compar er er of Drill Rig logist rsight Comp shole Diame upling Equip	ny Drill Dany eter oment	 Frontz Drilling Jeremy Leckrone Geoprobe 6620DT Direct Push Technology Amanda Trenton SAIC 2" 1.5" x 4' Long Acetate Liner 2" x 4' Dual Tube 3" Hand Auger
Depth in feet	USCS Symbol	USCS Graphic	Description	on	Analyses		Recovery	Collection Interval	Comments
0	SM		(0.0' - 0.5') SILT and SAND (SM); grayish brown; loose; wet; abunda (0.5' - 3.6') CLAY (CL); little Silt; lit subangular; 10YR4/3 brown, 2.5Y; 10YR8/2 very pale brown; stiff; dry	10YR3/2 very dark nt organics. tle Gravel, 1/4" - 1/2", 5/1 gray, and little r; medium plasticity.	LL5sb-052-5149-SO, LL5sb-052-6092-FD, & LL5sb-052-6095-QA collected from 0.0' - 1.0' 03/03/10 at 1235 for TAL Metals + Hg, Explosives, PAHs.	on - , and	1.0'/1.0' A 2.5'/3.0'		Soil Color Chart Munsell 2000 Rev. Ed.
3-	sc		(3.6' - 4.2') Fine grained SAND ar Gravel, 1/4" - 1", subangular; 10YI \dense; dry to damp.	d CLAY (SC); little R5/3 brown; medium	LL5sb-052-5150-SO, LL5sb-052-6093-FD, & LL5sb-052-6096-QA collected from 1.0' - 4.0' 03/03/10 at 1300 for TAL Metals + Hg, Explosives, PAHs.	on - , and	B 3.1'/4.0'		
5-			(4.2' - 9.7') Fine grained SAND and Gravel, 1/4" - 1", subangular; 10YF dense; dry to damp.	d SILT (SM); little R5/3 brown; medium	LL5sb-052-5151-SO, LL5sb-052-6094-FD, & LL5sb-052-6097-QA collected from 4.0' - 7.0' 03/03/10 at 1310 for TAL Metals + Hg, Explosives, PAHs.	on - , and	A 3.0'/3.0' B 2.6'/3.0'		
8-	SM		(7.0' - 7.5') Wet.				3.9'/3.0'		
10-	CL		(9.7' - 11.7') CLAY (CL); trace 1/4" dark gray; medium stiff; dry; high p	Gravel; 10YR4/1 lasticity.	LL5sb-052-5152-SO collected from 7.0' - 13.0 03/03/10 at 1330 for TAL Metals + Hg, Explosives, PAHs.	' on - , and			
12	sw		(11.7' - 13.0') Medium to fine grain Gravel; 10YR4/3 brown; medium o nonplastic. Boring terminated at 13.0 ft bgs.	ed SAND (SW); little lense; damp;	-		3.7'/3.0'		Coordinate System: NAD 83
Boring 0.0' - for ex Samp Twin	g bac 1.0' s plosi ples v boreł	ckfille samp ves a vere o noles	d with sodium bentonite chips and hydra led using a 3" hand auger and triangular is presented in Section 4.5.2.1.1 of the F composited and homogenized for all ana were drilled to obtain volume required for	ted. subsample procedure acility-Wide SAP. lyses. or analyses.				LL	5sb-052

	DISTRICT		BOREHOLE NUMBER
	USACE - Louisville	e	LISSB-05
1. COMPANY NAME	2. DRILLING SUBCONTR	ACTOR	
SAIC	Frontz Drilling		SHEET 1 OF
S. PHOJECT RUAAP PBA 08 RT	4. LOCATION	RVAAP 8451 State Ro	ute 5 Ravenna, OH 44266
SIZES AND TYPES OF SAMPLING EQUIPMENT	6. MAKE/MOI	Geoprobe	= 6620 DT
151 × 11 Arman 1 11000	9. SUBEACE	ELECATION E-554387.5	823' N.2354603.224
no ka neonte cinera	10. DRILL DA	TECLIME STARTED AG	3
2 × 4 DUTE TUBE	15. DEPTH G	ROUNDWATER ENCOUNTERED	P 21
3"×1' HAND AUGER	16. DEPTH TO	O WATER/ELAPSED TIME AFTER BOP	
2. OVERBURDEN THICKNESS 13+ FT		\mathcal{N}	A
3. DEPTH DRILLED INTO BEDROCK NA	17. OTHER W	ATER LEVEL MEASUREMENTS (INLC	LUDE DATE/TIME)
A TOTAL DEPTH OF BOREHOLE 13FT			F
CHEMICAL SAMPLES UNDISTURBED: NA	DISTURBED: MA	19. TOTAL NUMBER OF C	ORE BOXES NA
CHEM DUITERAD:	NA OTHER:	21. TO	TAL CORE RECOVERY %
	TEMPORADYWE		03/03/10;1100
I. NOTES BKG: ≤ Background BGS: Below Ground Sur	ace CPM: Count	s per Minute DDM Dotto	WELL
∇ : First Water Encountered $\mathbf{\nabla}$:	Static Water Level	NA: Not Applicable	Jer Million
CCATION SKETCH/COMMENTS		SCALE:	None
			No second s
	100		····· · · · · · · · · · · · · · · · ·
	5///	manipular af an e star an e fe anales an ang an ang a	ener for a standard and a standard and a standard a standard a standard a standard a standard a standard a stan
	a da ante de la composición de la compo	na kan alan a ta ma baran baran baran da sa da ba	· · · · · · · · · · · · · · · · · · ·
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and the second second of the second			
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	N JIGNATUHE/DATE		BOREHOLE NUMBER
trandic to astralia	(NI -	7 1-1	11ECD ACT

US A of Er Louis	Army ngin sville /AAI Ra	P PE aven	A 2008 Remedial Investigation na Army Ammunition Plant 8451 State Route 5 Ravenna, Ohio 44266 Portage County	RVAA Load L LL5sb Start Date : 03, End Date : 03, Northing Coord. : 55- Easting Coord. : 238 Total Depth of Boring : 13.	NP-39 ine 5 -053 103/10; 1000 103/10; 1100 1387.5823 54603.2242 0'	Drill Drill Des Typ Geo Ove Bor San	ing Compar ler signation of I e of Drill Riç ologist ersight Comp ehole Diame npling Equip	ny Drill 9 pany eter pment	: Frontz Drilling : Jeremy Leckrone : Geoprobe 6620DT : Direct Push Technology : Amanda Trenton : SAIC : 2" : 1.5" x 4' Long Acetate Liner : 2" x 4' Dual Tube : 3" Hand Auger
Depth in feet	USCS Symbol	USCS Graphic	Description	on	Analyses		Recovery	Collection Interval	Comments
	sc		(0.0' - 3.7') Clayey SAND (SC); tra subangular; 10YR4/3 brown; soft;	ce Gravel, 1/4" - 1/2", wet.	LL5sb-053-5153-SO collected from 0.0' - 1.0' 0 03/03/10 at 1025 for VOC SVOCs, PCBs, Pesticide Explosives, Propellants, TAL Metals + Hg. LL5sb-053-5154-SO collected from 1.0' - 4.0' 0 03/03/10 at 1036 for VOC SVOCs, PCBs, Pesticide Explosives, Propellants,	on Cs, es, and on Cs, es, and	1.0'/1.0' A 1.6'/3.0' B 1.5'/4.0'		Soil Color Chart Munsell 2000 Rev. Ed.
4	CL		(3.7' - 5.4') CLAY (CL); little Silt; lit subrounded; 10YR4/3 brown, 2.5Y 10YR8/2 very pale brown; stiff; dry (5.4' - 13.0') Fine SAND and SILT 1/4", subangular; 10YR5/3 brown; damp; moist in fine lenses.	tle Gravel, 1/4" - 1/2", '5/1 gray, and little ; medium plasticity. (SM); trace Gravel, medium dense;	LL5sb-053-5155-SO collected from 4.0' - 7.0' o 03/03/10 at 1040 for VOO SVOCs, PCBs, Pesticide Explosives, Propellants, TAL Metals + Hg.	on Cs, es, and	3.3'/3.0'		
7 8 9 10 11 11 12	SM		(8.2' - 9.0') Wet.		LL5sb-053-5156-SO collected from 7.0' - 13.0 03/03/10 at 1100 for VOC SVOCs, PCBs, Pesticide Explosives, Propellants, TAL Metals + Hg.	' on Cs, ss, and	3.3'/3.0' 3.7'/3.0'		
13-			Boring terminated at 13.0 ft bgs.		-				Coordinate System: NAD 83
Boring 0.0' - for ex Samp Twin I	g bac 1.0' s plosi [,] les w boreł	kfille samp ves a vere o noles	d with sodium bentonite chips and hydra led using a 3" hand auger and triangular is presented in Section 4.5.2.1.1 of the F composited and homogenized for all ana were drilled to obtain volume required for	ted. subsample procedure facility-Wide SAP. lyses, except VOCs. or analyses.				LL	5sb-053

HTRW	DRILLING	LOG			DISTRICT	- Louisvi	lle	en ette	ag ou	BOREHOLE	NUMBER SB-Ø5
1.00				34.5	2. DRILLIN		RACTOR			SHEET	1 OF 2
SAI		0.000		-					1.47		6
J. PH	LEB	PPBH	OXR	Ŧ		6. MAKE/M		VAAP 845	State Rou	te 5 Havenn	a, UH 44266
7. SIZES AND TYP	PES OF SAMPLING E	OUIPMENT	KRON	JĘ		a BOREHO		ION E at	Geoprope	(01020	DT GUDI Fr
	ISIVU	1 400				9. SURFAC			1570.00	7 Nº 43	0.201 40
	113 27	ACe I	HIE C	NER	-	10. DRILL	DATE/JIME	STARTED	: UUA		12,50
	2" x 4	Dun	NBE			10 15. DEPTH	GROUNDY	VATER ENCO	UNTERED	UA	1200
	3" x#	1 HANN	0 Ava	m		16. DEPTH	TO WATER	VELAPSED T	IME AFTER BOR	EHOLE COMPLET	NON
2. OVERBURDEN	THICKNESS	13+7	7			1			NK	21	
3. DEPTH DRILLE	ED INTO BEDROCK	NA				17. OTHER	WATER LE	EVEL MEASUI	REMENTS (INLC)	UDE DATE/TIME	
4. TOTAL DEPTH	OF BOREHOLE	BT							pr	1	
ITRW DRILLING LOG USACE - Louisville LISSO - 0554 I. COMPARY INANE SALC INSTRUCT USACE - Louisville I. COMPARY INANE SALC INSTRUCT SHEET I OF 2 I. ROUGET RUMANY POR ADS RET I. LOCKION RVAAP 8451 State Route 5 Revense, OH 44260 INANGROUND FOR OFFILL OF ROUTE OF PLAN BASIS State Route 5 Revense, OH 44260 I. Marco PORLING I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCONTER I. ST X 41 ALCON											
0. CHEMICAL SAI	MPLES	CHEMDIPL	Inco/prot	RAD;	NA	OTHER:			21. TOT	AL CORE RECOV	ERY %UA
2. DISPOSITION (OF BOREHOLE	DATE STAR	TED/INSTALL	ED: 03	108/10.	1140	DA	TE COMPLET	ED/ABANDONEE	03/08/10	0;1250
ACKFILL TYPE:	GROUT	r 🔽	BENTONITE		T TEN	IPORARY WE	LL POINT		MONITORING	WELL	
HTRW DRILLING LOG District District 1: COMEAN YAME District USACE - Louisville LCSSB - dS54 3: ANC BT Inclust Rught SHEET 1 of 2 1: ARRUER RUGATOR RUGATO											
HTRW DRILLING LOG											
OCATION S	SKETCH/COM	MENTS							SCALE:	None	
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					50						
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HTRW DRILLING LOG District BOBENCE NUMBER 1: COMPANY NAME SALC LGSCAP LGSCAP 3: ROLET ROLET FORIZ DRIVENSING SHET 1 OF 3: ROLET ROLET FORIZ DRIVENSING SHET 1 OF 1: STACE TOWARD PLACE OF BALL GOODET ROLED DT BOBENCE LOCATION RUAD PASS State DOLD DT 1: STACE LGSCAP LGSCAP LGSCAP RUAD PASS STATE LGSCAP 1: STACE LGSCAP LGSCAP RUAD PASS STATE LGSCAP 2: STATES LGSCAP LGSCAP RUAD PASS STATE LGSCAP 2: STATES LGSCAP RUAD PASS STATE LGSCAP RUAD PASS STATE 1: DEPTH OF BOBERCE LGSCAP RUAD PASS STATE LGSCAP RUAD PASS STATE 1: DEPTH OF BOBERCE NA RUAD PASS STATE RUAD PASS STATE RUAD PASS STATE 1: DEPTH OF BOBERCE NA RUAD PASS STATE RUAD PASS STATE RUAD PASS RUAD PASS RUAD PASS STATE RUAD PASS R											
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EOLOGIST SIGN	ATURE/DATE	a tan 1	4050 03/08/	100000		RE/DATE		17.3/10		BOREHOLE	NUMBER SB-ØS

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US A of El Louis	Army ngin sville VAA	P PE aven	A 2008 Remedial Investigation na Army Ammunition Plant 8451 State Route 5 Ravenna, Ohio 44266 Portage County	RVAA Load Li LL5sb Start Date : 03/ End Date : 03/ Northing Coord. : 554 Easting Coord. : 236 Total Depth of Boring : 13.	P-39 ine 5 -054 08/10; 1140 08/10; 1250 4378.00 54765.00 0'	Drilli Drille Desi Type Geo Ove Bore Sam	ng Compa er gnation of of Drill R logist rsight Con chole Dian pling Equ	any f Drill ig npany neter ipment	: Frontz Drilling : Jeremy Leckrone : Geoprobe 6620DT : Direct Push Technology : Amanda Trenton : SAIC : 2" : 1.5" x 4' Long Acetate Liner : 2" x 4' Dual Tube : 3" Hand Auger
Depth in feet	USCS Symbol	USCS Graphic	Descriptio	on	Analyses		Recovery	Collection Interval	Comments
	CL		 (0.0' - 0.25') SILT (ML); little Clay; soft; moist (from surface snow mel significant grassy organics and roc Clay content increases with depth. (0.25' - 7.9') CLAY (CL); some Silt; 7.5YR5/8 strong brown and trace 7 stiff; damp until 1.5' then dry; medi until 0.75'. (2.5' - 5.2') Clay is mainly 10YR4/6 with some gray 10YR5/1 and black (3.5' - 5.2') Trace Gravel, 1/2" - 3/4 (5.2' -7.9') Clay is 10YR5/4 yellowis 2.5Y8/1 white; stiff; trace Gravel, 7.6' Sandstone fragments. (7.9' - 11.0') SILT (ML): some fine 	10YR3/3 dark brown; very t); low plasticity; ots throughout. (10YR5/1 gray mottled 10YR4/3 brown; medium um plasticity; some roots strong yellowish brown c mottling; dry; crumblier. ", subangular.	LL5sb-054-5157-SO collected from 0.0' - 1.0' 03/08/10 at 1145 for TAL Metals + Hg, Explosives, PAHs. LL5sb-054-5158-SO collected from 1.0' - 4.0' 03/08/10 at 1215 for TAL Metals + Hg, Explosives, PAHs. LL5sb-054-5159-SO collected from 4.0' - 7.0' 03/08/10 at 1233 for TAL Metals + Hg, Explosives, PAHs.	on and and and	1.0'/1.0' 2.35'/3.0' 3.1'/3.0'		Soil Color Chart Munsell 2000 Rev. Ed.
9- 10- 11- 12- 13-	GP		 (11.0' - 12.8') GRAVEL and mediu SAND (GP); some quartzose Gravel 2.5YR3/4 dark reddish brown; loos nonplastic. (12.8' - 13.0') Medium grained SANG (Gravel; 10YR4/3 brown; loose; dat Boring terminated at 13.0 ft bgs. 	m to coarse grained vel from 11.75' - 12.8'; se; dry; crumbly; ND (SW); little subrounded mp; nonplastic.	LL5sb-054-5160-SO collected from 7.0' - 13.0 03/08/10 at 1250 for TAL Metals + Hg, Explosives, PAHs.	' on and	3.0'/3.0' 2.8'/3.0'		Coordinate System: NAD 83
0.0' - proce	y bac 1.0' s edure	for e	led using a 2" hand auger and triangular xplosives as presented in 4.5.2.1.1 of the	ueu. subsample ∋ Facility-Wide SAP.				LL	-5sb-054

HTRW DRILLING LOG		USAC	E - Louisvill	e	anna)	an L		BORI	-52	MBER	055
1. COMPANY NAME		2. DRILLI	NG SUBCONTR	ACTOR			_				
SAIC		Frontz	Drilling					SH	EET	1 OF	2
3. PROJECT RUAMP PBA	08 R.F		4. LOCATIO	N RVAA	P 845	1 State	Route	∋5 Ra	venna,	OH 44	266
NAME OF DRILLER JOREMY LEL	KRONE	1. m (Tr.	6. MAKE/MO	DEL OF DRILL		Geop	robe	612	02	T	
SIZES AND TYPES OF SAMPLING EQUIPMENT	WOLL 1		8. BOREHOL		E-55	4225	5.05	31′ 1	V-23	5452	29.75
1.5" × 4' ALETATE	LINER		9. SURFACE	ELEVATION/D	ATUM	MAD	83) //			
2" × 4' ACT DUA	LTUBE		15. DEPTH 0	GROUNDWATER	ARTED:	UNTERED	M	<u>1</u> 19 19		.093	55
2 OVERBURDEN THICKNESS 12	Jek		16. DEPTH 1	O WATER/ELA	PSED TI	ME AFTER	A DORE	HOLE CO	MPLETIO	N	
3. DEPTH DRILLED INTO BEDROCK NA			17. OTHER V	NATER LEVEL /	MÉAŠUR	EMENTS	(INLCL		E/TIME)		
4. TOTAL DEPTH OF BOREHOLE							NA				
8. GEOTECHNICAL SAMPLES	ED: A //2-	OISTUBBI	D' 4 m	19	TOTAL	NUMBER	OF COI	TE BOXE	S N	A	
O. CHEMICAL SAMPLES CHEMEVA	AAST CONLEAD:	NA	OTHER:	1 100 1	NOT.	21	. TOTA	LCORE	RECOVER	Y % A	A
2. DISPOSITION OF BOREHOLE DATE STAR	TED/INSTALLED (03)	03/10:0	0845	DATE CO	MPLETE	D/ABAND	ONED	(1)3/m	310	095	5
	BENTONITE	TEN	IPORARY WEL	L POINT	Г	MONITO	RING V	VELL	1101	9	
3. NOTES BKG: < Background BGS:	Below Ground Surfa	ce	CPM: Cour	nts per Minute		PPM: P	arts pe	r Million	-		
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US A of El Louis	Army ngin sville VAA	P PE aven	A 2008 Remedial Investigation na Army Ammunition Plant 8451 State Route 5 Ravenna, Ohio 44266 Portage County	RVAA Load L LL5sb Start Date : 03/ End Date : 03/ Northing Coord. : 554 Easting Coord. : 238 Total Depth of Boring : 13.	P-39 ine 5 -055 03/10; 0845 03/10; 0955 4225.0531 54529.7550 0'	Drilli Drille Desi Geo Ove Bore Sam	ing Compa er ignation of e of Drill R logist rsight Con shole Dian spling Equ	any f Drill ig npany neter ipment	: Frontz Drilling : Jeremy Leckrone : Geoprobe 6620DT : Direct Push Technology : Amanda Trenton : SAIC : 2" : 1.5" x 4' Long Acetate Liner : 2" x 4' Dual Tube : 3" Hand Auger
Depth in feet	USCS Symbol	USCS Graphic	Descriptio	on	Analyses		Recovery	Collection Interval	Comments
0	CL		(0.0' - 0.5') SILT (ML); little medium Gravel; 10YR3/1 very dark gray ar very soft; moist; organics througho Increasing clay content with depth. (0.5' - 2.0') CLAY (CL); little Silt; lit 5YR5/3 reddish brown until 1.0' the brown, 2.5Y5/1 gray, and trace 10' stiff; dry; medium plasticity. (2.0' - 9.1') CLAY (CL); little Silt; lit subrounded; 10YR4/3 brown, 2.5Y 10YR8/2 very pale brown; stiff; dry	n grained Sand; trace 1/2" d 5YR5/3 reddish brown; nut. tle medium grained Sand; en 7.5YR4/6 strong YR4/3 brown; medium // tle Gravel, 1/4" - 1/2", /5/1 gray, and little r; medium plasticity.	LL5sb-055-5161-SO collected from 0.0' - 1.0' o 03/03/10 at 0907 for TAL Metals + Hg, Explosives, PAHs. LL5sb-055-5162-SO and MS/MSD collected from 7 4.0' on 03/03/10 at 0930 TAL Metals + Hg, Explos and PAHs.	on and 1.0' - for sives,	1.0'/1.0' 3.0'/3.0'		Soil Color Chart Munsell 2000 Rev. Ed.
	CL		(4.5' - 9.1') Color is 10YR4/3 brown	n.	LL5sb-055-5163-SO collected from 4.0' - 7.0' o 03/03/10 at 0941 for TAL Metals + Hg, Explosives, PAHs.	on - . and	3.6'/3.0'		
8- 9- 10- 11-	SM		(8.1' - 8.2') Subangular Gravel. (9.1' - 13.0') SILT and very fine gra Gravel, 1/4" - 1/2", subrounded; 10 dense; dry.	nined SAND (SM); trace YR4/3 brown; medium	LL5sb-055-5164-SO collected from 7.0' - 13.0 03/03/10 at 0955 for TAL Metals + Hg, Explosives, PAHs.	' on , and	3.4'/3.0'		
12- 12- 13-			(11.8' - 13.0') Dense. Boring terminated at 13.0 ft bgs.				3.1'/3.0'		Coordinate System: NAD 83
Boring 0.0' - for ex Samp	g bac 1.0' s plosi bles v	ckfille samp ves a vere o	d with sodium bentonite chips and hydra led using a 3" hand auger and triangular is presented in Section 4.5.2.1.1 of the F composited and homogenized for all ana	ted. subsample procedure acility-Wide SAP. lyses.				LL	.5sb-055

HTRW DRILLING LOG USACE - Louisville USSB-0.50 SAID SPRUKE BURCHTRUNK SPRUKE BURCHTRUCK SAID FINDED BURCHTRUCK SPRUKE BURCHTRUCK SAID SPRUKE BURCHTRUCK SPRUKE BURCHTRUCK SCRUKE BURCHTRUCK SPRUKE BURCHTRUCK SPRUKE BURCHTRUCK SCRUKE SPRUKE BURCHTRUCK SPRUKE BURCHTRUCK SPRUKE BURCHTRUCK	HTRW DRILLING LOG USACE - Louisville [1553-0] I. COMPANY NAME EXPOLUCE CLOUCY INACTOR SHET 1 OF 2 SAC From DRING SHET 1 OF 2 I. SACE SHET 1 OF 2 SHET 1 OF 2 I. SACE SHET 1 OF 2 SHET 1 OF 2 I. SACE SHET 1 OF 2 SHET 1 OF 2 I. SACE SHET 1 OF 2 SHET 1 OF 2 I. SACE SHET 1 OF 2 SHET 1 I. SACE SHET 1 OF 2 SACE SACE SHET 1 OF 2 SACE I. SACE SHET 1 SACE I. SACE SHET 1 SACE J. SACE SACE SACE I. SACE SACE SACE SACE SACE SACE SACE SACE SACE SACE SACE SACE SACE		DISTRICT				BOREHOLE NU	JMBER
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EOLOGIST SIGNATURE/DATE COLOGIST SIGNATURE/DATE CANOC DIGNATURE/DATE CANOC DIGNATURE/	EOLOGIST SIGNATURE/DATE CONCORIGNATURE/DATE CONCO		ILSMU			your	- 4. · · · · · · · · · · · · · · · · · ·	
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COLOGIST SIGNATURE/DATE BOREHOLE NUMBER BOREHOLE NUMBER LISSB-Ø520	OLOGIST SIGNATURE/DATE Comande Intro3/03/110 QAVOC BIGNATURE/DATE Comande Intro3/03/110 De Vin/ 3/13/10 LL5SB-Ø5				ne			
COLOGIST SIGNATURE/DATE BOREHOLE NUMBER Common http://www.astron.com/2011/10/2010/2010/2010/2010/2010/2010/	Cologist signature/date BOREHOLE NUMBER Common Intro3/03/111 St. Vin/ 3/13/10 LLSSB-\$5			والمتحديد متشارعهم	ng na han a sa s i		···· · · · · · · · · · · · · · · · · ·	
Cologist signature/date borehole number and hot 03/03/10 avoc gignature/date 3/13/10 borehole number LLSSB-0520	Cologist signature/date borehole number Constante 03/03/111 De Vin/ 3/13/10 LLSSB-05		and the second s	· ···· · · · · · · · · · · · · · · · ·	inguna di Santa da Santa Santa Santa		ere e de la sy sur	
amande het 03/03/10 DE Vir 3/13/10 LISSB-\$56	amande hertmos/03/10 DE Vir/ 3/13/10 LL55B-\$5	EOLOGIST SIGNATURE/DATE		DATE _		14 MA	BOREHOLE NUM	IBER
$\frac{1}{2} \frac{1}{2} \frac{1}$	Lesso-p	Amandis In the molosly	Az-C	Win/	1 2/121	16	11500	-157.
		101111 / 103/03/1A /.	100	vvv	/	10	LUSSE	$y = \psi \cup \phi$

US A of Er Louis	Army ngin sville VAA	P PE aven	A 2008 Remedial Investigation na Army Ammunition Plant 8451 State Route 5 Ravenna, Ohio 44266 Portage County	RVAA Load Li LL5sb Start Date : 03/ End Date : 03/ Northing Coord. : 554 Easting Coord. : 238 Total Depth of Boring : 13.	P-39 ine 5 -056 03/10; 1430 03/10; 1555 4025.00 54740.00 0'	Drilli Drill Des Type Geo Ove Bore Sam	ing Compa er e of Drill R logist rsight Con ehole Dian apling Equ	any f Drill lig npany neter ipment	: Frontz Drilling : Jeremy Leckrone : Geoprobe 6620DT : Direct Push Technology : Amanda Trenton : SAIC : 2" : 1.5" x 4' Long Acetate Liner : 2" x 4' Dual Tube : 3" Hand Auger
Depth in feet	USCS Symbol	USCS Graphic	Descriptio	on	Analyses		Recovery	Collection Interval	Comments
0	<u>ML</u>		(0.0' - 0.3') SILT (ML); some Clay; very soft; moist; organics througho (0.3' - 5.4') CLAY (CL); little Silt; 7. 2.5YR5/1 gray, and trace 10YR4/3 medium plasticity. (2.0' -5.4') Color is 10YR5/4 yellow 10YR8/2 very pale brown and 2.5Y	10YR3/1 very dark gray; but. / 5YR4/6 strong brown, brown; medium stiff; dry; vish brown with little (5/1 gray.	LL5sb-056-5165-SO collected from 0.0' - 1.0' 0 03/03/10 at 1440 for TAL Metals + Hg, Explosives, PAHs. LL5sb-056-5166-SO collected from 1.0' - 4.0' 03/03/10 at 1500 for TAL	on - , and on	1.0'/1.0' 2.5'/3.0'		Soil Color Chart Munsell 2000 Rev. Ed.
3	CL				LL5sb-056-5167-SO and MS/MSD collected from 7.0' on 03/03/10 at 1505	, and (4.0' - for	3 2'/3 0'		
6- 7- 8-			(5.4') Medium grained Sand lens. (5.4' - 11.9') Very fine grained SAN Clay; trace 1/4" Gravel; 10YR4/3 b moist from 5.4' - 5.8' then dry.	ID and SILT (SM); little prown; medium dense;	TAL Metals + Hg, Explos and PAHs.	sives,	0.270.0		
9- 9- 10- 11-	SM		(8.5' - 8.6') Medium grained Sand (8.6' - 11.9') Increased gravel cont	seam; moist. ent.	LL5sb-056-5168-SO collected from 7.0' - 13.0 03/03/10 at 1513 for TAL Metals + Hg, Explosives, PAHs.	' on - , and	3.0'/3.0'		
12-	sw		(11.9' - 13.0') Medium to fine grain Gravel; 10YR4/3 brown; medium c Boring terminated at 13.0 ft bos.	ed SAND (SW); little lense; moist; nonplastic.			2.6'/3.0'		Coordinate System: NAD 83
Boring 0.0' - for ex Samp	g bac 1.0' s plosi bles v	kfille samp ves a vere o	d with sodium bentonite chips and hydra led using a 3" hand auger and triangular is presented in Section 4.5.2.1.1 of the F composited and homogenized for all ana	ted. subsample procedure 'acility-Wide SAP. lyses.	1			LL	.5sb-056

	DISTRICT			BOREHOLE NU	IMBER
HTRW DRILLING LOG	USACE	- Louisville		LISSD-	057
1. COMPANY NAME	2. DRILLING	SUBCONTRACTOR			
SAIC	Frontz D	rilling		SHEET	1 OF a
3. PROJECT PULARP - PRANS, PT-		4. LOCATION RVAAF	8451 State Route	5 Ravenna.	OH 44266
NAME OF DRILLER EWILL (UNINING HAM PICH S	PRINTEL	6. MAKE/MODEL OF DRILL	Geoprobe	5 AUGEN	bucket
SIZES AND TYPES OF SAMPLING EQUIPMENT		8. BOREHOLE LOCATION	Load Line 5	11155	6 1057 E
34,2" puller Buckets		9. SURFACE ELEVATION/DA	TUM NAD 83		N 2354
3/5/10/10/00/ger pours		10. DRILL DATE/TIME ST/	ARTED: 1515	COMPLETED:	1450
•		15. DEPTH GROUNDWATER	ENCOUNTERED 3.9	' 66S	
		16. DEPTH TO WATER/ELAP	SED TIME AFTER BOREH	OLE COMPLETION	1
2. OVERBURDEN THICKNESS					
3. DEPTH DRILLED INTO BEDROCK NA		17. OTHER WATER LEVEL M	EASUREMENTS (INLCLUE	DE DATE/TIME)	
A. TOTAL DEPTH OF BOREHOLE 3.9 BGS					
D CHEMICAL SAMPLES UNDISTURBED:	DISTURBED	<u> </u>	TOTAL NUMBER OF COR	EBOXES N	4
		OTHER:	21. IOTAL	CORE RECOVER	Y %
	3	DATE CO	MPLETED/ABANDONED:	5/8/10	
3. NOTES BKG: < Background BCC: Bolow Convert) (EMP	CPM: Counts and Minute	J MONITORING W	Addition	
: First Water Encountered	Static Water Le		rrm: rans per	MIIION	
OCATION SKETCH/COMMENTS			SCALE:	None	
			T I I I	1 1 1	E E T
Dimensional and a second	- han a bara han an				N
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and an international state of the second state	and the second second	VOP			1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m
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LOAD	LINE	1017			
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LOAD	RVH	OTUT	2		
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	LINE AVIA				
	LINE AVI South L	DILL T LISSB-057			
	LINE RYT John Control John Cont	E OTUT F OTUT			
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DITCH DITCH MARA DITCH MARA MARA DITCH MARA	CINE DY AU AU AU AU AU AU AU AU AU AU AU AU AU	DATE Will 3	1.15/11b		

Image: Non-Structure Image: No	RVAA Load L LL5sb Start Date : 03, End Date : 03, Northing Coord. : 555 Easting Coord. : 236 Total Depth of Boring : 3.8	.P-39 ine 5 -057 ^{08/10; 1515} ^{08/10; 1650} ^{3803.18} ^{54855.33}	Drilling Comp Driller Designation o Type of Drill F Geologist Oversight Coi Borehole Diar Sampling Equ	any of Drill Rig mpany meter Jipment	: SAIC : Emily Cunningham : NA : NA : Emily Cunningham : SAIC : 3" : 3" Hand Auger
Depth in feet USCS Symbol USCS Graphic Descrit	tion	Analyses	Recovery	Collection Interval	Comments
0 - MH - MH 1 CL CL Boring terminated at 3.8 ft bgs.	me Gravel; little Sand; wn mottling; moist; medium e Gravel; 10YR5/1 gray ottling; medium stiff; moist ics (roots).	LL5sb-057-5169-SO collected from 0.0' - 1.0' c 03/08/10 at 1525 for TAL Metals + Hg, Explosives, PAHs. LL5sb-057-5170-SO collected from 1.0' - 3.8' c 03/08/10 at 1625 for TAL Metals + Hg, Explosives, PAHs.	on 1.0'/1.0' and 2.8'/2.8' and		Soil Color Chart Munsell 1994 Rev. Ed.
4 Boring backfilled with sodium bentonite chips and hydrogen and triangur for explosives as presented in Section 4.5.2.1.1 of the Samples were composited and homogenized for all a	Irated. lar subsample procedure Facility-Wide SAP. nalyses.		<u> </u>		-5sb-057

	DISTRICT		BOREHOLE NUMBER	
HTRW DRILLING LOG	USACE	- Louisville	LLS3B-0	58
1. COMPANY NAME	2. DRILLING	SUBCONTRACTOR		
SAIC	Frontz D	Drilling	SHEET 1 OF	= 2
3 PROJECT RVAAP PBACK - 1	25	4. LOCATION RVAAP 8451 S	State Route 5 Ravenna, OH 4	4266
NAME OF DRILLER RYAN LAURILY		6. MAKE/MODEL OF DRILL	Seoprobe HAUD AUGER	
SIZES AND TYPESIOF SAMPLING EQUIPMENT		8. BOREHOLE LOCATION LLS	55 -058 NAP83	-
3 14 HAND AVER		9 SURFACE ELEVATION/DATUM 23	55246,40'E 5541	16.74
51 LI LAVENELONS		10. DRILL DATE TIME STARTED:	1515 COMPLETED: 1615	-
		15. DEPTH GROUNDWATER ENCOUNT	ERED 3'16"	
		16. DEPTH TO WATER/ELAPSED TIME	AFTER BOREHOLE COMPLETION	
OVERBURDEN THICKNESS		Alu		
DEPTH DRILLED INTO BEDROCK NA		17. OTHER WATER LEVEL MEASUREM	ENTS (INLCLUDE DATE/TIME)	
TOTAL DEPTH OF BOREHOLE TIME 3.6	_	NA		
GEOTECHNICAL SAMPLES	. DISTURBED	19, TOTAL NU	MBER OF CORE BOXES NA	
CHEMICAL SAMPLES CHEM:astil /	RAD: NA	OTHER:	21. TOTAL CORE RECOVERY %	_
DISPOSITION OF BOREHOLE DATE STARTED	INSTALLED SISI (0		ABANDONED 3/8/10	
NOTES BKG < Background BCS Back	W Ground Surface	CPM: Counte por Misuto	DM: Date per Million	
		CHM: Counts per Minute P	Five Parts per Million	
First water Encountered	Static Water Le	NA: Not Applicable		
DCATION SKETCH/COMMENTS		s	CALE: None	
				1.7
	10	OCATION MOVED TO		N
The second s	the same and done that an all some and a short short of the		the second se	
		54176.74AN	FLEINATION	
	5.	54176.74AN	ELEVATION LA CLA LITE	
	23	54176.74AN 55246.804E	ELEVATION 1002.43ft	
		54176.74AN 55246.800E	ELEVATION 1002.43fr	
	23 1155	54176.74AN 55246.8\$#E 5B-\$58	ELEVATION 1\$\$2.43fr	
	23 1155 11	54176.74AN 55246.8Ø4E 5B-Ø58	ELEVATION 1002.43ft	
	23 23 1155 B	54176.74AN 55246.8Ø4E SB-Ø58	ELEVATION 1\$\$2.43fr	
	5. 23 1155 3	54176.74AN 55246.8\$#E SB-\$58	ELEVATION 1\$\$2.43fr	
	23 1155 1155	54176.74AN 55246.80AE 0B-Ø58 DITCH	ELEVATION 1\$\$2.43ft	
	23 27 11 5 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	54176.74AN 55246.8ØAE 5B-Ø58 DITCH	ELEVATION 1\$\$2.43fr	
		54176.74AN 55246.8\$#E 5B-\$58 DITCH	ELEVATION 1662.43ft	
		54176.74AN 55246.80AE SB-Ø58 DITCH	ELEVATION 1682.43ft	
		54176.74AN 55246.80AE 0B-Ø58 DITCH	ELEVATON 1002.43ft	
		54176.74AN 55246.800E SB-Ø58 DITCH	ELEVATION 1662.43ft	
		54176.74AN 55246.804E SB-Ø58 DITCH	ELEVATON 1662.43ft	
		54176.74AN 55246.804E B-Ø58 DITCH	ELEVATOR 1662.43ft	
		54176.74AN 55246.80AE B-ØS8 DITCH	ELEVATOR 10082.43.43.44	
		54176.74AN 55246.800E B-ØS8 DITCH		
		54176.74AN 555246.80AE B=058		
		54176.74AN 55246.80AE B=058 Dircy		
		54176.74AN 55246.80AE B-058 Dircu		
		54176.74AN 55246.80AE B-ØSS DITCH		
		54176.74AN 55246.800AE BB-058 DIRCO		
		54176.74AN 555246.80AE B=058		
		54176.74AN 55246.80AE B-058 Dircu	ELEVATON 1662.43ft	

US A of Ei Louis	Army ngin sville /AA Ra	P PE aven	A 2008 Remedial Investigation na Army Ammunition Plant 8451 State Route 5 Ravenna, Ohio 44266 Portage County	RVAA Load Li LL5sb Start Date : 03/ End Date : 03/ Northing Coord. : 554 Easting Coord. : 235 Total Depth of Boring : 4.0	P-39 ine 5 -058 08/10; 1515 08/10; 1615 176.74 55246.80	Drilli Drille Desi Type Geo Ove Bore Sam	ing Compa er ignation of e of Drill R logist rsight Con shole Dian apling Equ	any f Drill ig npany neter ipment	: SAIC : Ryan Laurich : NA : NA : Ryan Laurich : SAIC : 3" : 3" Hand Auger
Depth in feet	USCS Symbol	USCS Graphic	Descriptio	on	Analyses		Recovery	Collection Interval	Comments
	CL		(0.0' - 1.0') Silty CLAY (CL); some 10YR3/2 very dark grayish brown; low plasticity; some organics. (1.0' - 3.9') Silty CLAY (CL); some 10YR5/6 yellowish brown; soft to f plasticity; trace organics. (3.9' - 4.0') Wet. Boring terminated at 4.0 ft bgs. Ha	fine grained Sand; very soft; moist to wet; fine grained Sand; irm; damp to moist; low	LL5sb-058-5173-SO collected from 0.0' - 1.0' 03/08/10 at 1515 for TAL Metals + Hg; Explosives PAHs. LL5sb-058-5174-SO collected from 0.0' - 1.0' 03/08/10 at 1615 for TAL Metals + Hg; Explosives PAHs.	on and and	3.0'/3.0'		Soil Color Chart Munsell 1994 Rev. Ed.
Boring 0.0' - for ex Samp	g bao 1.0' s plosi ples v	ckfille samp ives a were o	d with sodium bentonite chips and hydra led using a 3" hand auger and triangular as presented in Section 4.5.2.1.1 of the F composited and homogenized for all ana	ted. subsample procedure acility-Wide SAP. lyses.	1		1	LL	.5sb-058

SURFACE WATER AND SEDIMENT SAMPLES

G AI I	RVAAP - Surface W	Vater & W	/et Sediment Fi	eld Form	SHEET 1 OF 1
From Science to Solutions	USACE - Louisville	RVAAP Ravenn	8451 State Rt. 5	Sample Team: BICH	SPRINZL, SAKA
Location ID:	-078/1155d	-078	3. Rowson Coordinates R X - 235420	$\frac{1}{100} = \frac{1}{100} = \frac{1}$	EU 270 118
I. Surface Water Sample ID:	6791050	<u> </u>	5. Date and Time:		01211148
Dupe ID (if needed):			7. Split ID (if needed)	N 1995	
. Surface Water Sample Type an	id Equipment Used: A 10 Ann			M	
0. Wet Sediment Sample ID:	OKNU		11. Date and Time:		9. MS/MSD:
LL550-078 2. Dupe ID (if needed):	-5797-SD		13. Split ID (if needed)	JA	44
NA				NA	
4. Wet Sediment Sample Type a	nd Equipment Used: RUSHP	RODE			15. MS/MSD
6. Weather Conditions: 55	F partly clo	Judy	17. Activities in the Area:	NA	
OCATION SKETCH/COM	AMENTS Section with So	incly BII	1704 50ft We 101R3/2	SCALE:	None
	<u>_</u>	yelloot	bent	· · · · · · · · · · · · · · · · · · ·	
ield Notes:					N.
			na an an taon an tao an tao an tao an tao an tao an tao an taon an taon an taon an tao		· · · · · · · · · · · · · · · · · · ·
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	1550-013	- 000	for viz	te a la construction de la const	1000
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FIELD MEASURE	MENTS READING	UNITS	SERIAL NO.	LAST	CALIB.
TEMPERAT	TURE: 11,46	°C	16558	04/13/10	
· · · · · · · · · · · · · · · · · · ·	pH: 0,83	S.U	15558		
CONDUCT	IVITY: 0.009	mS/cm	16558		
	DO: 3,17	mg/L	15958		
TURBI	DITY: 2.47	NTU	15559		
OTHER OK	P: 18.4	mU	16668	N N	
SURFACE WATER		als 🗌 svo	DCs OTHER	V	
K FL	JLL SUITE (VOCs, SVOCs, N	retals, Explos	sives, Propellants, Pes	sticides, PCBs)	
WET SEDIMENT ANALYSES:		ALS 🗌 SVO		<u>7H5</u>	
	I SUITE (VOUS, SVOUS, N	ietais, Explos	sives, Propellants, Pes	ticides, PCBs)	
Recorded By:	da hosta	OC Chasks	CATA A	AAA avili	alon a
(3)	gnature and Date)/nu/12/1/		d by: K (Sic	nature and Date)	9/2010
(3)	gnature and Date) 04/3/		d by: X (Sig	inature and Date)	9/2010

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RVAA PBA08 RI - Surface Water	USACE - Louisville RVAAP 8451 State 2. PROJECT: RVAAP PBA 2008 RI Ravenna, OH 4426	Rt. 5
1. COMPANY NAME: SAIC	3. Sample Team Quantum transformed	
	KUAN LAURICUT SHEET 1 OF	2
4. LOCATION ID: FILC - 1-1 102	5. Cordinates Recorded:	
5. Surface Water Equipment Used:		
6. Sample ID and Time	7. Dupe ID (if needed)	
FWSSW-102-5010-5W; 0945	5 NO	
8. MS/MSD ID (if needed)	9. Split ID (if needed) N ℃	
10. Wet Sediment Equipment Used: WAND PVSH PPOBE	SAMPLE TYPE: COMPOSITE EXCEPT VOCS.	
11. Sample ID FWSSD - 192 - 5011 - SD - 0945	12. Dupe ID (if needed)	
13. MS/MSD ID (if needed)	14. Split ID (if needed) いり	
Weather Conditions: OVERCAST, SNOWY 116HT1	NIND 27°F Activities in the Area NONE	
LOCATION SKETCH/COMMENTS	SCALE: None	
$\frac{(\mu^2 + 17 - 20)(\mu)}{(\mu^2 + 17 - 20)(\mu)}$		1
		. 4 .
Field Notes: VERY WOODED AREA. LOCA	MION IS A GOOD WAY	. N .
IN OFF THE READ. SUEFACE WATE	e COLECTED BY Hand.	
CLEARED away ~ 2' OF SNOW a	NOL Broke ICE WITH	
HAMMER USED A NAME PUSH PRO	JE TO COLLECT SEDIMENT.	
THE WET SEDIMENT WAS MOSTLY CUP	ry (cc), some sand and	
trace amounts of silt. Yellowish	BROWN INVESTIG WITH DARK	
BRAY 10 YR 4/1 mottling. Soft to medium	n stiff, moist to wet	
Iow plasticity and trace organics	(decomposing leaves).	
J, O		
	BANIC	
etron M	a na sa	·····
SHEWI	sample	
	Diocation	
	PECARS 1.	
	and a second	
	f	
BANK		
WOODS		
SURFACE WATER		
ANALYSES: EXPLOSIVES TAL METAL	.S 🔲 SVOCs 🔲 OTHER tals, Explosives, Propellants, Pesticides, PCBs)	
WET SEDIMENT		
ANALYSES: EXPLOSIVES TAL METAL FULL SUITE (VOCs, SVOCs, Me	S SVOCs OTHER tals, Explosives, Propellants, Pesticides, PCBs)	
	val i.l.	
(Sound By: (Sound Date)	2C Checked by: <u>2/IFI</u>	
(Signature and Date)) 2/117-12/010	(Signature and Date)	

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					Pla: 20F2
PROJECT NAME: RVA	S AP PBA08	AMPLE LO	OG SHEET PROJECT NO): 172819.00.0	9456.00.9200.02.2
SAMPLING LOCATION:	u Sw-J	\$ 102 C	DATE COLLECTE) (MM/DD/YY):	3/15/10
RANDIE TEAM. PULL	LANVILL	BIRE	VENNIA	TIME:	1645
MENTHED UN = (1	Daly	· ··rR_C		=A: Add	
	<u></u>	F		<u></u>	
IELD OBSERVATIONS (i.e. <u>CLURR</u> , AUG. FI	Water color, c 	odor, flow)	: J	•	
		AL			
	ť	Tistis			****
		· · · · · · · · · · · · · · · · · · ·			
	TEMP	41.36°F	SERIAL NO		ST CALIB
TEMPERATURE:	5.2	°C	ISTERL	Tiel	
	7.76	S.U	1.3.320	2115	Ψ
pH:				-	······································
pH: CONDUCTIVITY:	\$.094	mS/cm			
pH: CONDUCTIVITY: DO:	Ø.\$94 12.26	mS/cm mg/L			
pH: CONDUCTIVITY: DO: TURBIDITY:	Ø.\$94 12.26 6.42	mS/cm mg/L NTU	15357	3/15/10	
pH: CONDUCTIVITY: DO: TURBIDITY: 	Ø.\$94 12.26 6.42	mS/cm mg/L NTU	1 15357 19 240	3/15/10	

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	RVAA PBA08 RI - Surface Wat	er USACE 2. PROJE	- Louisville CT: RVAAP PBA 20	08 RI		RVAAP 8 Ravenna	3451 Sta , OH 442	te Rt. 5 266
	and Wet Sediment Sample Log	3 Sample	Team 10 in in					
5		G	where a fan	Laurich		SHEET	1 OF	Z
	4 LOCATION ID: Friday in 1992	En	15. Cordinates Reco	Indivenvi	1)) Ir	000-
	5. Surface Water Equipment Used: 103		SAMPLE TVD	TE COODE	N. 55	24 11.° ev. 90	5.42 8	2551
	6. Sample ID and Time		7. Dupe ID (if need	Led)				
	FINISSW-103-5012-5W.1	DOD		NO				
	8. MS/MSD ID (if needed)		9. Split ID (if neede	ed)				
*	NÒ			100				
	10. Wet Sediment Equipment Used: Hand Rish Pro	INP.	SAMPLE TYP	E: Composite	· VOC:	5 Grat	ne Ca	noisil
	11. Sample ID	1000	12. Dupe ID (if nee	eded)	1		<u> </u>	10311
	FWSSD-103-5013-52	1004		NO		- De		
	13. MS/MSD ID (if needed)		14. Split ID (if need	led)				
	NO			NO				
	Weather Conditions: 310F P. Claudy, Some	wind.	A	ctivities in the Area	NON	1	•	
	LOCATION SKETCH/COMMENTS			SCA	LE:	None		
	Field Notes: Wet Sediment: 0-3" 50	NON CUT/C	1). trace	0.000				N
	gravel: loose fine to medium	arains	MJ, Wale	uniount of				
	B-6" CI	AY ((L).	WEI.					-
	Gray 10	YR Leli with	h brownish	and sand				
	motting	104R 418.	Soft: day	yellow				
\frown	low plas	ticity root	ts and lea	Ups I I I I I I I I I I I I I I I I I I I				
	surface water collected unde	r~le	E SWOULD (and High				
	ice. Sample taken on 2/18/2	old at look	P SIDDLE (•		
			WCC	xas I				
			\$					
	woods	Stra		ste	•			
	WUUS	am-		COLUS	B			
	×			Culver				
	See 1				(U)			
					X			
	NO OF	-19						
		5			R		·····	1
		moun	A		G D	<u>1-</u> 0-		SALE1
		stream			ête	₩ Pt.	SN !	50 F1
		stream	A A		0 d	+ Pt. Upstre	is ~ !! can f	50 F7 YOM
		Stream	10505	/	99	* Pt. Upstre Geo	is ~ 1! ann f rge loc	59 F7 YOM W
		Stream	woods		Ð	¥ Pt. Upstre Geo	is ~ 1! ram f rze la	50 F7 YOM W
	SURFACE WATER	stream	woods		9	* Pt. Upstve Geo	is ~ 1: an f cze la	50 F7 Yom W
		METALS S	WOGCS /OCs □OTHI	=R	ð	+ Pt. Upstve Geo	is v 1! ram f rze la	SCI FI VOM W
	SURFACE WATER ANALYSES: EXPLOSIVES TAL FULL SUITE (VOCs, SVC	METALS SN	VOCS □OTHI osives, Propella	ER	D D D D D D D D D D D D D D D D D D D	+ Pt. Upstve Geo	is ~ 1! can f rge loc	SCI FI YOM W
	SURFACE WATER ANALYSES: EXPLOSIVES TAL FULL SUITE (VOCs, SVC WET SEDIMENT	METALS SN SCS, Metals, Expl	VOCS □OTHI osives, Propella	ER	D D D D D D D D D D	+ Pt. Upstve Geo	s ~ 1! am f ge la	50 F1 VOM W
	SURFACE WATER ANALYSES: EXPLOSIVES TAL FULL SUITE (VOCS, SVC WET SEDIMENT ANALYSES: EXPLOSIVES TAL	METALS SN SCS, Metals, Expl	VOCS □OTHI osives, Propella	ER	D D D D D D D D D D D D D D D D D D D	+ pt. Upstve Geo	is ~ 1! an f Ge la	YON YON
	SURFACE WATER ANALYSES: EXPLOSIVES TAL FULL SUITE (VOCS, SVO WET SEDIMENT ANALYSES: EXPLOSIVES TAL FULL SUITE (VOCS, SVO	METALS SN OCS, Metals, Expl METALS SN OCS, Metals, Expl	/OCs OTH osives, Propella	ER TR TR TR TR	D D D D D D D D D D D D D D D D D D D	+ pt. Upstve Geo	an f Ge la	SCI FI YOM W
	SURFACE WATER ANALYSES: EXPLOSIVES TAL FULL SUITE (VOCs, SVC WET SEDIMENT ANALYSES: EXPLOSIVES TAL FULL SUITE (VOCs, SVC G. O. O. O.	METALS SN SCS, Metals, Expl METALS SN SCS, Metals, Expl	VOCS OTHI osives, Propella VOCS OTHI osives, Propella	ER	D D CBs)	+ Pt. Upstve Geo	is ~ 1! iam f ige loo	SCI FI YOM W
	SURFACE WATER ANALYSES: EXPLOSIVES TAL FULL SUITE (VOCs, SVC WET SEDIMENT ANALYSES: EXPLOSIVES TAL FULL SUITE (VOCs, SVC FULL SUITE (VOCs, SVC Recorded By: Mild Cummed	METALS SN DCS, Metals, Expl METALS SN DCS, Metals, Expl DCS, Metals, Expl	VOCS OTHI osives, Propella VOCS OTHI osives, Propella	ER	CBs)	+ Pt. Upstre Geo	is ~ 1! an f ge la	
	SURFACE WATER ANALYSES: EXPLOSIVES TAL FULL SUITE (VOCS, SVC WET SEDIMENT ANALYSES: EXPLOSIVES TAL FULL SUITE (VOCS, SVC FULL SUITE (VOCS, SVC Recorded By: Multiple and Date)	METALS SN DCS, Metals, Expl METALS SN DCS, Metals, Expl METALS SN DCS, Metals, Expl METALS SN DCS, Metals, Expl	VOCS OTH osives, Propella VOCs OTH osives, Propella	ER nts, Pesticides, PO ER nts, Pesticides, PO (Signature an	CBs)	+ pt. upstve Geo	is ~ 1: an f ge la	SCI FI YOM YO

				V0. 201 -
	SA		OG SHEET	,
PROJECT NAME: RVA	AP PBA08 R	RI	PROJECT NO	: 172819.00.09456.00.9200.02.200
SAMPLING LOCATION: _FV	VSSW-103	,	DATE COLLECTED	(MM/DD/YY): 03/14/2010
SAMPLE TEAM: IteAnter	MILLER			
WEATHER: <u>40°E, Sunny</u>	no wind	A	ACTIVITIES IN ARE	A: NONE
FIELD OBSERVATIONS (i.e.	Water color, or	dor, flow)	2000 Frand, T	HIS STREAM LOOKS LIKE
A MATULE STEFAM V	N 3 HGH	BAHKS 0	n EACH SIDE	
		AL	A.	
		V		
	3.68°		SEDIAL NO	
FIELD MEASUREMENTS	3.68° READING	UNITS	SERIAL NO.	LAST CALIB.
FIELD MEASUREMENTS TEMPERATURE:	3.68° READING		SERIAL NO.	LAST CALIB. OZ ILU ZOIO BY SV
FIELD MEASUREMENTS TEMPERATURE: pH:	3.68° READING 34073.9 7.83	UNITS S.U S.U mS/cm	SERIAL NO.	LAST CALIB. OZ /14/2010 BY SV
FIELD MEASUREMENTS TEMPERATURE: pH: CONDUCTIVITY: DO:	3.68° READING 334073.47 7.83 0.169	CUNITS S.U S.U mS/cm	SERIAL NO.	LAST CALIB. OZ /IU / ZOIO BY SV
FIELD MEASUREMENTS TEMPERATURE: pH: CONDUCTIVITY: DO: TURBIDITY:	3.68° READING 394073.44 7.83 0.169 13.59	CUNITS SU S.U MS/cm mg/L NTU	SERIAL NO.	LAST CALIB.
FIELD MEASUREMENTS TEMPERATURE: pH: CONDUCTIVITY: DO: TURBIDITY: OTHER:	3.68° READING 334073.9 7.83 0.169 13.59 7.80 NA	C UNITS 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	SERIAL NO. 15556	LAST CALIB. OZ JUL ZOIO BY SU 7

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AUGUST 2012 SAMPLING

SAIC	RVAAP -	Surface Wat	ter & W	et Sediment	Field F	orm	SHEET	1 OF	1
From Science to Solutions	USACE - Louisville		RVAAP	8451 State Rt. 5	1. Sample Team: Katie wells AMANDA TRENTON				
	RVAAP PBA 2008 RI		Ravenna	a, OH 44266					
Location ID:	-081)		N 41 1046	es Recorded	" W: 81'	05'55.	377 <i>1</i> i	0 //
Surface Water Sample ID:	5. Date and Time: MA								
NA									
. Dupe ID (if needed):				7. Split ID (if needed)					
MA				NH					
. Surface Water Sample Type a	and Equipment Used	NH - N() SURI	FALLE WAT	DR.	· · ····-	9. MS/	MSD:	
11690-09	210-58	77 - 50)	MB/0	09/12	1, 1240	_		
2. Dupe ID (if needed):		12 32		13. Split ID (if needed	i)	., 1010	2		
NIA				NA					
4. Wet Sediment Sample Type	and Equipment Use	ed: 3/8" 55	Push	Probe.			15. MS		20
6. Weather Conditions: 70	Ficil		10011	17. Activities in the A	rea: NC	ne			<u>~1</u>
		· · · · · · · · · · · · · · · · · · ·			1	SCALE:	Nono		
OCATION SKETCH/CO	WINENTS					SCALE.	None		
					+1.2	()))		1	4
Field Notes:					- Ulr	y grass	y; aree	n;	N
127						J Com	oosted		
1-2EST						A	rface	mat	erial
for									
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and a merid in a second data and a local better data and a second data and				f and	i Cenici	1) (aller tim)	4	1	
			F		contros or	N CORECTARY		1	
				<u> </u>					
	ine control instruction	Form							
		5, 55	1D					1	
					1		/		
							2		
						unione in terms			
FIELD MEASUR	REMENTS	READING	UNITS	SERIAL N	0.	LA	ST CALIB	•	
TEMPER	RATURE:		°C						
· · · · · · · · · · · · · · · · · · ·	pH:		-s.u	-					
CONDUCTIVITY:			mS/cm	XIM A	20/				
DO:		mg/L		0100	42				
TURBIDITY:			NTU		′				
OTHER									
SURFACE WATER ANALYSES:	EXPLOSIVES FULL SUITE (EXPLOSIVES FULL SUITE (TAL MET VOCs, SVOCs, f	ALS 🗌 S Metals, Exp ALS 🗍 S Metals, Exp	VOCs OTHE blosives, Propellar VOCs OTHE blosives, Propellar	R tts, Pestic R tts, Pestic	ides, PCBs) ides, PCBs)	S		
Recorded By:	(Signature and	hetr Date) 08/09	QC Chec	cked by: Kat	tắc (N (Sign	Jello 19 ature and Date	<u>8 </u> 17 12	VI.	