	Site: 0ra	nd Ledge At	AF		
Date Time Staff	1V519 S.Kalemba		Loc ID Northing Easting	Aot 1-21	
Site Conditions Water depth (ft): Channel width (ft): Notes (not covered	in Habitat Form):	Flowin			
SRE	s outlet	on North	Side		
Field Data	Meter Type: 45	1/turbidity	Meter ID:	1392/6802)
Vater Quality Parar Measurement Depth Femperature (deg. (Sp. Conductance (u Dissolved Oxygen (f Dissolved Oxygen (f Dissolved Oxygen (f DH (S.U.) Furbidity DRP	n (ft) C) S/cm) ng/L)	Middle of Water Col 		(1487) (C) -	
Surface water sam Sample ID: Sample Time: Sype of Sample Sample depth (inche Io. of samples colle Io. of samples rejection Inalyses Collected:	Grab / Pump / Other s): cted:	2-0,5 	ationale:	circle if collected FD MS/MSD	
heen lotes (not covered in	Yes / No n Habitat Form):	Odor Yes /	No		
centre fig	101	4 		6	
ediment collection ample ID: ample Time: ore penetration dep umber of cores coll umber of cores reje nalyses Collected:	AOT 1-21-0 1623 th (inches):	SD-0-0.5	ationale:	circle if collected FD MS/MSD	
heen otes and material d	Yes / 😡 escription (include sedim	Odor Yes /	lo avering, entrained	debris biota):	
Tanish-real c	ilay, high ples	ticity, medium			eady rat

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Surface Water and Sediment Sample Collection Form ledge (acend NASF Site: Date Loc ID Time 0 1-21 Staff Northing Easting **Site Conditions** 0-0.5 Water depth (ft): Flowing: (Yes) No Channel width (ft): Notes (not covered in Habitat Form): attet on Morth side, qualitying ren event ~0.26 dies SRB Meter Type: VS Quartor Turbedily Muter ID: 4392/6007 **Field Data** Water Quality Parameters: Middle of Water Column Measurement Depth (ft) 0-0.91 Temperature (deg. C) Sp. Conductance (uS/cm) Dissolved Oxygen (mg/L) 83 Dissolved Oxygen (% sat) pH (S.U.) 60 Turbidity .78 ORP 00.00 Surface water sample collection: ADI 1-21-5W-6-0.8-W circle if collected FD MS/MSD Sample Time: Grab / Pump / Other Type of Sample Sample depth (inches): No. of samples collected: No. of samples rejected: 0 Rationale: NA Analyses Collected: PFA LCMIM Tal B-1.5 Sheen Yes / No Odor Yes / No Notes (not covered in Habitat Form); Sediment collection: circle if collected Sample ID: FD MS/MSD Sample Time: Core penetration depth (inches): Number of cores collected: Number of cores rejected: Rationale: Analyses Collected: Sheen Yes / No Odor Yes / No Notes and material description (include sediment type, texture color, layering, entrained debris, biota):

	Site: Orand	Ledge AASF	
Date Time Staff	10/5/19 5. Nelemba	Loc Nort East	hing
Site Conditions Water depth (ft): Channel width (ft Notes (not cover	0-0,5	Flowing: 🔞	1) Es /
JER in	let on East er	rd.	
Field Data Water Quality Pa Measurement De Temperature (de	epth (ft)	Auaro Mete Motor Middle of Water Column	1814100988 4392/6802
Sp. Conductance Dissolved Oxyge Dissolved Oxyge pH (S.U.) Turbidity ORP	e (uS/cm) n (mg/L)		
Surface water s Sample ID: Sample Time: Type of Sample Sample depth (in No. of samples c No. of samples re Analyses Collector	ches). ollected:	Rationale:	FD MS/MSD
Sheen Notes (not covere	ed in Habitat Form):	Odor Yes / No	
hater f	lowing slowly.		
Sediment collec Sample ID: Sample Time: Core penetration	AOT 1-23-5 1220 depth (inches):	0-0-0.5	circle if collected
Number of cores Number of cores Analyses Collecte	rejected: 3	Rationale:	B Asthing but no
	al description (include sediment t		
11114	Contintal America	Kramites A	ecomposition odor,

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Surface Water and Sediment Sample Collection Form

	Site: Grand L	edge MSF			
Date Time Staff	14307 11/21 S. Tjen	119		Loc ID Northing Easting	A011-22
Site Conditions Water depth (ft): Channel width (ft): Notes (not covered i	0 - 0.5 [♥] NA in Habitat Form):		_Flowing:(-	Yes / No	
	on East end of Sompting	, Qualify	hg ra	in eve	nt ~0.2 inches
Field Data	Meter Type: YSI	Quatro/ Turbe	idity Meter	Meter ID:	18 H1009 8K
Water Quality Parar Measurement Depth	neters: n (ft)	Middle of W	ater Columr		4392/6802
Temperature (deg. (Sp. Conductance (u Dissolved Oxygen (i	S/cm)	8.19			
Dissolved Oxygen (⁴ pH (S.U.) Turbidity ORP	% sat)	7.83 9.38 2.55		-	
Sample depth (inche No. of samples colle No. of samples reject	AGT 1 - 22 - 5W - 1430 Grab / Pump / Other es): 6 acted: 2 cted: 0	×	-	- - onale:	Circle if collected FD MS/MSD
Analyses Collected:	PFAS by LCN	ISMS Take	B-15		
Sheen Sheen Sheen		Odor	Yes / No	>	
Stagnant	water, some k	subbles			
Sediment collection Sample ID: Sample Time:	<u>n:</u>			-	circle if collected FD MS/MSD
Core penetration de Number of cores co Number of cores rej Analyses Collected:	llected:		Ratic	nale:	
Sheen	Yes / No	Odor	Yes / No		
Notes and material	description (include sedi	ment type, textur	e color, laye	ering, entra	ined debris, biota):

Surface Water and Sediment Sample Collection Form

site: Grand Ledge AAST	=
Date Time Staff Sokalemba	Loc ID AOT 1-23 Northing Easting
Site Conditions O-O.5 Flowing: Water depth (ft): Notes (not covered in Habitat Form): Flowing:	Ce OSK
SRB on South west end.	
Field Data Meter Type: 151 Turbidity	Meter ID: 4302/6802
Water Quality Parameters: Measurement Depth (ft) Temperature (deg. C) Sp. Conductance (uS/cm) Dissolved Oxygen (mg/L) Dissolved Oxygen (% sat) pH (S.U.) Turbidity ORPMiddle of Water Colum O-0.5	n
Surface water sample collection: Sample ID: 401-23-50-0-0.5 Sample Time: 1440 Type of Sample Grad / Pump / Other Sample depth (inches): 0 No. of samples collected: 0 No. of samples rejected: 0 Ratio Analyses Collected:	circle if collected FD MS/MSD onale: 3-05.
Sheen Ves / No Odor Yes / No Notes (not covered in Habitat Form):	
Water flowing slowly.	
Sediment collection: Sample ID: Sample Time: Core penetration depth (inches): Number of some perilected	FD MS/MSD
Number of cores collected: Number of cores rejected: Analyses Collected:	nale:A
Sheen Yes / No Odor Tes / No Notes and material description (include sediment type, texture color, layer Clay - high plasticity, tan-Red, there finge	ering, entrained debris, biota): Sand Medium Star Solt.

Easting Vesy No Meter ID:	event ~ 0.2 inch at time of sampling 4392/ 6802
Meter ID:	at time of samplug
	/
_	
	circle if collected FD MS/MSD
-	
_	NA
5	
3	
જ	
_	circle if collected FD MS/MSD
onale:	
	onale: S

Surface Water and Sediment Sample	Collection Form
site: Grand Ledge	
Date US19 Time 1930 Staff DoKelemba	Loc ID Aot 1-24 Northing
Site Conditions O O Site Conditions Water depth (ft): O O Flowing: Channel width (ft): Image: Channel width (ft): Image: Channel width (ft): Flowing: Notes (not covered in Habitat Form): Image: Channel width (ft): Image: Channel width (ft): Flowing:	Tes K
SRB on South East side.	
Field Data Meter Type DT/Turbidity	Meter ID: 392/6802
Water Quality Parameters: Measurement Depth (ft)Middle of Water Colum 	
Surface water sample collection: Sample ID: Sample Time: Type of Sample Grad / Pump / Other Sample depth (inches): No. of samples collected: No. of samples rejected: Analyses Collected: Mo. of samples rejected: Analyses Collected: Mo. of samples rejected: Analyses Collected: Mo. of samples rejected: Analyses Collected: Mo. of samples rejected: Mo. of samples reject	circle if collected FD MS/MSD
Sheen Covered in Habitat Form):	
hater flowing slowly.	
Sediment collection: Sample ID: Sample Time: Core penetration depth (inches): Number of cores collected:	circle if collected FD MS/MSD
	ionale: <u>A</u>
Sheen Yes No Odor Yes No Notes and material description (include sediment type, texture color, lay	ering, entrained debris, biota):
Gray clay, med-plasticity, med-stiff,	

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	Site:	stand le	age	AASF		
Date Time Staff	11/21/1 1420 S. TJan	9	_		Loc ID Northing Easting	A01 1-24
<u>Site Conditions</u> Water depth (ft): Channel width (ft): Notes (not covered i	0 - 0 NA in Habitat Forn			Flowing:	YesNo	
SRB in	let on	Southe	ast s	ide,	Qualif	they rain evort
~0,270	ches a	t the	of ,	samphy)) () - () - ()
Field Data	Meter Typ	e: YSI Quet	co/Tutbi	dity Meter	Meter ID:	4392/6802
Water Quality Paran Measurement Depth Temperature (deg. C Sp. Conductance (us Dissolved Oxygen (n Dissolved Oxygen (% DH (S.U.) Furbidity DRP	ı (ft) C) S/cm) mg/L)		Middle of V 0-0 173.5 9.50 7.50 7.50 7.50 7.50		n 	
Sample ID: Sample Time: Type of Sample Sample depth (inche No. of samples collected: No. of samples rejec	A01 4-7 Grad / Pump / es): cted: tted:	ey - SW-	0-0,5 		- onale: <u>13-15</u>	circle if collected FD MS/MSD
Sheen	Yes / No	۰.	Odor	Yes / No	>	
Foom	o .	retved				12
ediment collection ample ID: ample Time: ore penetration dep	oth (inches):					circle if collected FD MS/MSD
lumber of cores colle lumber of cores reje nalyses Collected:				Ratio	onale:	
heen -	Yes / No		Odor	Yes / No		ned debris, biota):

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Date Time Staff	1/6/19 1645 So Kalemb	20	Loc ID Northing Easting	Aot 1-2
Site Conditions Water depth (ft):				
Channel width (ft)):	Flowing:	Yes / No	
Notes (not covere	ed in Habitat Form):			
Field Data	Meter Type:		Meter ID:	wend ha
Water Quality Par	rameters:	Middle of Water Colum	in	1170
Measurement Dep Temperature (deg	pth (ft)		_	
Sp. Conductance	(uS/cm)		-	
Dissolved Oxygen			_	
Dissolved Oxygen pH (S.U.)	1 (% sat)		_	
Turbidity			-	
ORP			-	
Surface water sa	mple collection:			circle if collected
Sample ID: Sample Time:				FD MS/MSD
Type of Sample	Grab / Pump / Other			
Sample depth (inc	hes):			
No. of samples co				
No. of samples rej		Ratio	onale:	
Analyses Collecter	d:	the second second		
Sheen	Yes / No	Odor Yes / No		
Notes (not covered	d in Habitat Form):			
Sediment collecti Sample ID: Sample Time: Core penetration d	APT F-25-	-SD-0-0.5		circle if collected FD MS/MSD
Number of cores of Number of cores re Analyses Collected	ollected:	Ensins Table		1/A
Sheen	Yes / No	Odor Yes No		ed debris, biota):

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Appendix B3 Survey Data

Completed by AECOM Pers AECOM Project Name: AECOM Site Name: Survey Company: Job Number: Date:	GRAND LEDGE, MI ARNG PFAS GRAND LEDGE AECOM 60552172 January 14, 2020	AECOM °
Scope of Services:	Establish coordinates and elevation of (7) new monitoring well locations Monitoring Well Northing and Easting established using GPS, top of casing	and ground elevations established using Automatic Level, elevation within 0.01'.
Notes: <u>Coordinate System :</u>	Michigan State Plane South International Feet	

<u>Horizontal :</u>	GNSS RTK Solution Via Michigan CORS Network Solution	GPS First Order	Accuracy: 1 cm + 2 ppm
Vertical Datum :	NAVD 88		Geoid 12A
Vertical Datum Method :	Initial GPS derived Benchmark		Accuracy: 2 cm + 2 ppm
Vertical Method I strument :	Automatic Level	2nd Order Class II	Accuracy: +/- 0.01'

Surveyor: Ted Stremmell / Scott Kalemba

Checked By: Luke Heide

BENCH MARK # #	NORTHING (INT FT)	EASTING (INT FT)	GROUND ELEV
BM 100	463258.92	13023568.19	838.57
BM 101	463218.21	13025331.68	859.85

MONITORING WELL #	NORTHING (INT FT)	EASTING (INT FT)	GROUND ELEV	TOC ELEV
AOI 1-10	463461.05	13024496.14	845.41	844.86
AOI 1-11	464250.05	13024374.67	842.43	842.08
AOI 1-12	464235.80	13025733.63	842.91	842.63
AOI 1-13	463821.28	13025868.19	845.52	845.09
AOI 1-14	463236.23	13025828.79	861.39	861.11
AOI 1-15	463225.07	13024952.05	854.50	853.99
AOI 2-4	463202.42	13023428.67	839.67	839.22

Appendix C Photographic Log

Army National Guard, Preliminary Assessment for PFAS		Grand Ledge AASF and Armory	Grand Ledge, MI	
Photograph No. 01				
Date 5/7/2019				
Time 12:07				
Description: Grand Ledge AASF and Armory SI - Mobilization 1		The second		
Stormwater retention basin outlet location				
Orientation: Not available				
Photograph No. 02				
Date 5/7/2019 Time 13:50				
Description: Grand Ledge AASF and Armory SI - Mobilization 1				
AOI 1-9, location at stormwater retention basin				

Orientation:

Army National Guard, Preliminary Assessment for PFAS		Grand Ledge AASF and Armory		Grand Ledge, MI	
Photograph No. 03		REPAILS (1975)	<u> Malana</u>		
Date 5/9/2019	-			AV AN	
Fime 15:10		Charles Proven	a AME	and the second second	
Description: Grand Ledge AASF and					
Armory SI - Mobilization 1			A CONTRACTOR	ALAN TO THE	
AOI 1-6, post-drilling conditions prior to well					
completion			Harrister		
			a construction of the	A Constant of Cons	
		NO AT 1988		the Contra	
				AN TRACE	
		Sector A			
Orientation:	-				
Not available			RANK 1		
Photograph No. 04					
Date 5/8/2019		Mar Marine Said H			Va TI
Time 2:04					1 60 20
Description:					the second
Grand Ledge AASF and Armory SI - Mobilization 1					
Formation of an artesian well				ALL AT A	
at temporary monitoring well AOI 1-6					Cole:
1011-0			A DASAS		ST IN
					A AN
Orientation:					

Not available