11 September 2019 Robert J. Parks Library 5 – 7:20 p.m. Eastern Daylight Time

Final Meeting Minutes

Current as of: 31-Jan-20

Members Present	Organization
Bill Gaines	Community Member
Beth Place	Department of Environment, Great Lakes, and Energy (EGLE)
Abiy Mussa	Michigan Department of Health and Human Services (MDHHS)
Daniel Stock	Community Member
Arnie Leriche	Community Co-Chair
Denise Bryan	District Health Department #2 (DHD2)
Matt Marrs	Air Force Civil Engineer Center/Air Force Co-Chair
Clint Emerson	U.S. Department of Agriculture Forest Service (USFS)
Joe Maxwell	Community Member
Jeff Moss	AuSable Township
Mike Munson	Oscoda-Wurtsmith Airport Authority (OWAA)
Robert Tasior	Community Member
Aaron Weed (Alternate)	Oscoda Township
Cathy Wusterbarth	Community Member
Catherine Larive	Community Member
John Nordeen (Alternate)	Oscoda Township
Jerry Schmidt	Community Member
James Davis	Community Member
Members Absent	Organization
Ryan Mertz	Community Member
Martha Gottlieb (Alternate)	Community Member
Tim Cummings	Oscoda Township Trustee
Other Attendees	Organization
Breanne Humphreys	CNMC (USAF Contractor)
Paul Rekowski	Oscoda Resident
Dale Corsi	DLZ (MDEQ contractor)
Matt Baltusis	EGLE

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Mark Weegar	CNSP (USAF Contractor)
Anthony Spaniola	Oscoda Resident
John Bearclaw Wagner	Oscoda Resident
Dennis Rey	
Greg Schulz	Oscoda Resident now Community RAB Alternate
David Winn	Oscoda Resident now Community RAB Alternate
Mark Henry	East Tawas Resident now Community RAB Alternate
Rex Vaughn	Greenbush Resident now Community RAB Alternate
Scott Lingo	AuSable Resident now Community RAB Alternate
Jeff Gottlieb	Oscoda Resident now Community RAB Alternate
Robert Kennedy	Harrisvile Resident
Bill Palmer	Oscoda Trustee
Jackie Temple	
J.D. Hock	MiCTV
Mike Jury	EGLE
Tammy Newcomb	Department of Natural Resources
Malcolm McClendon	Air Force Installation and Mission Support Center

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Meeting Video Link: https://www.youtube.com/watch?v=GhIY-1DM3GM&list=UU6-1dMCForUJI3c-L QKBw&index=2&t=0s

Attachment 1: Agenda

Attachment 2: Presentation

Attachment 3: PFOS/PFOA Tracker

Attachment 4: EGLE projected timeline

Attachment 5: Meeting Evaluation Form

Welcome and Introductions

Mr. Malcolm McClendon, facilitator, began the Wurtsmith Restoration Advisory Board (RAB) meeting just after 5 p.m., facilitated RAB member introductions and asked co-chairs for opening remarks.

Mr. Matt Marrs, Air Force RAB co-chair and Base Realignment and Closure Program Management Division, welcomed attendees to the meeting and asked for a moment of silence to honor victims of the September 11, 2001 terrorist attacks.

Mr. Arnie Leriche, community co-chair thanked community RAB members for volunteering more of their time to commit to work sessions, and he thanked Bill Gaines for stepping up to assist him in his co-chair responsibilities and asked the general public to contact these members if they have questions.

Stakeholder Updates

RAB members provided updates on some of the actions which have occurred since the last quarterly meeting.

U.S. Air Force (USAF) (0h:9m:0s)

Mr. Marrs provided USAF updates for the Mission Street Ion-Exchange pump and treat system under development at well as other project highlights:

- The Mission Street pump-and-treat system will be retrofitted to feature a new, ion exchange resin treatment system. USAF awarded a contract to Aerostar on 23 August 2019.
- USAF completed quarterly DW monitoring of private wells and completed Expanded Site Inspection (ESI) fieldwork.
- USAF began construction work on SS-57 for a supplemental Volatile Organic Compounds (VOC) remedy. He said next they'll install performance monitoring wells to sample at that site.
- USAF also submitted a draft feasibility study to EGLE for the landfill sites 030 and 031.

Mr. Marrs announced that he will retire September 30th and that this meeting will be his last serving as the Base Environmental Coordinator (BEC) for the Wurtsmith project and RAB co-chair.

Mr. Marrs provided more details on the Mission Street treatment system, to include treatment system objective and anticipated timeline for system operation.

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U.S. Forest Service

Mr. Clint Emerson, Park Ranger, said the USFS is focused on the Clark's Marsh area, which is a highly contaminated, protected land. He said they approved and issued research permits to two university students out of Bowling Green University.

He said they have completed their own Preliminary Assessment/Site Inspection for Clark's Marsh. They're looking forward to working in partnership with USAF.

EGLE (0h:14m:35s)

Beth Place said they've been holding listening sessions with the community and other stakeholders. The agency also participated in tours with Michigan's Attorney General, Dana Nessel, and state representative Sue Allor.

The water resources division recently completed an inspection of the central treatment system. Those findings are pending.

For EGLE's remediation and redevelopment division (RRD), Mr. Mike Jury announced he'll be transitioning to a state-wide role. He introduced two new project managers for the Oscoda area: Andy Karg and Amanda Armbruster.

Community RAB (0h;19m;30s)

Ms. Cathy Wusterbarth introduced members of the audience who traveled from other communities to support.

Ms. Wusterbarth read a prepared statement, summarized as follows:

We have been living with toxic PFAS contamination for years in nearby water ways as well as our groundwater. According to the Michigan Department of Health and Human Services, the surface water in our community has been found to have a hazard quotient 38 times the recommended level (of one) for children. The fish in the AuSable River, which people rely on and have always eaten, are some of the most highly contaminated in the world and consumption alone has likely resulted in dangerously high PFOS blood levels in Oscoda-area residents. We know these chemicals are dangerous and we know their origin, the Former Wurtsmith AFB. Contamination flows direction and continuously, uninterrupted into nearby Lake Huron. Frankly, the government response or lack of to this water contamination has been intolerable. Over nine years has passed since the discovery of these toxic chemicals in our water, yet the federal government has failed to put any real plan in place to clear up the contamination and protect our water. My friends and family are developing and dying of kidney, liver and testicular cancers. They are also suffering from immunological diseases, increased cholesterol and thyroid diseases, among other possible related disorders. Unexplainably, the Air Force has not even committed to a timeline for coming up with a plan even though there are ongoing threats to public health. With the Air Force here tonight, we are here to tell you that this injustice cannot continue. We are demanding the Air Force take action and stop the bleeding of PFAS now. The Air Force must immediately clean-up the plumes impacting our public beach, our state campground, youth camp and our groundwater. It is also time for the federal government to help the impacted people by doing health outreach, evaluations of local citizens, veterans and their families. We have suffered from this contamination for far too long and the federal government has deceived, delayed and failed to provide real solutions to this problem. The only answers

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we've gotten from the Air Force is that "further investigations need to be done" but we already have the information we need. Our community is being poisoned by these contaminants. The time for action is now. Thank you for the opportunity to tell you that Oscoda will not be silenced, we will not be minimized and we will not be forgotten. Continued inaction is unconscionable.

Mr. Leriche recapped efforts community RAB members have undertaken to advocate for remediation since the last RAB meeting.

- The community RAB has tried to connect with other RABs and also other agencies that are
 responsible to identify how the contaminants are affecting people, and what the USAF should
 be doing in relation to cleaning up and remediating.
- Attended two lobbying days in Congress by invite and talked to over 20 congressionals to pass bills that congress has drafted to make PFOS/PFOA hazardous substances and to put more money in the USAF budget so they can comply with CERCLA and start remediating and taking real action.
- Attended the national conference on PFAS in Boston and talked to representatives with the
 Agency for Toxic Substances and Disease Registry (ATSDR) and the National Institute of health
 experts about where the real numbers should be to protect health. He said the maximum
 contamination levels (MCLs) that are being discussed by Michigan will ultimately set clean-up
 standards for the USAF.
- Mr. Leriche reviewed the DRAFT MCL's and submitted comments to MPART that the proposed MCL for PFHxS at 51ppt was not appropriate due to health data used by NH which promulgated MCLs last Spring to include PFHxS at 18ppt. Their health study was used for this MCL was forwarded to MPART.
- Mr. Leriche requested the USAF review and comment on MCLs at the same time in DRAFT form so there are no delays. (Action Item created)
- Visited Grayling Army National Guard Base contamination site. He said the state is funding a
 pilot called "Plume Stop." Mr. Leriche asked the state to look into finding the funding to do the
 same thing in Oscoda.
- He asked for improvements in transparency, comments and communication by all agencies. Mr.
 Leriche asked agencies to share information before taking action so the community and RAB can
 influence decisions. He asked for a schedule, and receive a draft report to include the ESI
 report. (Action Item created)
- Mr. Leriche alleged the USAF has not asked for extra Congressional money that was made available by Congress in the last two years according to a DoD response to the US Senate. He referenced a letter [DoD] that itemized projects that were delayed in order to divert funds to PFOS/PFOA priorities—to include one project at Wurtsmith.
- Regarding the DNR deer sampling study [2018], sampled only one deer "from the contaminated Clark's Marsh". Mr. Leriche asked EGLE to come up with a CERCLA, remediation-based study to push USAF to do an ecological risk assessment, or Fish and Wildlife Service.

AuSable Township (0h;29m25s)

Mr. Jeff Moss, AuSable Township Trustee, said they plan to meet with EGLE project managers and leadership on Friday, September 13. He said the township hopes to learn more about surface water quality and requested sampling results for the mouth of the river.

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Oscoda-Wurtsmith Airport Authority (OWAA) (0h;30m;40s)

Mr. Mike Munson provided a brief recap on the Brownfield grant they received to conduct environmental risk assessments associated with renovations and construction work OWAA is interested in pursuing to support growth and expansion. He thanked the USAF for letting the airport use existing MWs to support investigation—he said allowing OWAA to use existing well network verses drilling new ones saved OWAA from significant expenses.

Oscoda Township (0h;32m;00s)

Mr. Aaron Weed, Oscoda Township Supervisor, said phase one water extension is complete and they're working diligently on phase two. He said they asked the state for the full amount of funds needed to remedy the area of concern.

Mr. Weed talked about concerns he expressed to Assistant Secretary of the Air Force for Installations, Environment and Energy (SAF/IE), Hon. John Henderson, during his visit to Oscoda in April 2019. He said it seems the Air Force is extremely reluctant to put in the resources needed to fully address the problem. He also discussed his concerns regarding using old infrastructure in the treatment of PFOS/PFOA and whether or not it's designed to handle the plumes. He asked when new infrastructure will be put in place to stop this bleeding into surface water. He asked if USAF asked for the additional funds needed for 2020 in order to remedy this at the Mission street plant with old infrastructure rather than putting in new infrastructure to handle the contamination that goes per square mile beyond the old infrastructure.

He asked for the PFAS levels for GW pumped to the Mission Street Plant and what those numbers will look like after treatment (effluent.). Mr Marrs stated "that will be captured". (Action Item created in Tracker)

Michigan Department of Health and Human Services (MDHHS) (0h;34m;55s)

MDHHS Toxicologist, Mr. Abiy Mussa, introduced Senior Water Policy Advisor for the Michigan Department of Natural Resources, Tammy Newcomb. Ms. Newcomb advised the community not to eat turtles or muscrats from Clark's Marsh. In response to Mr. Leriche's statement about the deer study, Ms. Newcomb clarified that the agency took 20 deer from around the area last year, most within three miles of Clark's Marsh where there was a high probability that deer within that range would have had contact with the water in Clark's Marsh. She said only two had any detectable level of PFAS in their muscle in very low amounts. She said only one deer had high levels above the do not eat action level of 300 parts per billion (ppb) with a level of 547ppb in the muscle. Currently they are:

- Working with the local DNR staff to increase the sample size to understand if there are other
 potential levels in the muscle because all 17 other animals were no-detect in the muscle. Slight
 detections in the liver and kidney but no-detect in the muscle.
- Working with local folks in the area to get up to 50 samples; they won't get the results back for three months. They can dispose of the deer, get a tag to hunt elsewhere or they can hang on to the deer until they get the results back. So local staff are working with local people to get some additional samples which will help them in terms of the advisory and the understanding of it.
- MDHHS has told them that if DNR "can get more negatives or non-detects, that will help them" understand the Advisory for the future.

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- Phase II: conduct targeted assessments of deer in the Clark's Marsh area in spring 2020. Results
 will be combined with the 2019 deer samples to help MDHHS update the Advisory for that Fall
 hunting season.
- DNR funded the start of an Ecological Risk Assessment in Clark's Marsh for aquatic animals and biota. Over 30 applicants submitted proposals and the grant was awarded to Purdue University. They commenced their study.

Department of Health District 2 (DHD2) (0h;41m;13s)

Ms. Denise Bryan, DHD2 health officer, said she'll be in Lansing next week. Talked about behavioral health and the need to be able to address anxiety people may be feeling about human health.

She said behavioral health isn't mentioned very much, but the trauma to people for an environmental contamination and the thought of having the contamination that is bio accumulating can cause a lot of anxiety. She said time is working against them, and called it imperative to take action to eliminate the risk to the community and a social injustice to not take action. She said restoring natural resources will require the DoD and federal agencies to take the lead. Ms. Bryan said money is crucial to keep the movement going forward. She asked how many health advisories it will take and what needs to happen for the action to start so that people feel the federal government is on the right side of the issue. She implored USAF to take steps to eliminate the contamination and help with infrastructure and family needs.

Technical Presentations

Dispute Resolution (0h;44m;00s)

Mr. Marrs recapped the dispute resolution process between the state and USAF and itemized the areas of agreement listed in joint press release issued by EGLE and USAF in July 2019.

Expanded Site Inspection (ESI) - joint brief by USAF and EGLE

Mr. Marrs explained that the ESI used to be referred to as an SSI and recapped investigation progress and the objectives of each phase of the CERCLA investigation to date. Emphasis will include Conclusions, some of those are moving on with RI and evaluation of Interim Remedial actions.

Ms. Place explained EGLE's role in overseeing the site investigation and sampling activities at the former base. They review the Quality Plan implementation by the USAF as agreed to earlier.

Mr. Jeff Moss asked about the CERCLA timeline and a previous estimate Mr. Henderson (SAF/IE) referenced when he visited Oscoda in April. Mr. Marrs said the approximate timeline of four to six years that he cited is accurate.

Mr. Moss asked if the community will continue to have current levels of contaminants going into the surface water and drinking water for the next four to six years based on this process and the speed in which the state and USAF is moving.

Mr. Marrs said part of the ESI will include conclusions which talk about potential interim response measures.

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Mr. Marrs briefed the ESI report development that will result in delivering a draft report to EGLE in December 2019.

Ms. Place briefed EGLEs role in reviewing the draft report and the items they'll be looking for. She estimated that conducting the review and providing comments back to USAF will take approximately 60-90 days. Ms. Place then provided a projected timeline by EGLE for delivering a final report by May 2020.

Mr. Marrs highlighted the potential outcomes following ESI report delivery. The following questions and action items were posed during and following the ESI report development presentation:

Why can't the USAF skip the slow CERCLA process stuff and jump to interim actions when we have substantial exposure, not only to the public, but also the biology of the area? (Mr. Weed)

- Mr. Weed asked is USAF still going down the lines of sovereign immunity?
 Mr. Marrs said USAF legal would have to address this question.
- Request for BRAC leadership to attend the next meeting. (Mr. Leriche)
- Mr. Weed asked if the USAF asked for enough money for 2020?
 Mr. Marrs responded that there have been discussion of a "plus up" that the BRAC program hopes to see in 2020, but that anything beyond that knowledge is beyond his paygrade.
- Mr. Joe Maxwell, RAB community member, asked if Remedial Investigation sequencing and prioritization is based on the population impacted and if larger communities will take priority over smaller ones.
 - Mr. Marrs said exceedances to DW is a risk factor.
- Action Item: Mr. Leriche asked for an AI regarding where the RAB fits in for receiving the draft ESI and process for our draft report review. (Action Item created in Tracker)
- Mr. Marrs repeated that there are 189 active and BRAC sites on the RI phase list and that at the very top of Relative Risk are those 3 sites: Pease, Reese and Wurtsmith. (Slide #25)
- Mr. Marrs stated that regarding diversion of budget funds, projects were prioritized where there
 were Drinking Water exposures.

Transducer Study – joint presentation by EGLE and USAF

USAF and EGLE co-presented the objective, background on fieldwork and key takeaways from their respective transducer studies. Advantage of joint study is that there are two Agencies and their consultants basically doing a peer-review of the data.

Mr. Moss asked what timeline they can depend on from the state for their off-base investigation and response actions. Significant dialogue continued with Beth Place committing to follow up with Jeff Moss on timelines for EGLE's Bay City District investigations not currently connected to USAF mission-based use of AFFF.

Ms. Place explained the distinction between USAF-led investigation and EGLE investigations based on sources.

Preliminary findings and the EGLE consultant's preliminary memo indicates support with the earlier study in 1986 by the USGS for the USAF. Mr. Marrs briefed the USAF transducer monitoring which indicates Groundwater flows toward Van Etten Lake from both East and West sides of the lake. That is "called a gaining stream".

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Break (1h;25m;00s)

A meeting break commenced.

Ground-Surface Water Interface (GSI) (1h;39m;15s)

Mr. Matt Baltusis, EGLE geologist and project manager, briefed groundwater data collected between 2011 and 2018 by the Air Force and EGLE.

Baltusis explained the importance of the location of wells.

Mr. Moss asked if they've been able to determine contamination levels entering the AuSable River from Clark's Marsh. Mr. Baltusis said that would be determined by studying the wetlands, and that EGLE is currently in discussions regarding that type of study.

Mr. Leriche asked how much sampling USAF has completed in the waste water treatment plant plume area that extends to the AuSable River. Mr. Marrs said it would be assessed during the RI.

Mr. Leriche stated that additional sampling had not yet taken place because it's not related to DW, but contended that it should be sampled due to the "Do not eat fish" advisory issued by the state in 2013.

Mr. Moss asked for an action item requesting an investigation for the contamination in the area between the WWTP and AuSable River. (Action Item created in Tracker)

Mr. Weed asked if USAF and EGLE can stop focusing solely on DW. He said GW and surface water become DW at some point and asked that the agencies treat it as a holistic issue rather than separate pieces.

Ms. Place responded that the state agencies are working through MCL process on the state level for additional compounds, including PFHxS.

RAB Business

Mr. Leriche determined the Operating Procedures discussion could be pushed to the next meeting.

Mr. McClendon moved the discussion forward to RAB community membership.

Mr. Leriche recapped membership resignations, current membership standings and asked the six new applicants for alternate positions to introduce themselves. Applicants included:

- David Winn
- Rex Vaughn
- Greg Schulz
- Jeff Gottlieb
- Scott Lingo
- Mark Henry

Mr. Marrs confirmed that Air Force BRAC Program Management had reviewed and approved new applicants. Ms. Breanne Humphreys, RAB support contractor, recapped membership numbers and vacancies and explained the voting procedures.

A quorum was present and a discussion opportunity was presented for all RAB members to discuss new applicants. Per RAB rules and operating procedures, only community RAB members are permitted to

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vote on RAB community membership decisions, to include new members and community co-chair elections.

An Action Item was tracked for the community RAB's community members to pair new alternates with primary members. (Action Item created in Tracker)

Mr. Leriche made a motion to vote. Seven members voted in favor of accepting all six applicants onto the Wurtsmith RAB as alternates.

Public Comment

Mr. Paul Rekowski, Oscoda resident:

Q: The former project manager for the MDEQ said foam on the lake is reconstituted AFFF; is that still EGLEs stance?

A. Ms. Place referred him to the MPART website's page on foam: https://www.michigan.gov/pfasresponse/0,9038,7-365-88059 91295---,00.html

Q. The township has discovered two PFAS sources. One is the dump on the NE end of Oscoda with a plume that is dumping into Van Etten and second is the sewer treatment plant, dumping a quarter million gallons a day into Clark's Marsh with PFOS that is like 78 parts per trillion. You guys have been doing that for 365 days a year for 15 years. That is about 1.3 billion gallons of water that you have put into Clark's Marsh with PFOS in it. What is the schedule for investigation? And are you going to come up with a citizen's advisory committee like this here to allow the citizens to get information about your plumes and your clean-up plan and give feedback?

A. Mr. Weed responded on behalf of Oscoda Township: At the dump site, PFAS was discovered. Most of what was put in there was household items but we aren't entirely sure of everything that was put in there. There may have been trash from the Air Force base that was dumped into that site. So far what has been found is that the many drinking water wells around that dump and a surface water around there has come back non-detect with the exception of one test at a surface water where it came back at about five parts per trillion with one of the compounds. So in the process we are following with the DEQ we have had a meeting with them, we have discussed the process and how we are going to move forward and what they expect of us. We are in the process of seeking funding to be able to put in more test wells outside the boundaries of the dump to see the extent of that plume. Then we will begin to work on what remediation method to use. Then for the wastewater treatment plant, that was an Air Force plant that the township took over in 2001 to abandon the failing mechanical plant that they had over by the DPW. It is extremely high in PFAS but the Air Force operated that for a lot of years, and was found that the Air Force was directly dumping AFFF into those drying beds which was then flowing out into the marsh area. So the PFAS that is coming through the township system that has been found recently is about 78 parts per trillion. We are beginning discussions with the DEQ again, beginning process to find out the source of that PFAS, whether it's coming from an industrial, residential area or something else. The plan has been turned into the DEQ and we are waiting for approval. Once approved we will begin extensive testing to narrow down the sources of that. We do have some drinking water

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wells that also have a sewer system and the water from those wells are being put into the sewer system. That could be a possible source but we won't know until we do a lot more testing on it. The results with determine what type of system to install in order to reduce the amount of PFAS coming from that because in no way do we want to be contributors to this. Keep in mind that system was operated for decades by the Air Force with direct dumping of AFFF which the Air Force tried to make our responsibility but when the documents were found from the DEQ that showed what they were doing, from what I hear, they have given up on that endeavor.

Q. The DEQ claimed that there was water going under Van Etten Lake; I think what you had said earlier was that DEQ now agrees with you that it is not going under the lake?

A. Ms. Place responded that Currently EGLE has no evidence to suggest that the water is flowing beneath the lake.

Mr. Arthur Woodson, Flint, Michigan:

I was invited here from Flint by Cathy. What I am hearing today is the same thing we hear in Flint. For years we have been drinking contaminated water, bathing in it. I hate to offend you just by being here but if we don't come together, they are going to keep on using you as a guinea pig and a study animal. ATSDR did a study at Camp Lejeune's contaminated water because of the government. To this day, I have a friend with cancer still fighting for health benefits. This is what the government does, they prolong, and they "study." They are using AECOM who also worked in Flint and put in fake data and put out service lines just to get extra money. I have the documentation. Flint, Detroit, Grand Rapids, Alpena, Oscoda, all these different places contaminated and they are not doing anything. They are just talking us to death. They are going to wait until we die. That's it. Five years I have been fighting in the city of Flint to get help.

Mr. Scott Lingo, Oscoda resident/realtor and newly elected RAB alternate (2h;14m; 16s)

Mr. Lingo shared his origins in Oscoda. He said it was his goal to retire and live on Van Etten Lake. He said as a realtor it's sad that he can't take clients and point them to that lake and tell them they can teach their kids how to fish, ski and swim in it because of the contaminants we are exposed to within that body of water. We need young people to come to this area with their families and start businesses, and how do we do that with all this negative publicity we get from the free press, the national news. I beg of the Air Force to give us a timeline and get the ball rolling so that I can sell homes to people that are confident in this beautiful area that we call home. (Action Item created in Tracker)

Anthony Spaniola, Oscoda resident (2h; 18m; 36s)

Q. In the presentation there was a slide (13) with a reference to interim response measure for drinking water. Does that mean you are only looking at remediation measures for DW only, and that you are not looking to clean up plumes contaminating Van Etten Lake? He also asked about the state's rule for groundwater surface water interface.

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Mr. Marrs responded that the ESI focus is on DW receptors, and that GSI (Rule 57) would be assessed as a potential Applicable or Relevant and Appropriate Requirement (ARAR) during the RI phase.

Mr. Spaniola's addressed the audience, stating, "We've just been sold a bill of goods here because the key things that need to be done here...we're on our fifth advisory now, fish, foam, deer and another one is coming up. So now we aren't even looking at interim measures. To deal with the plume at Van Etten Lake and the AuSable River."

Mr. Marrs explained that any interim measure at the conclusion of the ESI would ultimately influence the GSI as well, and then during the RI the GSI would be looked at as well.

Q. Your predecessor said that if Michigan were to adopt a DW standard that was applicable in a non-discriminatory fashion that the USAF would comply. Is that still the position?

A: Mr. Marrs asked for the question to be submitted in writing for an official response.

John "Bearclaw" Wagner, Oscoda Resident

First, was one of your treatment methods ION exchange? Because it's not an Ion. Second, has a survey been done on the fire departments in the area and have they gotten rid of their PFOS firefighting foam? Third, is this stain-resistant carpeting? If it is, we can all track a little PFOS outside.

Conclusion

The RAB meeting adjourned at approximately 7:20 p.m.

Air Force Installation and Mission Support Center

AGENDA

Restoration Advisory Board Meeting

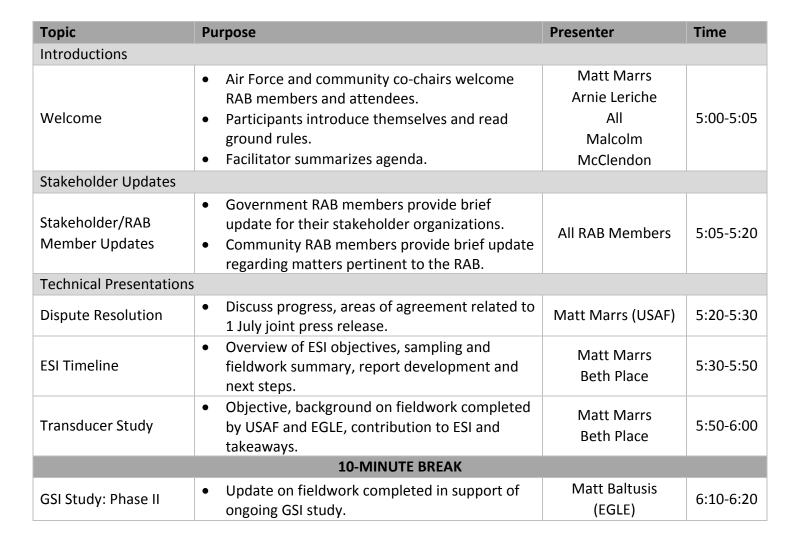
Former Wurtsmith Air Force Base

DATE/TIME: Wednesday, September 11, 2019, 5:00 - 7:05 p.m. EST

LOCATION: Robert J. Parks Public Library, 6010 N. Skeel Ave., Oscoda, MI 48750

GROUND RULES:

- 1. Respect one another and maintain an atmosphere of open dialogue and exchange of ideas.
- 2. Use our time together efficiently, wisely, and respectfully.
- 3. Listen and remain open to each other's varying points of view.
- 4. Speak clearly and succinctly one person at a time; avoid interrupting others.
- 5. Share information early, openly, and honestly.
- 6. Maintain a propensity for progress: prepare, discuss, document, and move forward.
- 7. Accurately and objectively relay to others the discussions that occur at board meetings.





Topic	Purpose	Presenter	Time		
RAB Business					
Operating Procedures	Discuss status, next steps.	Malcolm McClendon	6:20-6:25		
Membership	 Discuss new applicants, current members/changes and next steps. Upcoming Community Co-Chair election (Dec/Jan meeting) 	Malcolm McClendon	6:25-6:40		
Public Comment					
Public Comment	 Public participants provide three-minute verbal comments to the RAB. [Note: Public participants may also choose to provide written comments.] 	Public participants	6:40-7:00		
Conclusion					
Conclusion	Co-chairs offer closing remarks.	Co-chairs	7:00-7:05		
RAB Meeting Adjourns					

Air Force Civil Engineer Center



Wurtsmith Restoration Advisory Board Meeting

11 September 2019 AFCEC/CIB



Wurtsmith RAB Agenda





Welcome



Presentations

- Introductions
- Stakeholder updates
- Dispute Resolution progress
- ESI Report Development
- Transducer Study



- EGLE GSI Investigation
- Operating Procedures
- RAB Community Membership
- Upcoming co-chair election
- Participants provide three-minute verbal comments

Presentations (cont.)



RAB Business



Public Comment





Wurtsmith RAB Ground Rules



- Respect one another and maintain an atmosphere of open dialogue and exchange of ideas.
- **02** Use our time together efficiently, wisely and respectfully.
- O3 | Speak clearly and succinctly one person at a time; avoid interrupting others.
- **04** Listen and remain open to differing points of view.
- Maintain a propensity for progress: prepare, discuss, document and move forward.
- O6 Share information early, openly and honestly
- Accurately and objectively relay to others the discussions that occur at board meetings.



Wurtsmith RAB

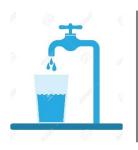


Stakeholder Updates





Completed



Conducted 4th quarter DW monitoring, collecting 19 private well samples

Awarded Mission Street ion-exchange treatment system contract on 23 Aug



Began construction at SS-57 on 3 Sep for supplemental VOC remedy





Completed final ESI fieldwork; collected 83 samples

In progress/Upcoming

- Preparing to install performance MWs to sample at SS-57
 - First remedy enhancement injection planned for late October
- Submitted draft feasibility study to EGLE for LF030 and LF031
- Drafting ESI report

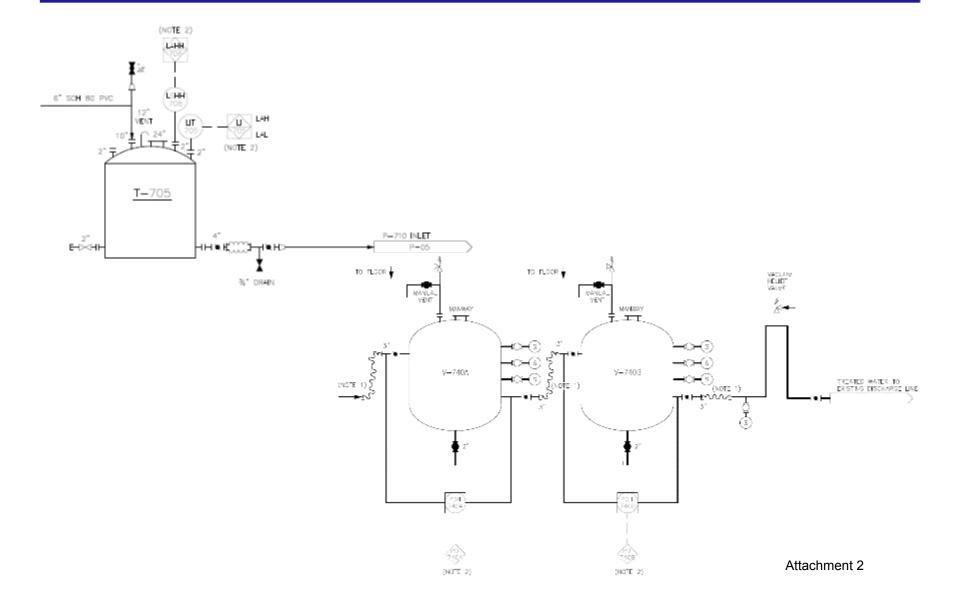


Objective: Address PFOS and PFOA in discharge from the Mission Street Pump and Treat System (MPTS).

- Latest influent concentrations: 318 ng/L (PFOS) and 48.5 ng/L (PFOA)
- Dismantle and remove existing air stripping system to increase available space in building
- Install ion exchange resin treatment system
- Continue to discharge to storm drain
- 200 gallons per minute (GPM) capacity
- One equalization tank and two IX resin beds

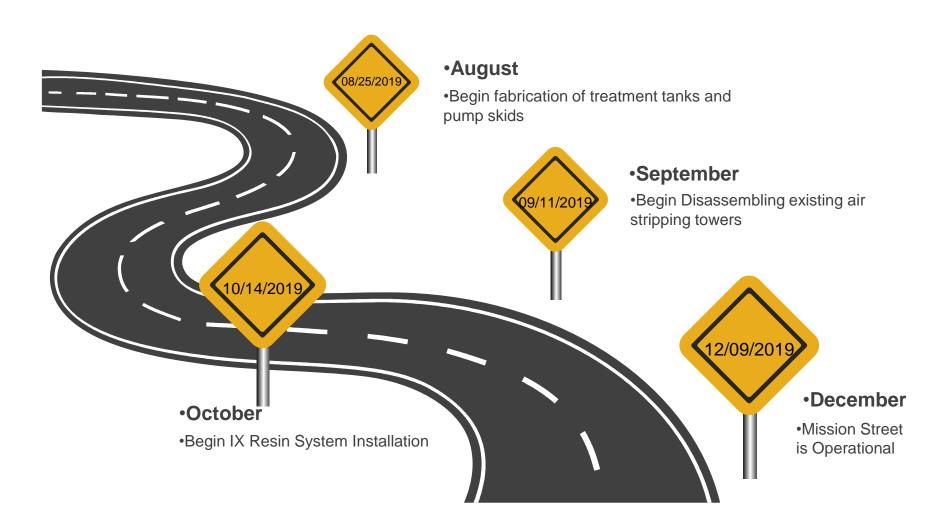


















 Research permit issued to two university students out of Bowling Green University

FGI F RRD

- Local meetings; Rep Allor tour on 8/16; AG Nessel tour on 8/8 EGLE Water Resources
- Fish sampling continues September; WRD inspections EGLE RRD Bay City District
- Mike Jury new role; new PMs for Oscoda area; sampling MWs MDNR update
- University research
- Deer sampling



- Community outreach
- Connecting with other RABs, community groups and agencies

















Wurtsmith RAB





Presentations



Wurtsmith RAB Dispute Resolution Recap



Timeline

11 Jan - 15 March 2018

Correspondence and meetings between EGLE, USAF regarding the seven DR items

28 June 2019

Correspondence: summary of meeting and USAF-recommended action for DR items

Present Day

Discussions ongoing

14 Dec 2017

EGLE initiates formal DR between the DoD and the State of Michigan. Seven dispute items identified

24 April 2019

EGLE and USAF DR committee members meet to discuss path forward

1 July 2019

EGLE and USAF issue joint press release regarding progress toward resolving issues raised in the DR



Wurtsmith RAB DR Press Release





On July 1, 2019, EGLE and USAF issued a joint press release announcing several areas of agreement that help accelerate PFOS/PFOA investigation and treatment at Former Wurtsmith.

Begin operating
Mission Street GW
treatment system by
end of 2019

Evaluate Michigan
GSI and other state
requirements to
determine if these are
ARARs during RI

Submit draft ESI report to EGLE by end of 2019

Review possible
Interim Remedial
Actions, to include
west side of Van Etten
Lake

Implement base-wide RI following ESI report evaluation

*Notice of Violation (NOV) issued 16 Jan 2018 resolved/closed.

*Not a DR item

Attachment 2



Wurtsmith RAB





Expanded SiteInspection (ESI)



Wurtsmith RAB Expanded Site Inspection (ESI)



CERCLA Investigation Recap

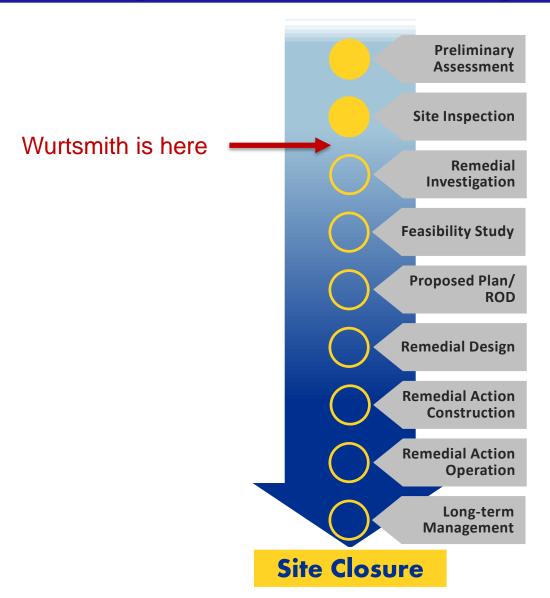
Final Report	Objective	
Jan. 2016	Preliminary Investigation (PA): Identify areas with potential AFFF releases.	
Oct. 2018	Site Inspection (SI): Conduct sampling to confirm AFFF releases; make recommendations regarding RI; sample DW down gradient from releases and respond if above LHA.	
In Production	ESI: Evaluate pathways to DW sources; determine need for interim actions to protect DW from exceeding LHA.	
	*ESI was formerly called Supplemental Site Inspection (SSI)	

The ESI focused on Priority Areas identified during the SI.



Wurtsmith RAB Expanded Site Inspection (ESI)





CERCLA Investigation Recap



Wurtsmith RAB FSI



Areas 1, 2, 4, 5, 6, 7 and 15 have potential pathways for contamination to reach human DW sources.

The ESI builds on SI data and helps develop a <u>conceptual site</u> <u>model</u> that represents site features, conditions and other factors that control transport, migration and potential impacts of contamination.

The final ESI report will include sampling data from SI and ESI.



To date, the USAF has collected more than **350** samples from **131** wells, including up to **56** DWs. There are a total of **79** VAS locations in which **286** samples were collected.





Oversees site investigation and cleanup activities and ensures compliance with applicable environmental regulations.

- EGLE has collected several samples on Wurtsmith Air Force Base.
- EGLE reviews USAF field sampling designs, sampling collection methods and analytical methods prior to the work.
- Quality checks are incorporated into the sample and analysis methods.



Wurtsmith RAB ESI

ESI fieldwork gives the USAF the data needed to continue **protecting DW** sources.

Fate and Transport Model

 A three-dimensional GW model that evaluates where contamination goes based on various factors.

Evaluate Capture
Zones

 Determine if GW treatment systems are capturing all contamination upgradient of potential DW pathways.

Evaluate Interim Response Measures

 Assess need for additional interim response actions to protect DW sources.

The lines of evidence demonstrate...



- The migration pathway is complete / incomplete and an imminent threat to DW is present / not present.
- Transducer study and GW modeling results indicate GW flow rate of XXX migrating toward X DW wells.



Why an ESI?

- Further evaluate priority areas, potential impacts to DW sources
- Supports risk prioritization to establish sequencing and funding
- Expanded sampling will help focus and direct RI

Expanded Site Inspection	Remedial Investigation	
Evaluate potential impacts to DW	Determine nature and extent of contamination	
✓ Sampling/studies at priority areas	✓ Sampling/studies at <u>all</u> release areas	
	✓ Conceptual site model	
	✓ Updated GW model	
	✓ Transducer study	
	✓ Evaluate capture zones	
\mathbf{x}	✓ Risk assessments	
\boxtimes	✓ Evaluate cleanup levels	
	✓ Determine need for remedial action ment 2	



Wurtsmith RAB ESI Report Development



June

once sample data is received from lab

Collect final field samples and send to lab

• Sent 83 samples to lab on 30 June.

Data analysis and report development

- Validate analytical data from 3rd quarter (2-3 weeks).
- Establish data trend by comparing data against 2017-18 collected from VAS with the permanent wells installed in 2018.
- Review transducer data collected to identify potential changes in how GW flows throughout the year.
- Update the GW model with data from the newly installed MWs.
- Check if the current capture zone is preventing the PFOS/PFOA migration down-gradient into residential DWs.
- Summarize the findings and analytical results.
- Present conclusions and recommendations.



Wurtsmith RAB ESI Report Development



5-7 weeks

31 Dec. 2019

60-90 days

USAF reviews draft report and submits comments

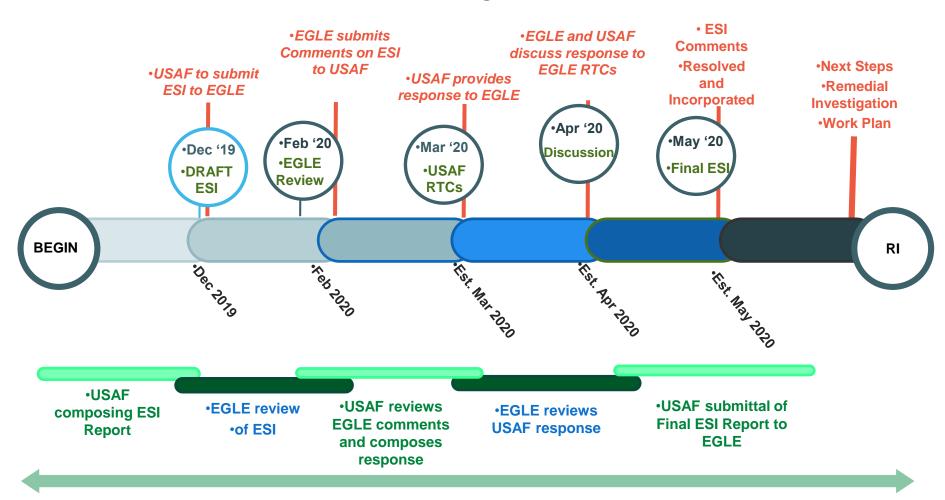
- Draft submittal expected by mid October.
- USAF typically needs 3-4 weeks for review.
- Contractor has 20 days to respond to comments.
- Five days to finalize once USAF accepts changes.

USAF submits draft report to EGLE

EGLE reviews draft report and provides comments

- EGLE technical review
- EGLE project management review
- EGLE management

•EGLE Projected Timeline -Former WAFB PFAS ESI



•EGLE continues to coordinate with USAF on site issues.

•Dates are less certain the further projected into the future.



Wurtsmith RAB ESI: Next Steps



ESIOutcomes

Three potential outcomes following final ESI report:

- No further action
- 2. Additional interim DW response actions needed
- 3. Proceed to RI (already committed for Wurtsmith)



Prioritize Sites Prioritize BRAC bases requiring RI based on relative risk and establishes sequencing.



Begin RI



Wurtsmith RAB USAF-wide RI Prioritization



Prioritize Sites



DoD Approach: Evaluate the relative risk to human health posed by the chemical contamination present at a site.





Data Assembly Evaluation Factors

Relative Risk

Begin RI









Hazard
----Migration
Pathway

Contaminant

Human Receptor High

Med

Low

Attachment 2





True

- USAF shifted funds planned for other IRP projects to fund DW response actions & sampling
- IRP funds planned for other projects have been diverted to Wurtsmith for PFOS/PFOA response

False

- Pease received "earmarked" funds for PFOS/PFOA cleanup
- USAF diverted money from the Wurtsmith Landfill 30/31 site









Wurtsmith RAB Transducer Study



Objective

Gain an understanding of the movement of PFOS/PFOA in GW by monitoring the change of the water table over time.

Transducers, or Level Loggers, measure the total water pressure over a set period of time.

Both EGLE and USAF conducted studies and are sharing data.



Joint approach provides:

- Complete data set and picture of GW flow directions.
- QA/QC through peer review



Wurtsmith RAB Transducer Study





EGLE collected water elevation information from transducers placed in Monitoring Wells along Van Etten Lake.

- Data and findings are still being analyzed and compiled into report.
- Preliminary Findings: data supports previous studies completed by the U.S. Geological Survey.





Wurtsmith RAB Transducer Study





USAF collected water elevation information from transducers installed in 16 MWs.



- Data will be reported in ESI and incorporated in updates to conceptual site model (one component).
- Data indicates GW flows toward Van Etten Lake from both west and east side of the lake; supports previous USGS studies.















MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Groundwater Surface Water Interface – Van Etten Creek and Au Sable River

Matt Baltusis

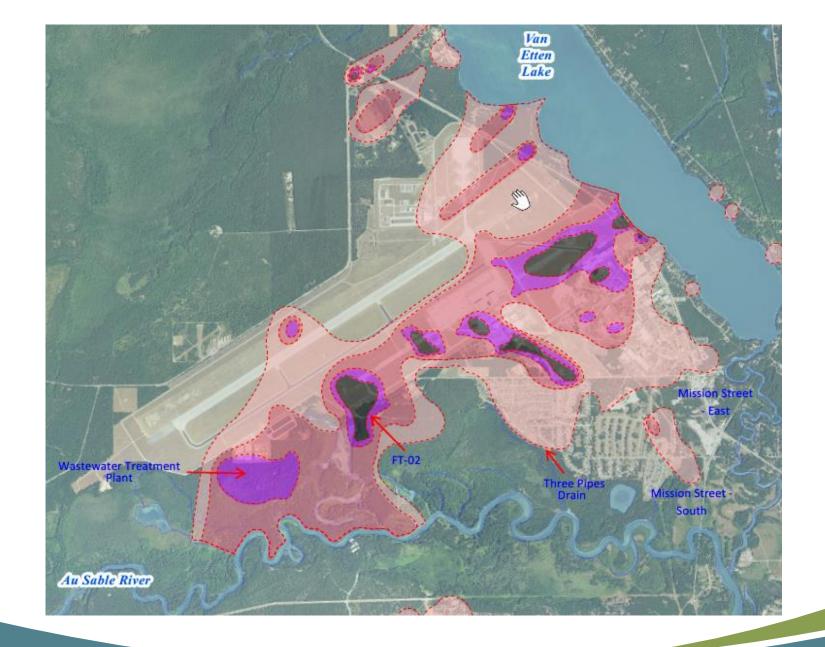
Remediation and Redevelopment

517-897-1748 | baltusism@michigan.gov

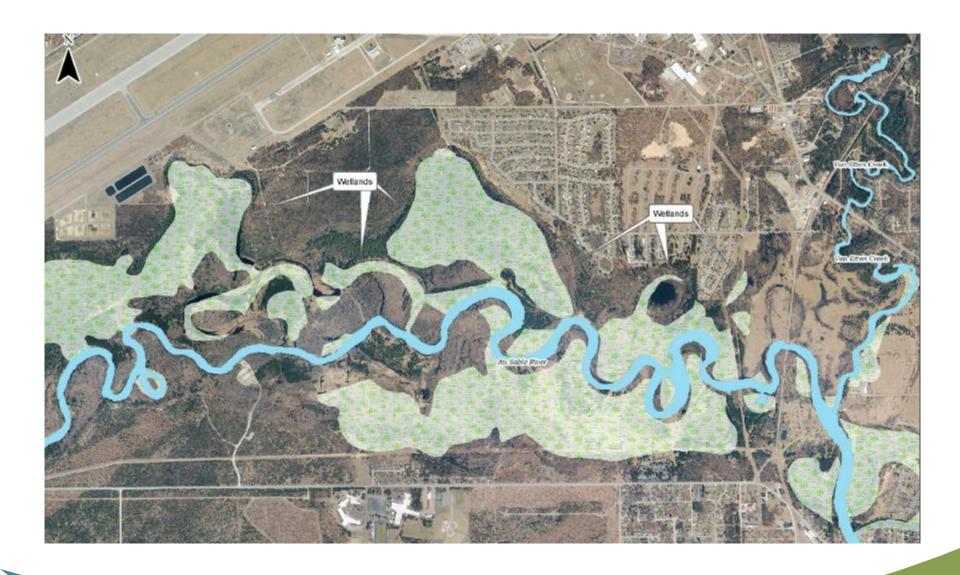


Groundwater Surface Water Interface

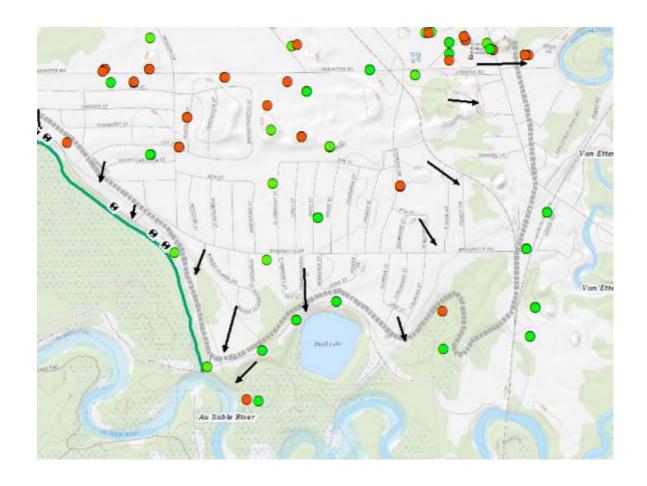
- What is GSI?
 - Groundwater Surface Water Interface that is the location at which groundwater enters a surface water body.





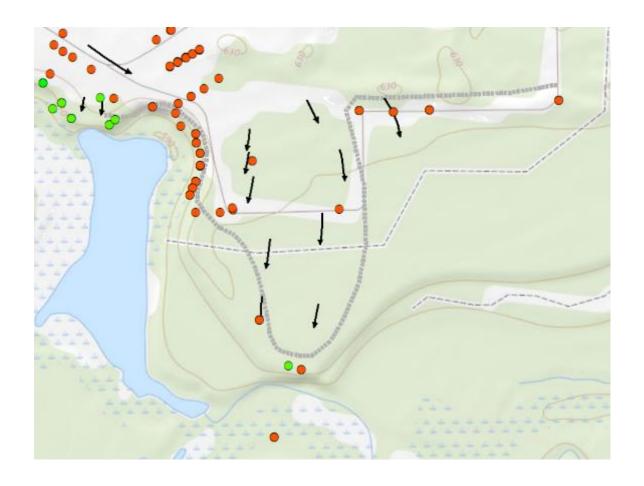






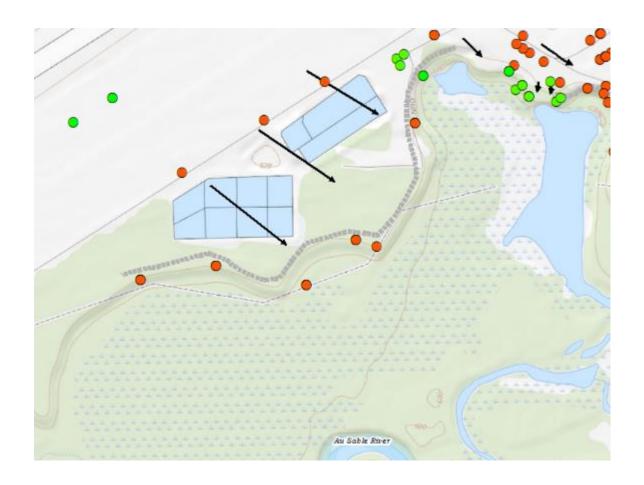
Mission Street and Three Pipes Drain

PFOS Concentration Above (Red) and Below (Green) GSI in Groundwater



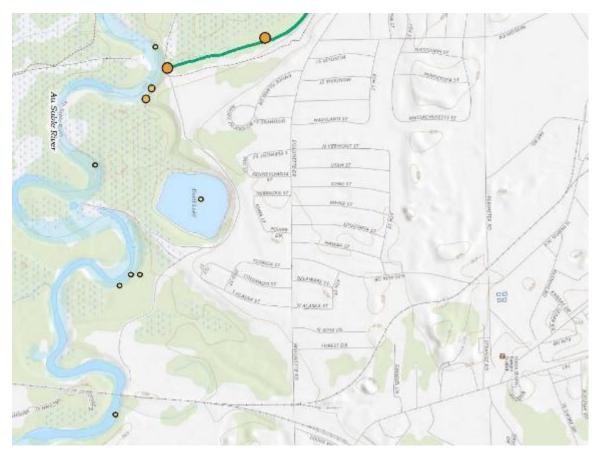
FT-02 – Fire Training Area

PFOS Concentration Above (Red) and Below (Green) GSI in Groundwater



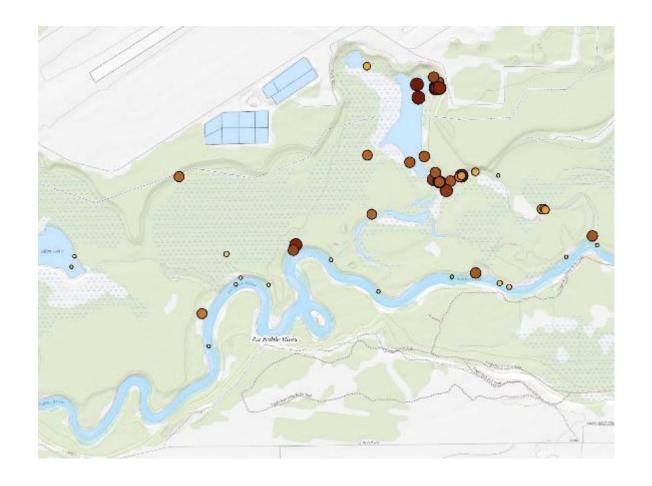
Wastewater Treatment Plant

PFOS Concentration Above (Red) and Below (Green) GSI in Groundwater



Surface Water Samples – Van Etten Creek and Au Sable River

PFOS Concentration in Surface Water



Surface Water Samples – Au Sable River

PFOS Concentration in Surface Water

Michigan Department of **Environment, Great Lakes, and Energy**

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Wurtsmith RAB RAB Business



Operating Procedures

Where we're at, next steps

Community Membership

Primary	Alternates	New Applicants
Daniel Stock *	Vacant	David Winn
Robert Tasior	Vacant	Rex Vaughn
Joe Maxwell	Vacant	Greg Schulz
William Gaines	Vacant	Jeff Gottlieb
Ryan Mertz	Vacant	Scott Lingo
Catherine Larive *	Vacant	Mark Henry
Arnie Leriche	Vacant	
Cathy Wusterbarth	Martha Gottlieb	
Jerry Schmidt	James Davis	

Community Co-Chair Election

Annual vote at next RAB meeting.











Public Comment Period

- O1 Sign in and write your name on a card
- **O2** Deliver your comments from the front of the room
- **O3** Three minute time limit
- RAB members will confer after your comment to see if a follow-up action is needed





Conclusion & Adjournment





Wurtsmith PFOS-PFOA Tracker



Area	Site/Area Background	CERCLA Investigation				Interim Response Actions		
AFFF Release Area #	Historic use of area; why it was identified as a potential AFFF release site	Site Inspection	DW Pathway *Based on SI	Expanded Site Insepction	Remedial Investigation/ Feasibility Study	If applicable, interim response measures in place to protect DW		
1	Base Operation Apron: aircraft fire suppression equipment was reportedly washed. The area includes fire station buildings 16, 20, and 45 where fire trucks were washed inside and outside of the buildings.	Complete	Actionable DW Pathway	Yes	Upcoming	The majority of the AFFF Area 1 groundwater is within the central treatment plant capture zone and the effluent is discharged to Van Etten Creek via an underground storm sewer system that runs to Outfall 007A.		
2	The Maintenance Hangar consists of Building 5063, Building 5084, the Benzene Pump and Treat System Plant and and Mission Pump and Treat System Plant . Building 5063 is a hangar where AFFF was released during the testing of a fire suppression system. Building 5084 contained a 5,000-gallon AFFF above-ground storage tank (AST) for use in the Building 5063 fire suppression system.	Complete	DW Pathway	Yes	Upcoming	ESI is evaluating if/ how much Area #2 GW is captured by Mission drive.		
3*	WP-04: Wastewater containing AFFF from numerous Installation facilities was transported to the WWTP via the sanitary sewer system for treatment. Area 3 is concluded to not be source area and just downgradient from uncaptured portion of comingled Area 1 and Area 2 plumes	Complete	DW Pathway	No	TBD			
4	Alert Apron: Suspected AFFF application to numerous fuel spills.	Complete	DW Pathway	Yes	Upcoming			
5	Defense Reutilization and Marketing Office(DRMO): Suspected AFFF drums stored at the DRMO.	Complete	Incomplete DW Pathway	No	Upcoming			
6	Integrated Maintenance Bldg 5306 (SS-59) contained a 2,000-gallon AFFF AST from which an estimated 500 gallons of AFFF was released. Surface water around the building flows into catch basins and culverts that discharge into a lagoon.	Complete	DW Pathway	Yes	Upcoming			
7	Bldgs 5091 & 5092: Building 5091 was a fire station where AFFF was stored. Building 5092 was a vehicle operation building which contained two fiberglass 10,000-galllon AFFF underground storage tanks (USTs).	Complete	Incomplete DW Pathway	Yes	Upcoming			
8	KC-135 Crash Site: Oct. 11, 1988, a KC-135 Stratotanker carrying 16 people crashed during descent on the runway. Base firefighters used AFFF to extinguish the fire; six crewmembers were killed, 10 passengers survived.	Complete	Incomplete DW Pathway	No	Upcoming	FT-02 GAC PTS is downgradient from Area 8 and subsequently captures and treats GW from that site.		
9	WWTP Drying Bed: Wastewater containing AFFF from numerous base facilities was transported to the WWTP via the sanitary sewer system for treatment. Sludge removed from the WWTP, which may contain residual PFAS, was spread in two areas centrally located north and south of the runway.	Complete	Incomplete DW Pathway	No	Upcoming			
10	Reported A-6 plane crash no records of crash.	No Further Action	N/A	N/A	No Further Action	N/A		

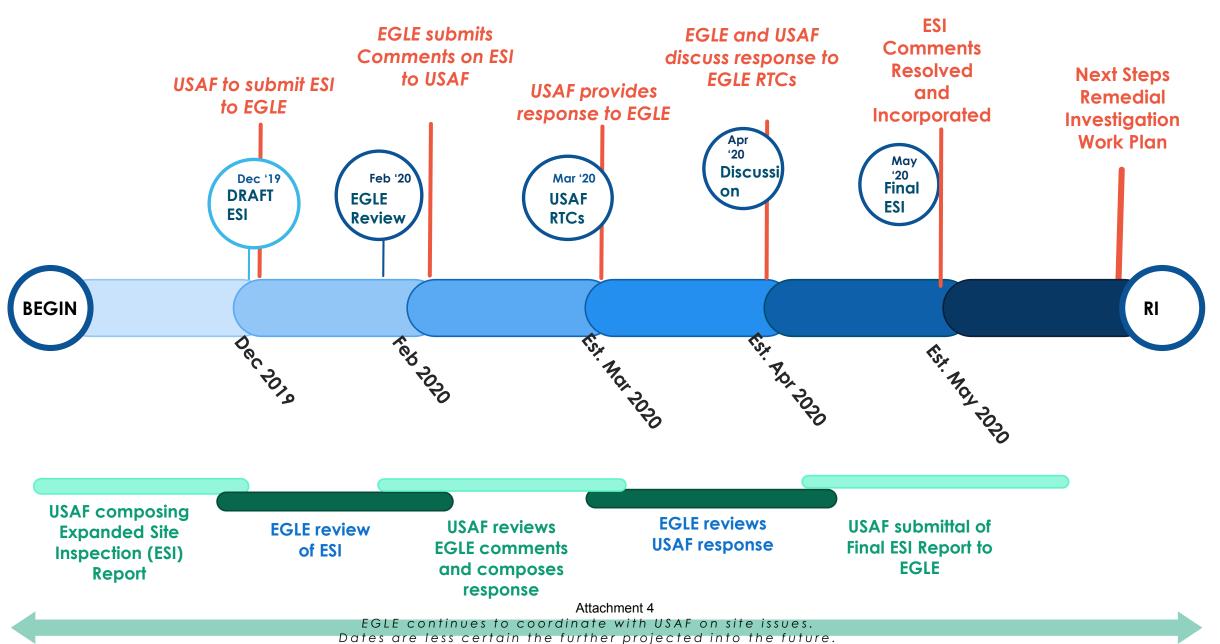


Wurtsmith PFOS-PFOA Tracker



Area	Site/Area Background	CERCLA Investigation				Interim Response Actions	
AFFF Release Area #	Historic use of area; why it was identified as a potential AFFF release site	Site Inspection	DW Pathway *Based on SI	Expanded Site Insepction	Remedial Investigation/ Feasibility Study	If applicable, interim response measures in place to protect DW	
11	Waste Water Treatment Plant: (WWTP Aeration Lagoons, WWTP Seepage Lagoons, WWTP Sludge Disposal Area): Wastewater containing AFFF from numerous base facilities was transported to the WWTP via the sanitary sewer system for treatment.	Complete	Incomplete DW Pathway	No	Upcoming		
12	Former Fire Training Area FT-02 and Clarks Marsh: FT-02 hosted weekly fire training exercises while in operation at Wurtsmith from 1958-1991. Training took place using a 115ft diameter pit with six-inch thick reinforced concrete and underlain by polyethylene sheeting. Area #12 was included in ESI to further understand the width of the plume where it leaves the base upgradient of Clarks Marsh.	Complete	Incomplete DW Pathway	Yes	Upcoming	FT-02 Granular Activited Carbon Pump and Treat System	
13	AFFF Area 13 consists of the sanitary sewer piping. Wastewater containing AFFF from numerous base facilities was transported to the wastewater treatment plant (WWTP) via the sanitary sewer system for treatment. In addition, impacted groundwater downgradient flowed across/along the sanitary sewer piping. Area #2 is the source of contamination for detections in this area.	Complete	N/A	No	TBD		
14	Storm Sewer Line: AFFF releases and truck washing water were discharged into storm sewers; PFAS impacted groundwater infiltrates into the Three Pipes drainage ditch. The effluent from the three pump stations (Arrow, Benzene and Mission - two with active treatment) discharge into the storm water sewer line.	Complete	N/A	No	Upcoming	Central Treatment System (Mission Ion-Exchange upcoming)	
15	Site SS-71: consists of a septic field associated with Building 5045. PFAS were detected in groundwater samples collected downgradient from SS-71.	Complete	DW Pathway	Yes	Upcoming		
16	Area 16 -Sites SP-8 and SP-10 area areas located along the runway where AFFF was used to extinguish fuel spills.	Complete	Incomplete DW Pathway	No	No Further Action		
17	landfill 30/31 was a landfill that received domestic, industrial and hard-fill construction wastes from Installation operations. PFOS/PFOA from contaminated material and/or containers buried at LF30/31 has potentially migrated into groundwater.	Complete	Incomplete DW Pathway	No	Upcoming		

EGLE Projected Timeline - Former WAFB PFAS ESI



Air Force Installation and Mission Support Center

RAB Comment Form

Former Wurtsmith Air Force Base RAB

Wednesday, September 11, 2019

Thank you for serving on the former Wurtsmith AFB RAB. Your service and participation is a key component in the restoration process. Your feedback will help us improve future RAB orientations, training sessions and meetings. Please take a moment to complete this short comment form. Leave completed forms at your seat at the end of the meeting or return to a member of AFIMSC Public Affairs. Thank you!



AIR FORCE IMSC

Below is a guide for rating the effectiveness of the RAB meeting. Check the corresponding box that best describes your feelings about each statement listed:

MEETING EVALUATION					
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Agenda content was comprehensive and relevant.					
Presenters were effective.					
Satisfied with meeting venue and set-up.					
Overall, the meeting was worthwhile.					
OVERALL FEEDBACK					
What is the idea/topic you heard during the meeting that you found the most valuable and/or would like to discuss more?					

OVERALL FEEDBACK	
STRENGTHS What did you like best about the meeting?	
IMPROVEMENTS	
What did you like least about the meeting?	
What topics would you like to see discussed at future RAB meetings or training sessions?	
What specific topics do you think would be helpful to have training sessions on?	
ADDITIONAL COMMENTS	
Please leave any additional questions here regarding RAB processes and rules and/or the ongoing restoration activities at Wurtsmith.	