RESTORATION ADVISORY BOARD MINUTES
January 14, 2020

The Restoration Advisory Board (RAB) meeting was called to order by Elyn Holton-Dean at 9:00 a.m. on 14 January 2020 at the West Burlington City Hall.

Minutes Review

Vaughn Moore had one correction to the minutes from October 2019. Page 10 had one correction and page 11 had a misprint on the paragraph about silver and gold. The only thing at Line 3A would have been silver. After the meeting the October 2019 minutes were corrected and posted to the Admin Record.

Now open for public comment. There were none.

Agenda Review

The January 2020 agenda was accepted as written.

There were no further questions.

Environmental Services Update

Jeff Morrison of CH2M HILL, now Jacobs, then presented an update on the Environmental Services Contract. Under the CERCLA program the objective of the Remedial Investigation (RI) is to determine the nature and extent of contamination, to update the conceptual site model, and to evaluate risk. 35 sites or areas were included in the approved Quality Assurance Project Plans (QAPPs) for Operable Unit 6 (OU-6). Jeff M. brought his colleague Jeff Gamlin to discuss the Bioreactor project.

Currently we are working on an ecological risk assessment interim deliverable with a focus on receptors (plants and animals potentially exposed). We also prepared and submitted two background concentration documents for use in the RI. The groundwater tech memo is with EPA and we are addressing their comments. The Surface Water/Sediment (SW/SED) tech memo is with Army under their review. We also prepared an Interim Health Deliverable for Line 2.

Fieldwork conducted in December 2019:

- Conducted additional groundwater sampling at West Burn Pads (WBP), Line 9.
- Conducted well re-development at WBP and completed re-survey at 13 sites (approx. 60 wells).
- Attempted to measure staff gauges as part of the watershed evaluation.
- Began seep sampling at Demolition Area (DA).

Jeff M. then showed the pending RI fieldwork slide and the remaining work includes:

- Additional temporary well installation and groundwater sampling at Line 3A Pond.
- Overburden and bedrock well installation and sampling at various sites:
    - Demolition Area/Deactivation Furnace (DA/DF)
    - North Burn Pad (NBP)
    - West Burn Pad (WBP)

  - East Burn Pad (EBP)
  - Contaminated Clothing Laundry (CCL)
- Temporary well abandonment at Line 3A
- Ground penetrating radar survey at the DF
- Well re-development at DA
- OU-3 data gap investigation at offsite residents

Jeff M. showed an updated map with stars showing completed sites and mentioned that some of this work was on hold pending funding, while other sites (OU-3) were delayed due to access issues with off-site landowners. The map with stars show sites that have been completed, those that are partially completed, and the yellow stars are for the sites we haven't started yet.

Jeff M. then discussed some other future work that is pending. A Site Investigation (SI) is planned for emerging contaminants called per-fluoroalkyl substances (PFAS) for the former Fire Department, Fire Training Pit, and Trenches at OU-4. The Preliminary Assessment (PA) is to identify sites where it could possibly be used or released, and the Site Inspection (SI) would look at the presence and absence of these compounds. The plan is to get started on a SI work plan since it was recently funded, but we are waiting for the PA conclusions.

The investigation at the Incendiary Disposal Area (InDA) site is still lagging others in the RI program due to access issues; which is why it is a red star on the map. Jen Busard added that there is a temporary crossing that has been put in until bridge construction begins in Spring 2020.

Jeff M. shared an update on the Mathes Lake SI:

- The final SI report was submitted and accepted by EPA in December 2019.
- Based on the results of the SI, which were presented at the October RAB meeting, no contamination is currently present in the surface water or sediment within Mathes Lake.
- Conclusion: No Further Action is recommended at Mathes Lake.

Vaughn shared some information about Building 1-13, that there was a hole in the concrete where janitors dumped all their mop water into.

Vaughn also asked about Line 6, 7, and 9 areas. Were there any soil removal actions there? Line 9 was coated with Freon. Line 6 was the grenade line and Dean thinks we did a removal there. Steve Bellrichard said there was no soil removal action at Line 7, but there was at Line 6. Jeff M. took an action item to look at any removal action in the sumps for Freon. Will we have to dig up the soil in that site?

Steve reiterated that there was no soil removal action at Line 7. At Line 6 the building was in the way – but there will be some additional sampling. The Central Test Area

(CTA) did have a soil removal action. Steve added that Line 5A/5B were sampled by Tetratech, but buildings were still up at the time (now removed). Vaughn said they found tetryl at Lines 5A/5B.

Bioreactor Treatability Study

Jeff Gamlin, also of Jacobs, then provided a Bioreactor Treatability Study update. Jacobs is collaborating with Engineering Research & Development Center (ERDC) to evaluate the RDX treatment system for the South Tributary to Brush Creek. He explained the recent activities and provided an update on the Bioreactor Treatability Study. Heather Smith is planning to come to the installation tomorrow; but field conditions have slowed construction down. The plan was to set up the Treatability Study before the cold weather arrived, but we are dealing with some issues that arose from that.

- Submitted 60% Design Drawings/Specs to EPA and the Iowa Department of Natural Resources (IDNR) in August.
- EPA and IDNR reviewed the Treatment Plan for pilot study.
- Construction started in early October 2019 and resumed in December 2019.
- Phase 1 Drum-scale system to be completed this week.

The full-scale system is being installed. Still evaluating the field conditions of what to put in the reactor vessels. Heather has been doing a lot of work in the lab and the results are extremely promising. The biochar mix and biochar with iron are the two leading candidates.

Jeff G. used the analogy of a Brita filter, but unlike that media that must be disposed of, biochar can be regenerated. We won't have to shut off the tank, but we can regenerate the biochar. In theory, it is a more sustainable solution than just using carbon.

Tomorrow we will finish the drum-scale system with some mixing in the field with a two-step process that Heather has worked up. Phase 1 testing is to make sure the media is correct and to decide what to put in the 1,500 tank. There is another 1,500-gal tank at the other end that will knock out any residual dissolved iron. There are four different 500-gal tanks with the biochar.

Jeff G. showed a series of photos showing the construction in December. He explained that the tanks are buried for frost issues and the stickups in the photos are for access. The last thing we need to do is install the weir. Last week we did a test running water through both systems, and this was successful.

Path Forward:

- Expect to finish construction this week.
- Phase 1 scheduled to run in February 2020.
- Phase 2 scheduled for April to June 2020.

Vaughn asked where it is exactly located? Jeff G. answered it is on Line 1 and Randy Doyle clarified that it is by the access road. Vaughn asked if it was the tributary that runs

dry or if it is the one runs constantly. Jeff G. said the south tributary is the one that runs constantly and had higher RDX concentrations than the north one.

Vaughn asked what the iron was for? Jeff G. explained that the iron powder coats the biochar which helps facilitate the RDX to biodegrade. The iron helps the bacteria.

Mark Hagerla asked if this was the only location on the plant where treatment is being done? Jeff G. explained it is a pilot study, and if successful it could be used for other locations at IAAAP as we look at a feasibility study for treatment.

Bruce Workman asked how the water would be diverted into the system, and Jeff G. explained that a diversion weir will hold water in impoundment and then supply water. The biochar is not exposed to sunlight or weather. There are tanks that have valves for routing the flow around the system.

Vaughn asked about the Line 1 impoundment? Aaron replied that we actively treat the surface water before discharging to Brush Creek.

Steve asked Jeff G. when we could have data to present. Jeff G. said it depends on if we can work through the cold weather and begin running tests in February; if so, we might have some data in March. In the meantime, Heather has been doing some additional lab-based work. She thinks we will have a hard time seeing breakthrough of RDX. She hopes to develop a breakthrough curve, but we might not see that in the testing. Steve recommended having a Bioreactor update at the July 2020 RAB meeting.

There were no further questions.

OU-3 update

Darlene Abbott of Aerostar presented an updated version of OU-3 slides with the latest annual groundwater and surface water data and evaluation. Some of the slides that were previously presented included a history of the off-post plume, the role of the regulatory agencies, a flow chart showing the Superfund process, and some analogies that show just how small parts per million (ppm) and parts per billion (ppb) truly are. Darlene showed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process and the explained that the where Aerostar and Jacobs are currently at for OU-3.

Darlene then discussed how frequently OU-3 is being monitored and reported on. RDX is the primary contaminant of concern (COC), but HMX is within the footprint. She indicated this presentation covers the OU-3 annual surface water results from the last report through March 2019 to align with the groundwater sampling event.

OU-3 Surface Water Conclusions:

- RDX surface water concentrations typically decrease with distance downstream from the facility boundary, but are regularly above the health advisory level (HAL) of 2 µg/L.
- While there is a relatively high statistical confidence (84.7%, 97.3%, 99.0%) in decreasing RDX trends for all three surface water sampling locations for the spring sampling timeframes, no trends can be established for the fall timeframe.

Darlene showed the latest surface water results that were later than usual throughout the month of March 2019 due to contracting issues. Concentrations decreased the farther you got from the plant boundary.

The path forward for OU-3 surface water is to continue surface water sampling at the three Brush Creek locations (BC-OFF-1, BC-OFF-3, and BC-OFF-6) until the RDX surface water concentrations are below the HAL of 2 µg/L or until other RDX criteria are established and met.

Darlene showed the latest groundwater sampling results:

- >50 µg/L RDX concentration plume core has decreased since the last fiscal year.
- Despite the lower RDX concentration in MW-309 during the FY2019 sampling event, the concentration trend for MW-309 is still increasing with 99.7% confidence.

Regarding off-post groundwater, two replacement monitoring wells (MW-408R and MW-136R) were installed to confirm the eastern boundary RDX levels. Due to flooding in February 2019, only MW-136R could be sampled. The analytical RDX level for MW-136R was non-detect. Although MW-408R could not be sampled in February 2019, the 2018 RDX level was below the HAL at 0.39 µg/L and the HAL for RDX is 2 ppb.

For groundwater, in the past the maps showed a little red hotspot. This year we don't have that, and we can conclude that we are below the 50 ppb. However, MW-309 is still showing an increasing trend with 99% confidence. Darlene also reminded the RAB that there was a lot of water last year with flooding (showed a photo of one impacted well location under water). We even saw some artesian conditions with water spouting out of the wells which isn't typical.

Two replacement wells were put in MW-408R and MW-136R. She showed the dashed line that pinches in the boundary of the plume based on those two new wells – smaller RDX plume footprint and more confidence. This year's data is qualified by the amount of precipitation received in Iowa.

Darlene then presented the Path Forward for OU3:

- A RI is currently being conducted at OU-3 to determine the nature and extent of RDX impacts.
- Results of the RI will be summarized in a RI report.
- Once the RI is complete, the Remedial Design (RD) can be re-evaluated and implemented.
- Groundwater and surface water will continue to be monitored until the concentrations are below the HAL or until other RDX criteria are established and met.

Precipitation data has been collected. Darlene wants to discuss data with Jacobs to corroborate/collaborate.

Vaughn asked about the location at fence – station staging have been washed out. Floodplain area where there was a dam. Scoured out the front of the bridge all the way

to the bluff. How much is in the ground after saturation? He thinks that is a problem

Mark asked if there is any treatment going on or are we waiting for nature to take its course? Darlene said it wasn't effective and that is why we turned it back on the data gap part. Steve clarified the treatment in the OU-3 Record of Decision (ROD) was for above 50 ppb, but have to monitor to 2 ppb.

Bruce clarified the order of stations is 1, 6, and 3 on the map (not sequential).

There were no further questions.

Building Demolition Status

Randy Doyle provided an update on the Building Demolition program. They are currently at Line 3. All phases of the program are funded. Phases 1-4 are complete, Phases 5-8 are ongoing, and Phase 9 is being planned. 309 structures have come down during demo of old facilities and approximately 586,000 square feet.

Numbers have stayed roughly the same with recent holidays and work at Building 1-40. The hole is about 90% filled in. The layer of plastic is in for future sampling. A surprise we found was a drainage system that was full of water. We are now in Building 1-07.

Randy provided a project update in regards to recycling:

- Over 81,000 Ton of Concrete crushed for re-use. "Mount Doyle" is now gone.
- Over 2,500 Ton of metal recycled.
- Realizing an 85% diversion rate of solid waste (concrete, recyclable items). Stockpiling some sand for future projects.

With regards to environmental stewardship:

- 2,600 Ton of Asbestos abated (in ramps out there).
- 40 Ton PCB Contaminated debris abated.
- Proper disposal of other regulated material (lead, ballasts, Hazardous Material).

Randy shared a series of photos:

- Line 800 is 98% complete.
- Line 6 is complete.
- Line 5 is complete. New solid waste facility is going to go there. Outside of explosive arcs.
- Line 8 is complete.
- Line 1 is 75% complete.
- Line 3 is 40% complete. Just have the melt to do. 3-01 is going to have a close burn process. Going to flash it with a vendor's process that came in yesterday, had lightly contaminated equipment.

Vaughn asked about the tunnel at the road. Is it blocked off? Tunnel to 1-100. Randy said they will put a concrete wall there instead since road is fairly new and it can be addressed at a later time.

The 12,000-pound hammer by Bhate is getting through the concrete.

Jen commented that the picture in the corner of the last photo slide makes 1-40 look small and it is deceiving because there was over 100,000 sq ft under the ground there.

Mark asked about any smoke from burns. Randy clarified we are not doing any open burns. We are using an innovative technology to mitigate the contamination without emissions. The current RCRA permit will allow for this.

There were no further questions.

FUSRAP Update

Mike Kessler provided an update on FUSRAP activities. He started off by reminding the group what the acronym FUSRAP stands for: Formerly Utilized Sites Remedial Action Program to deal with former atomic energy commission radioactive waste. Assigned to Department of Energy (DOE) and then transferred to U.S. Army Corps of Engineers (USACE). Two OUs were assigned: OU-1 primarily explosives contaminated soils in Line 1 and West Burn Pads (WBP), while OU-8 is for predominantly looking for low level radiation.

West Burn Pad South (WBPS) of the road Remedial Action Completion Report (RACR) is currently in review by stakeholders. WBPS was remediated in 2010 and now we working on the RACR. That document is in the final stages and EPA has provided comments.

Work at Line 1 is progressing. Mike showed some photos of Building 1-40 including the large floor slab. Explained that they used a hand auger to sample, and they are still awaiting the results. There are six sites per the OU-8 ROD. Mike presented the Firing Sites 12 (FS-12) survey status from last June, September, and then December on a series of slides to show progress. In the north, all eight survey units are in the verification step. We just finished sampling four of them.

In Area H, they have completed mechanical remediation and backfill/seeded five survey units (SUs) in Area G. Mike added that he did a site walk and saw that there was a nice smooth, snow-covered hill out there as of yesterday.

Quarter 1 2020 activities completed:

- OU-1
    - WBPS RACR – Regulator review of REV B and response to comments.
    - Development of Pre-Design Investigation Work Plan for ‘bounding’ contamination at additional Line 1 buildings.
    - Collected additional soil samples at Building 1-40.
- OU-8
    - Excavation and processing of soils from Area H.
    - Restoration of Areas G and H.

- Transportation and Disposal Campaign.
- Line 1 Structures RACR – Internal FUSRAP review of REV A.
- Collected the fall CY 2019 EMDAR samples.

Quarter 2 2020 activities planned:

- OU-1
  - Finalize WBPS RACR.
  - Develop building-specific addendums for sampling at additional Line 1 buildings. Collect additional soil samples.
  - Continue development of scope of work (SOW) for Line 1 remediation contract modification.
- OU-8
  - Complete tree clearing necessary to support 2020 and 2021 excavation and processing.
  - Complete verification of Northern SUs that were hand remediated in 2019.
  - Distribute OU-8 Line 1 Structures RACR Rev B for review.

Mike showed a series of photos of the T&D campaign, he added that it's a good news story. Mike commended on the support from American Ordnance (AO), the rail support from the base, and the demo program's contribution for rock that gets used. We have used the facility at M Yard for several years now, we recently did some repairs on the wall at M Yard. We started using dump trucks (see photos), and when rail cars get ordered several months in advance and when they arrive we inspect them for leaks and then line them with poly (see photo).

We use an excavator with a scale to measure the weight, and there is an air monitoring stage at that step. On both sides of the rail there is protection with poly. After the rail cars are loaded, the lids are put on.

Mike then shared that FUSRAP met their 2020 goals and he presented a slide with 2020 goals:

- Ship 1,750 CY of >RG material.
- Process 16,400 CY of material.
- Stockpile 1,500 CY for future shipping.
- 'Release' 30 Survey Units.
- Complete OU-1 WBPS RACR.
- Complete OU-8 Line 1 Structures RACR.
- Complete OU-8 Firing Sites (Other than FS-12) RACR.

Mike pointed out there is a new office location and address in St. Louis on his very last slide.

There were no further questions.

Old Business – Action Items from Last Meeting

Jen reported on the history of the Mathes Lake drinking water switch. After an installation assessment was done by the Army, a report from 1980 by the Army Center for Health Promotion and Preventive Medicine (CHPPM) (known as Army Public Health Center [APHC] now) indicated that silting of the water was the reason for the switch. Mark asked if in Jen's research she found a letter about the contaminated lake. Zaynab Murray thinks the plant switched in 1977 (Mark thought it was earlier). Randy asked if there is any data to back this and not just a letter from the plant manager.

Vaughn said a lot of things drained into Mathes Lake back in the day. Not just radioactivity, but other things and it was the main drinking supply. He added that not one word was passed on to the employees of the plant or the residents in Middletown. Roy Holmberg was the one who wrote the letter.

Hans Trousil asked about the status of the Technical Assistance for Public Participation (TAPP) program. Zaynab said the application was approved and the TAPP will now be contracted.

Julie Solinski had previously asked about the demo of the pipelines. Randy said they will be sampled as part of the ECA to determine how far to take out lines. No predesigned bounds for removal.

Jen reported on the status of the demo sampling contract. The Performance Work Statement (PWS) was sent to AO and is due in a couple of days. Jen has a list of buildings from Randy from the Environmental Assessment and she has columns for FUSRAP vs Installation Restoration Program (IRP) by building. Julie asked a question about what determines which buildings need further investigation. Jen explained that Randy's list is part of that, along with the former use of the building, historical sample results and any soil removals near the building. Zaynab added there will be an EPA approved workplan for sites to be investigated. Randy said he hopes AO goes through Bhate since they know these locations. The requirement to sample beneath the foundation is part of the PWS.

Julie made an editorial comment about PFAS – the current movie Dark Waters is about this topic.

Mark asked about the fenced in area in the east part of the plant. He said the InDA is a MMRP site, and he doesn't think there has been a plan for that area. Mark was told that it is a former dump site for AEC. So why is the InDA still fenced in? Steve said that the InDA is part of OU-5 which has a ROD and the ROD states why it is fenced in.

Steve clarified that the Army didn't choose to fence it off. The CERCLA process resulted in that option. Steve suggested to Mark that he read the FS for OU-5 to better understand the process and decision made in the past. There is a Five-Year Review to

evaluate remedy and make sure it is still protective.

Danny O'Connor cited an example at Ft. Riley where it is similar and very difficult to get all the pieces of metal debris and munitions. Everything on the surface was removed – it was the subsurface hazard that necessitated the land use controls (fences).

Jen reminded the group that groundwater is going to be sampled at the InDA, and that there are two sites to be cleaned up under Military Munitions Response Program (MMRP) which are the CTA and Line 6. The hope is to be able to remove fences there after the remediation.

Mark said in the past it has been discussed that there will be a bypass of Highway 61 and he is concerned about the future. Aaron Steele clarified that he is way ahead of the Army and there aren't plans to sell it off yet. Hans chimed in that he will fight tooth and nail to fight a highway going that way. More economical to improve the current Highway 61 and not have it become a ghost town.

Zaynab said the Five-Year Review is just beginning. Julie suggested that the next RAB meeting should have a slide that has Five-Year Review information. Zaynab added that Dawson is the contractor doing the Five-Year Review.

Jen stated that the Operational Range Assessment is currently underway. These were conducted previously (and most recently in 2012), and a draft is forthcoming in November.

Action Items for Next Meeting

- 1) Building 1-40 sampling results.
- 2) What is a Five-Year Review and what will it do.
- 3) Check sampling data for: Tetrol at Line 5A/5B, contaminants at (mop hole). Building 1-13 and was there a soil removal at Line 9 (sump pit)?

Next meeting will be April 21 at 9 a.m.

Meeting adjourned at 11:30 a.m.

Original signed by:	Original signed by:	Original signed by:
Sarah Brockway	Elyn Holton-Dean	Jen Busard
Secretary	Community Co-Chair	Army Co-Chair

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January 14, 2020

Exhibits: 1 Attendees
2 Agenda
3 Remedial Investigation Update
4 Building Demolition Status

Exhibit 1

GOVERNMENT MEMBERS PRESENT (4)
LTC Eric J. Schilling
Dan Cook
Jen Busard
Danny O'Connor

RAB MEMBERS PRESENT (8)
Vaughn Moore
Robert Haines
Dean Vickstrom
Hans Trousil
Elyn Holton-Dean
Julie Solinski
Bruce Workman
Mark Hagerla

PUBLIC PRESENT (19)
Dean Johnson
Steven Bellrichard
Jeff Morrison
Mike Kessler
Sarah Brockway
Aaron Steele
Rachel Williams
Jeff Gamlin
Randy Doyle
Penny Vacell
Gifford Haddock
Scott Smith
Kathy Christy
Brooke Thye
Joe Krenzelok
David Rose
Zaynab Murray
Darlene Abbott
Jessica Louthan

Total in attendance: 27