Joint Base McGuire-Dix-Lakehurst (JB MDL)
Restoration Advisory Board (RAB) Final Meeting Minutes
Meeting No. 65 – 20 August 2020

SUBJECT: Restoration Advisory Board (RAB) Meeting No. 65 – Meeting Minutes

1) Place: Virtual Meeting via MS Teams

2) Date/Time: Thursday, 20 August 2020; 6:30 PM

3) Co-Chairs: Mr. Christopher Archer, Deputy Base Civil Engineer, JB MDL
Mr. Michael Tamn, Resident, Southampton Township, New Jersey

4) Attendees:

Mr. Tom Besselman	RAB Community Member
Mr. Frank Storm	RAB Community Member
Ms. Branwen Ellis	NJ Pinelands Commission, RAB Member
Mr. Andrew Gold	Pinelands Preservation Alliance, RAB Member
Mr. Alex Carnivale	Community Member
Ms. Carla Struble	US Environmental Protection Agency, Region II (EPA)
Mr. Doug Pocze	US Environmental Protection Agency, Region II (EPA)
Mr. Bill Friedmann	US Environmental Protection Agency, Region II (EPA)
Mr. Haiyesh Shah	NJ Department of Environmental Protection (NJDEP)
Ms. Colleen Lane	NJ Department of Environmental Protection (NJDEP)
Mr. Michael Figura	JB MDL, AFCEC/CZO, Environmental Restoration Program
Mr. Curt Frye	JB MDL, AFCEC/CZO, Environmental Program
Mr. King Mak	JB MDL, AFCEC/CZO, Environmental Restoration Program
Mr. Jim Richman	JB MDL, AFCEC/CZO, Environmental Restoration Program
Ms. Jalise Wright	JB MDL, AFCEC/CZO, Environmental Restoration Program
Mr. John Montgomery	JB MDL, AFCEC/CZO, Environmental Restoration Program
Mr. Tim Llewellyn	Arcadis
Mr. Tom Crone	Arcadis
Ms. Valerie Wade	Arcadis
Mr. Keith Shepherd	Arcadis
Mr. Kevin Jago	Leidos
Ms. Katrina Harris	Bridge Consulting Corp./Arcadis

5) Handouts

- JB MDL Restoration Advisory Board, Meeting No. 65, 20 August 2020, Agenda
- JB MDL Restoration Advisory Board, Meeting No. 65, 20 August 2020, Presentation Slides

6) Call to Order:

The meeting was called to order by Mr. Christopher Archer, Deputy Base Civil Engineer, JB MDL. He welcomed everyone and thanked everyone for attending the first virtual meeting of the RAB.

7) Minutes of Previous Meeting and Review of Agenda Items:

Mr. Michael Tamn, RAB Community Co-Chair, asked for any comments on the minutes from the February 13, 2020 meeting. A motion was made, seconded, and passed to approve the minutes.

Mr. Richman noted the meeting was being recorded for purposes of preparing the minutes.

Mr. Richman welcomed Mr. Andrew Gold, a new RAB member from the Pinelands Preservation Alliance, who is replacing Mr. Rich Bizub who has retired.

Mr. Richman noted that good progress continues to be made in the environmental restoration program despite the COVID-19 pandemic impacts over the past five months.

Mr. Richman reviewed two action items from the last meeting.

Mr. Richman discussed the suggestion made by Mr. Storm to publish notice of the RAB meetings in the Pine Barrens Tribune. Mr. Richman advised the notice of this RAB meeting was published in the Pine Barrens Tribune, as well as a public notice of the construction of the Lakehurst deep well. He stated notices are also continuing to be published in the Asbury Park Press and Burlington County Times.

Mr. Richman noted Mr. Tamn had asked if landfills will be investigated for PFOS/PFOA. He advised the Air Force is still discussing how to address this potential source. Mr. Richman introduced Mr. Curt Frye to provide additional information on this question. Mr. Frye stated the issue is under discussion across the Air Force, and no policy has been set yet. He reminded the RAB that since the beginning of the PFOS/PFOA investigations, the original goal was to address sources where there were known releases of AFFF because of the greatest potential for contamination to be present. Mr. Frye said the Air Force believes the original premise to be true; as JBMDL moves forward most of the landfill sites are near one of the AFFF sites so the evaluation and delineation will include any contributions from adjacent landfills. He advised that as the Air Force begins to look at other potential sources, such as plating shops, and a more formal policy is developed, it will be incorporated into JBMDL's investigations.

8) Update on PFOS/PFOA Investigation:

Mr. Richman next gave an update to the PFOS/PFOA investigation. He noted his slides show new activities/information with a red star. He first discussed on-base projects, noting the construction of a new treatment system and installation of a new deep potable well to replace two shallow back-up wells at Lakehurst is underway. Mr. Richman advised the Action Memorandum has been approved and routed for signature, NJDEP has approved the construction permit, and JBMDL has applied to NJDEP for the water allocation permit. He showed several pictures of the deep well drilling which began June 1, with completion targeted for mid-September. Mr. Richman stated the design of the new treatment system is at the 95% stage; the new system will address the groundwater quality in the deep aquifer and construction will start this fall after the Action Memorandum is signed. Mr. Richman showed additional construction pictures of the well.

Mr. Richman next discussed off-base projects and noted routine monitoring of 27 properties continues where there has been any detection of PFOS/PFOA, even if the detection is less than EPA's Lifetime Health Advisory standard of 70 parts per trillion (ppt). He noted the year's worth of sampling data was evaluated, and it was determined that some of the sampling frequencies could be reduced to semi-annual or annual based on the concentrations found during the sampling rounds.

Mr. Richman stated the same contractor will be doing an investigation of the five areas identified in 2016—McGuire Area 4, Dix Area 14 on the south side of Dix near Pemberton, Lakehurst Areas 16 (Jackson Township) and 17 (Manchester Township) on the northeast corner of Lakehurst, and Lakehurst Area 18 on the southeast corner of Lakehurst. He advised EPA has recently approved the plans needed to conduct the investigation, so the plans will be finalized over the next few weeks and field work will begin in the fall.

Mr. Richman advised the U.S. Geological Survey (USGS) is performing a hydraulic study in Little Pine Lake (Pemberton Township) and Pine Lake (Manchester Township). He explained they are installing piezometers and gauges and will be looking at the height of the water in the lakes compared to the height of the groundwater and temperature gradients, as well as a few other parameters, to determine if the lakes are losing. He explained that "losing" means if there is contamination in the lakes and it is leaking to the underlying groundwater that is being used by potential properties, the base will create a new investigation area and identify drinking water receptors.

Mr. Richman said another contractor has been working on a basewide Conceptual Site Model, including two synoptic basewide surface water and groundwater gauging events which has not been done in the past. He said the field work also included identifying the watersheds and analyzing the sub-basin in relation to the PFOS/PFOA sites which provides useful information in determining sampling points. He explained they also completed an environmental sequence stratigraphy which is a geologic focused analysis that look at depositional environments in relationship to the formation of aquifers and aquitards on a regional scale which have been created over many, many years. He noted this information is helpful in determining the ultimate regional groundwater flow and transport of contaminants which may differ from the local flow and transport. Mr. Richman discussed several figures showing the information and cross sections from the modeling.

Mr. Richman advised the Air Force has receive some money from Congress for PFAS work so the Air Force prioritized bases through a relative risk site evaluation, with JBMDL prioritized in the top 30 bases. He advised the relative risk site evaluation will be available for public review and will be posted in the Administrative Record soon; there will be a public notice announcing the availability of the document and a 30-day public comment period.

Mr. Richman stated the JBMDL is working with the US Army Corps of Engineers to award a contract for a PFOS/PFOA Phase I Remedial Investigation which will include looking at the nature and extent of contamination on-base, as well as any off-base Air Force contamination. He explained the Phase II will include a risk assessment. He said the contract calls for a draft Remedial Investigation Report to be submitted to the regulators within 48 months of award which is anticipated by the end of August 2020. He noted 34 AFFF release areas had been identified in 2015 which were combined into 21 sites; all these areas were evaluated by the Air Force and 28 of the 34 AFFF release areas were validated and funded for further investigation. He explained more information needs to be provided regarding the areas not yet validated. He said the 21 sites consist of 14 sites at McGuire, 1 at Dix, and 6 at Lakehurst.

Mr. Tamn asked if Hanover Lake on Fort Dix has been sampled. Mr. Richman said the JBMDL did not sample the lakes; he said NJDEP did some sampling of lakes but they did not sample Hanover

Lake. Mr. Richman said if the Remedial Investigation leads to Hanover Lake as possibly being contaminated, the lake will be sampled.

Mr. Haiyesh Shah asked if the Remedial Investigation contract specifies what standards will be used—the state promulgated standards or EPA's health advisory action levels. Mr. Richman said the contract specifies Practical Quantification Limitations (PQLs) for groundwater and EPA regional screening levels for soil and sediment.

Mr. Richman noted three off-base properties have been provided bottled water, granular activated carbon systems have been installed at one property, and a reverse osmosis system has been installed at one property. He explained that as a long-term solution, these five properties in Manchester Township are being connected to the municipal water system. Mr. Richman explained that where sampling shows detection below EPA's Lifetime Health Advisory but higher than NJDEP's promulgated standard, NJDEP is providing mitigation; to date four such properties have been identified.

9) Lakehurst Five-Year Review:

Mr. Mike Figura notified the RAB of the initiation of a five-year review for Lakehurst environmental restoration sites. He noted a similar five-year review presentation was given for the Dix sites in 2017, so much of the information will be just highlighted tonight but any questions are welcomed.

Mr. Figura noted five-year reviews are required by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). He stated all sites at Lakehurst where contaminants remain and a remedy is still in place are required to be part of a five-year review to ensure the remedies remain protective of human health and the environment.

Mr. Figura said the review addresses three core questions:

1. Is the remedy functioning as intended?
2. Are the assumptions used when the remedy was selected still valid?
3. Has any other information come to light that could call into question the protectiveness of the remedy?

Mr. Figura displayed a list of the 10 sites included in the review. He noted this would be the fifth five-year review for the Lakehurst sites, with the fourth being completed in September 2016. Mr. Figura showed a map marking the location of the 10 sites.

Mr. Figura reviewed the components of the five-year review--review of site documents; site inspection; interviews with regulatory agencies, RAB members and anyone interested from the public regarding any concerns, suggestions or information needs; data review; technical assessment; report preparation; and, recommendations and follow-up actions.

Mr. Figura showed a list of recommendations from the previous five-year review and noted all have been addressed except for the first one which was to revise the list of chemicals of concern applicable to each site based on sampling results since the completion of the Record of Decision. He noted the list revision is done through an Explanation of Significant Difference or a Technical Memorandum; the JBMDL is working with EPA on these documents.

Mr. Figura reviewed the project schedule, noting public notices have just run in the three publications mentioned earlier by Mr. Richman. He stated interviews are anticipated to occur in November 2020, and a draft report is scheduled for April 2021. He advised the public will be notified when the five-

year review is completed and available in the Administrative Record.

10) Former McGuire Skeet Range Removal Action Update:

Mr. Figura said he had presented on a time-critical removal action for lead-impacted soil at the Former McGuire Skeet Range in March 2019, and the action has now been completed.

Mr. Figura displayed a map showing the location of the site to the north of McGuire, outside the boundary along Wrightstown-Cookstown Road, across the street from the main entrance. He noted the site was used as a skeet range from 1943 until 1959; in 1960, a landfill was placed over a large part of the site; the landfill is being addressed as part of the JBMDL Installation Restoration Program.

Mr. Figura noted the site had been divided into four Munition Response Sites based on what was found at each site, and he displayed a map showing the four sites. He stated Site TS875 is the area on base which was impacted by elevated levels of lead. He explained TS875a is the area not impacted by elevated levels of lead. He continued explaining that TS875b are the off-base impacted areas and was the site addressed by the removal action; TS875c is the area of the former skeet range located under the landfill.

Mr. Figura summarized the tasks performed as part of the removal action and showed photographs of the different steps and their completion date:

- Site Survey – March 2019
- Tree Cutting – March 2019
- Vegetation Removal/Site Clearing – July/August 2019
- Pre-excavation Confirmation Sampling – August/September 2019
- Soil Removal – November/December 2019 and March 2020
- Backfilling/Grading – March/April 2020
- Site Restoration – April/May 2020

Mr. Figura advised 187 truckloads of soil (6,514 tons) were removed from the site and taken to Pure Soil in Farmingdale New Jersey for beneficial reuse as cover material. He stated 288 trees, 558 shrubs, and 268 pounds of grass were replanted. He said the site is suitable for unlimited use and unrestricted exposure.

Mr. Shah asked about the re-use of the soil as cover material. Mr. Figura said he would obtain additional details concerning the re-use of the soil after the meeting. (After the meeting, Mr. Figura provided the following information: The final disposition of the material, in accordance with Pure Soil's permit, was as alternate fill/cover to their approved end facility. In this case, the material was used as cover material for the Kinsley Landfill, Sewell, NJ.)

Mr. Figura said a report on the action is being reviewed by the Air Force and will be sent to the regulators in September. He explained the next steps will be preparing a Proposed Plan and Record of Decision for this site, as well as the other sites within the Former Skeet Range.

Mr Frank Storm asked if there had been any delays with the work due to COVID-19, and Mr. Figura said because the area was off-post and there was a limited field crew, there had not been any delays. Mr. Figura added that much of the work was completed prior to the impacts of COVID-19.

11) Lakehurst Proving Ground Update:

Mr. Figura advised equipment will be mobilized next month to the site where chemical and high-explosive munitions have been found at the Jump Circle in preparation for investigation of two potential disposal pits. He said the tentative schedule is to begin training and the investigation activities in November.

Ms. Branwen Ellis asked if the Base's Natural Resources personnel would be conducting a site survey prior to the start of fieldwork. Mr. Figura said Paul Mahon of the Base's Natural Resources program attended a kick-off meeting earlier this week and will be actively involved in the site preparation to ensure there is no impact to threatened or endangered species.

12) Performance-Based Remediation Contract Update:

Mr. Tim Llewellyn, Project Manager for Arcadis, began by saying the COVID-19 pandemic has had minimal impact on the PBR contract. He noted there has been a switch to teleworking and virtual meetings; the base was closed for non-essential activities from March 18 to July 8. He explained mission-essential letters were issued for ongoing remedial activities and systems, in addition to required sampling. He said a few new activities had to be postponed, but on-site work is now proceeding.

Mr. Llewellyn stated he would be providing a summary of progress on the National Priorities List (NPL) sites at McGuire, State-led sites at McGuire and Dix, and NPL Sites at Lakehurst, along with discussing a few sites where active remedies are being put in place.

Mr. Llewellyn provided a summary of the overall progress at the NPL sites at McGuire:

- OU1 Record of Decision (ROD) under final review ahead of signature which is anticipated by the end of 2020. The remedy is enhanced soil covers over the landfills.
- OU1 and OU3 Remedial Designs (RDs) are under Air Force review with action planned for Fiscal Year (FY) 21. Site LF019 is part of OU3 and a removal action is required to remove discarded cartridges before the remedial action can be implemented. A public notice for the removal action at LF019 will be placed in local newspapers, but no public meeting is planned beyond the updates at the RAB meetings.
- OU4 Feasibility Study (FS) now final and Proposed Plan (PP) under EPA/NJDEP review with a public meeting planned for this fall.
- OU2, OU5, OU6 FSs under EPA/NJDEP review. NJDEP has concurred with the draft final FS for OU2. The OU2 PP and ROD are planned for FY21. EPA comments on the OU5 FS were provided this week and NJDEP comments had been received earlier; a PP and ROD are planned for FY21. The RI for OU6 has been finalized.
- OU7 and OU8 FSs are in progress and being reviewed by the Air Force; the documents are planned for submittal to EPA/NJDEP this year. Pilot studies at both OUs have been completed to provide information on potential remediation technologies.

Mr. Llewellyn displayed a table showing anticipated dates for Records of Decision.

Mr. Llewellyn next reviewed the progress at the State-led sites at McGuire and Dix:

- Remedies in place are operating well.
- Three more sites at McGuire have moved to closure or just need final paperwork; 22 of 30 sites in the contract are complete.
- Three more sites at Dix have moved to closure or just need final paperwork; 11 of 23 sites in the contract are complete.
- Six sites in monitored natural attenuation at Dix have lingering issues and will have additional actions completed to move them over the finish line.
- Thirty-three sites closed to date under the performance-based remediation contract; 117 total sites have been closed at JBMDL.

Mr. Llewellyn next discussed the overall progress of Lakehurst sites:

- Continuing to move sites in Areas A, B, and C to closure within the contract period of performance (additional actions taken at several sites this summer).
- Remaining sites continue in long-term monitoring with stable or decreasing trends.

Ms. Valerie Wade provided updates on the Lakehurst sites. She stated at least one clean round of groundwater sampling has been achieved at all the treatment areas. She said once a second clean round has been achieved, the sites have been divided into treatment versus non-treatment areas; she explained this pattern will be seen as she discusses progress at the sites.

Ms. Wade first discussed sites in Areas A/B and C.

Ms. Wade stated the most recent validated sampling results for Site TT013 are from April 2020 which showed no exceedances at the treatment area; the system was shut down after three clean sampling rounds in December 2019. She advised the system was re-started in April to address low-level detections at two of the wells. She explained at one of the wells in the non-treatment area powdered-active carbon injections have been done to try and reduce the very low-level detections to below the remedial goal.

Ms. Wade next discussed Site LF042, noting there are two treatment areas where a rebound study was started in March 2020; the system remains off. She noted the April 2020 data was encouraging in that low-level detections were only seen at one well. She explained powdered-active carbon injections have been completed at one well in the non-treatment area, targeting low-level TCE detections.

Ms. Wade said at AT016 the biosparge system was re-started in June 2020, and powdered-active carbon injections were completed at one well.

Mr. Keith Shepherd provided an update on the Boeing Michigan Aeronautical Research Center (BOMARC) Site.

Mr. Shepherd stated good progress has been made despite the COVID-19 pandemic at this site located on the northeast portion of Dix, adjacent to the off-base Colliers Mill Wildlife Management Area. He explained there is a larger TCE groundwater plume to the north which begins at BOMARC and extends off-base into the Wildlife Management Area, as well as a smaller plume to the south contained within the BOMARC facility.

Mr. Shepherd displayed the layout of the air sparge system selected as the remedy to treat both groundwater plumes. He noted the Record of Decision was signed about a year ago for the BOMARC Site. He explained the remedy is anticipated to address the groundwater moving off-base

in about 10 years, and the on-base groundwater in about 50 years. Mr. Shepherd displayed a graphic of the air sparge technology, including the building, piping, and injection wells. He explained at BOMARC the injection wells are about 50 to 60 feet deep, with a few extending to 80 feet.

Mr. Shepherd reviewed the project schedule and advised the system start-up is scheduled for September 2020.

Mr. Shepherd showed photographs of the remedy construction, noting the plan included minimizing tree cutting to the greatest extent possible with primarily undergrowth and small diameter trees removed.

Mr. Shepherd next discussed Site SS007, the MAG-1 Area, a former rifle handling area on the western portion of Dix, where TCE and some breakdown products are in the groundwater. He explained directed groundwater recirculation with treatment was selected as the best alternative to address remaining site contaminants as monitored natural attenuation has not been completely effective. He continued explaining a previous treatment system operated until 2015 had done a good job breaking down TCE but did not reach full treatment. Mr. Shepherd said the system construction started in January 2020, and remedial goals are anticipated to be met in 2035 (five years of operations and ten years of monitoring). Mr. Shepherd showed several photographs of the system construction and installation. Mr. Shepherd noted the system would not be operated during winter months.

Mr. Llewellyn gave an update on Dix Site NW042 (900 Area), a former housing complex where pesticides in the soil are being addressed through a soil mixing remedy. He noted action at this site was delayed due to COVID-19 restrictions but is scheduled to start next week; the action will take four to five weeks to complete.

Mr. Llewellyn next discussed Site TU003, a former gasoline station near the Arnold Road gate. He noted the tanks have been removed, but contaminated groundwater and LNAPL in the smear zone remain despite several remedial actions. He reminded the RAB he had presented the use of the TISR technology at a previous meeting; the technology heats a fluid using solar panels which is then injected into the sub-surface. Mr. Llewellyn said the installation had begun in the fall of 2019, with the solar panels being the final step before start-up which are now being installed. He said impacts would be expected in four to six months.

Mr. Llewellyn displayed a list of site closures achieved through the performance based remediation contract and the total of sites closed to date, noting that 32 sites have been closed at McGuire, 50 at Dix, and 35 at Lakehurst.

13) <u>RAB and Public Comments</u>:

Mr. Tamn asked for more specific details on the composition of the injections being used at Lakehurst and their potential impact on the groundwater, particularly any long-term impacts. Mr. Tom Crone responded that the solutions are commonly used solutions that are a food source to the microbes naturally present in the ground to cause a biological action and drive degradation of the contaminants or that cause a chemical action to degrade the contaminants or introduce additional microbes into the ground. Mr. Crone said any impacts are positive. Mr. Llewellyn suggested a topic for the next meeting might be to provide more details on the amendments being used and any long-term effects.

Mr. Tamn asked if there is any provision for restoring any of the trees cleared during the preparation for remediation. Mr. Llewellyn said the vegetation removed was primarily underbrush or small diameter trees so there was no need to re-seed; if there was a need, there would be restoration. Mr. Tamn asked about the installation of a gravel road. Mr. Richman responded that the JBMDL and

Arcadis had discussed the BOMARC work with the Fish and Wildlife Service to look at the locations, and Fish and Wildlife Service did not have any issues with the small trees being removed. Mr. Richman said the road was installed in an open area that had already been cleared of trees. Mr. Tamn asked if the Pinelands had been consulted regarding the tree removal. Ms. Ellis responded that typically in the Pinelands area if more than 1,500 square feet is going to be cleared, an application to the Pinelands Commission is required. She continued explaining that in instances such as the BOMARC remediation, it depends upon the level of clearing as to whether restoration would be required; if the area is going to naturally re-vegetate, no formal restoration plan is required. Ms. Ellis said the Former Skeet Range remediation did require a formal restoration plan because of the level of disturbance.

Mr. Storm asked how more sophisticated remediation systems and equipment are maintained. Mr. Llewellyn responded that an operations and maintenance manual is developed; some warranties are available where equipment has been purchased from a vendor. Mr. Llewellyn said Arcadis' contract runs through 2024, and Arcadis is responsible for the systems through that date. Mr. Richman said the Air Force would include operations and maintenance in future contracts.

Mr. Andrew Gold asked for more details regarding the PFOS/PFOA Remedial Investigation and the relevance of drinking water standards. Mr. Richman responded the Air Force needs to follow the standards approved by the Office of the Secretary of Defense; for example, the Office of the Secretary of Defense would have to approve promulgated state standards or adopted state standards for these standards to be used as cleanup goals. Mr. Richman said for protecting off-base drinking water, the Air Force is using the health advisory levels set by EPA until the Office of the Secretary of Defense agrees to another standard. He stated for the PFOS/PFOA Remedial Investigation PQLs are being used, which are lower than maximum contaminant levels (MCLs). Mr. Richman said NJDEP has stepped in at some sites and provided remediation at lower levels for off-base residents.

Mr. Tamn asked for additional questions from RAB members and then from members of the public observing the meeting. No other comments were offered.

14) Meeting Adjourned:

Mr. Tamn asked for a motion to adjourn the meeting. A motion was made, seconded and unanimously passed to adjourn the meeting at 8:47 PM.

The tentative date for the next meeting is December 3, 2020 and will be a virtual MS Teams meeting due to COVID-19 pandemic concerns.