

Joint Base McGuire-Dix-Lakehurst (JB MDL)
Restoration Advisory Board (RAB) Final Meeting Minutes
Meeting No. 58 – 16 November 2017

SUBJECT: Restoration Advisory Board (RAB) Meeting No. 58 – Meeting Minutes

- 1) Place: Edward Holloway Senior Citizen Community Center, 5 Cookstown Browns Mills Road, Cookstown, New Jersey
- 2) Date/Time: Thursday, 16 November 2017; 6:30 PM
- 3) Co-Chairs: Col. Aaron Altwies, 87th Civil Engineer Group Commander, JB MDL
Mr. Michael Tamm, Resident, Southampton Township, New Jersey

4) Attendees:

Mr. Frank Storm	RAB Community Member
Mr. Rich Bizub	RAB Community Member, Pinelands Alliance
Mr. Tom Besselman	RAB Community Member
Ms. Branwen Ellis	RAB Member, Pinelands Commission
Mr. Nelson Santiago	RAB Member, Ocean County Health Department
Ms. Robyn Henderek	US Environmental Protection Agency, Region II (EPA)
Ms. Carla Struble	US Environmental Protection Agency, Region II (EPA)
Ms. Donna Gaffigan	NJ Department of Environmental Protection (NJDEP)
Mr. Haiyesh Shah	NJ Department of Environmental Protection (NJDEP)
Mr. Christopher Archer	JB MDL, 87th CEG, Deputy Base Civil Engineer
Ms. Nicole Brestle	JB MDL, AFCEC/CZO, Environmental Restoration Program
Mr. Michael Figura	JB MDL, AFCEC/CZO, Environmental Restoration Program
Ms. Erin Laux	JB MDL, AFCEC/CZO, Environmental Restoration Program
Mr. King Mak	JB MDL, AFCEC/CZO, Environmental Restoration Program
Mr. Jim Richman	JB MDL, AFCEC/CZO, Environmental Restoration Program
Mr. Rich Sample	JB MDL, 787 CES/CEI, Installation Management Flight Chief
Ms. Cindy Hood	Air Force Civil Engineer Center
Mr. and Mrs. Miller	Wrightstown Residents
Mr. Andrew Zjawin	Pennoni Associates
Mr. Mark Tucker	APTIM
Mr. Tim Llewellyn	Arcadis
Ms. Whitney Plasket	Arcadis
Mr. Bob White	Arcadis
Mr. Tom Crone	Arcadis
Ms. Katrina Harris	Bridge Consulting Corp./Arcadis

5) Handouts

- JB MDL Restoration Advisory Board, Meeting No. 58, 16 November 2017, Agenda
- JB MDL Restoration Advisory Board, Meeting No. 58, 16 November 2017, Presentation Slides
- JB MDL, List of Documents Provided to Mr. Tamm as of 16 November 2017

6) Call to Order:

The meeting was called to order by Col. Aaron Altwies, 87th Civil Engineer Group Commander, JB MDL. Col. Altwies welcomed everyone and thanked everyone for attending. Col. Altwies advised he is replacing Col. McClure and gave a brief summary of his background and responsibilities. He stated he is a civil engineer and has served 22 years in the Air Force, with his last assignment being at the Pentagon where he worked for the Assistant Secretary of the Air Force for Installations, Environment and Energy. He invited everyone to introduce themselves.

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 July 19 meeting. A motion was made, seconded, and passed to approve the minutes with one correction (Mr. Alex Carnivale is from Burlington County but not a representative of the Health Department).

Mr. Mike Figura stated he would be filling in for Mr. Curt Frye. He noted the meeting was being recorded for purposes of preparing the minutes. Mr. Figura reviewed the status of action items from the previous meeting. He advised the maps requested by Mr. Tamn were distributed tonight as 11"x17" handouts. Mr. Figura said site histories and updated fact sheets will be posted to the web site (www.envirorestorejmdl.com) soon.

Mr. Figura said the information requested on site TU023 will be presented by Mr. Llewellyn. Mr. Llewellyn said a question had been asked at the last meeting by Mr. Tamn as to how much mass is in the sub-surface at TU023. He reminded the RAB the site is a former pump house located in the center of McGuire. He said as a pump house there had been jet fuel underground storage tanks which were removed some time ago; however, the tanks did leak and there is contaminant mass left in the groundwater at the site. Mr. Llewellyn explained biosparging was the selected remedy for the site, and the system has been running for about 6 months. He explained biosparging is similar to air sparge/soil vapor extraction which has been discussed at many RAB meetings; he said the difference is less air is injected and the goal is to increase the oxygen levels in the sub-surface which leads to enhanced degradation of the contaminants in place. He said there is natural degradation occurring which is enhanced by the biosparging. Mr. Llewellyn said an estimated 3,800 pounds of mass jet fuel contaminants are present in the sub-surface, and 110 pounds have been removed to date during the first six months of operation. He explained while some contamination is brought to the surface, it is primarily an in-situ remediation technology. Mr. Llewellyn advised soil sampling is planned for December to provide data to evaluate the impacts of the remediation. He said the results from the sampling will be discussed at the next meeting. Mr. Tamn asked how deep the contaminants are, and Mr. Llewellyn said about 12 to 16 feet deep.

8) Perfluorinated Compounds Update:

Mr. Figura advised a mailing to property owners had been sent in August; this third mailing offered sampling of private wells within potential areas of impact off-base. He stated six additional replies were received, and those properties were sampled. Mr. Figura said the total responses to date are 186 properties for the five different potential off-base impact areas which is a response rate of 63% to 81% for the different areas. He explained the Air Force policy is to sample quarterly for the next year at private wells where there has been a detection of PFOA or PFOS. Mr. Figura stated the property owners where PFOS/PFOA were detected have been contacted.

Mr. Bizub asked Mr. Figura to provide a short update on on-site activities. Mr. Figura advised that the Site Inspection has been completed which identified where PFOA or PFOS could have been discharged. He stated those areas were sampled, and most showed elevated levels in groundwater. Mr. Figura said the next step was to concentrate on potential impacts to human health and the environment so all on-base drinking wells were sampled, plus the off-base municipal and private well sampling program was initiated. Mr. Figura said the draft Site Inspection Report is being reviewed by the regulators; however, the data is available on the JB MDL PFCs web site (<http://www.jointbasemdl.af.mil/PFCs/>).

9) Lakehurst Update:

Ms. Whitney Plasket of Arcadis displayed a map of Lakehurst and advised the environmental sites are divided into six areas or operable units. She said the site she would be discussing tonight is in Area A/B, north of Hanger 1, and is Site TT013. She noted this is one of four sites where more aggressive remediation is being done, such as installing updated systems or expanding existing systems to expedite getting the sites to closure. She said in addition to TT013 the other sites are LF042 in Area A/B and TT017 and AT016 in Area C.

Ms. Plasket stated Site TT013 is located adjacent to the first major facility built at Lakehurst in 1921. She advised there are three separate small source areas—the former fuel farm where there were five 10,000-gallon underground storage tanks mostly filled with gasoline and some jet fuel; there was a 2,000-gallon spill, and some saturated soils found after the tanks were removed. Ms. Plasket said there was also a former dry well at this site. Ms. Plasket showed photographs of the source areas.

Ms. Plasket said different types of contaminants are present including petroleum hydrocarbons, predominately xylenes, and trichloroethylene (TCE).

Ms. Plasket advised that soil vapor extraction treatment began 23 years ago at the site. She said Lakehurst Records of Decision were signed in the 1990s and included pump and treat systems and air sparge/soil vapor extraction systems.

Ms. Plasket showed a graphic of how contaminants get into groundwater. She said when a tank leaks, the contents go into the pore spaces in the sub-surface and have limited ability to move.

Ms. Plasket explained that a factor in picking a treatment technology is the type of chemicals present. She said some chemicals (such as TCE) have a high vapor pressure and prefer to be in a gaseous state and not in groundwater, so transferring the chemicals from water into air is an effective treatment method.

Ms. Plasket stated the first treatment system removed 3,500 pounds of mass which is equivalent to 13 bathtubs of fuel. She said in 2013 only about two tablespoons of fuel were removed so a plume stability study was begun to see what happened when all the systems are shut off; the possible outcomes of the study were that a treatment system needed to be operating or contaminants were naturally declining. She advised the results of the study showed there were spikes in concentrations in some wells when the systems were turned off.

Ms. Plasket said a pilot test was done to help optimize the treatment system before it began operating again. She stated for soil vapor extraction a 40-foot radius of influence was achieved, and for air sparge a 15-foot radius of influence was achieved. Ms. Plasket advised a decision was made to expand the system, and additional wells are being installed next week. Ms. Plasket noted that safety precautions are in place during the construction to avoid utility lines, including hand-digging and using fiberglass

shovels. Ms. Plasket showed photographs of the construction. Ms. Plasket stated the earthwork is expected to be finished in about three weeks, and the system will be delivered in January. She said the system will operate for about three years, with periodic shutdowns to see if there is rebounding. Ms. Plasket said the goal is to clean up these sites by 2021/2022.

9) McGuire Bulk Fuel Storage Area (Site ST009):

Mr. White said he would be discussing some field work coming up in the first quarter of 2018 at Site ST009. He showed the site location on an aerial photograph, noting it is located in the central part of McGuire. He explained the site consists of a series of five above ground storage tanks (ASTs), and the facility has been in operation since 1963. He continued explaining the site initially consisted of 8 ASTs. Mr. White said a series of spills or leaks occurred, the most notable of which occurred in 1967 when there was a 500,000-gallon leak. He noted the tanks used to store jet fuel (JP4), but now store a jet fuel called JP8. Mr. White showed a photograph of large concrete blocks which form walls and a floor that act as a secondary containment system designed to contain any spills or leaks. He showed additional photographs of the site and noted it is a secured area with fencing around the site.

Mr. White explained some terms he would be using. He said Light Non-Aqueous Phase Liquid (LNAPL) is a liquid but not water; an example is cooking oil. He said if the liquid is "light" it will float on water; if the liquid is "dense," it will sink when placed on water. He explained LNAPL has two phases-- free phase where there is pure product, such as oil, on top, and dissolved phase where there has been some dissolution of the compound into water.

Mr. White stated in evaluating the extent of contamination there is not a direct measure to evaluate where the dissolved phase is in the sub-surface; if there is free phase the product will flow into the well or there may be visual staining of the soil. Mr. White explained that benzene, toluene, ethylbenzene and xylene (BTEX) are a complex mixture of hundreds of chemicals and can be a proxy for dissolved materials as BTEX makes up a large component of the jet fuels and other automotive fuels.

Mr. White showed aerial photographs of the LNAPL free phase and dissolved phase in groundwater at the site. He explained it exists in different concentrations or saturations; he noted the areas of free phase are primarily under the secondary containment system.

Mr. White advised the Remedial Investigation phase of the Comprehensive Environmental Response, Compensation and Liability Act process has been completed at the site, and a Feasibility Study is being developed to assess various technologies to address the contamination.

Mr. White noted environmental investigations of the site began in the 1990s. He said there has been limited investigation within the secondary containment area since it is required to be maintained to capture any release from the ASTs and not something that can be easily disturbed. He advised it was recently determined that there are some investigations that can be done within the secondary containment area, including installing some wells to help with the evaluation of potential remedies. Mr. White said the well installation is tentatively scheduled for March 2018 with safety procedures in place including utility clearance and air monitoring. He noted the drilling does not expose much product, and the site is in a relatively isolated location. Mr. White said the anticipated few drums of soil cuttings/product will be contained, characterized, and then shipped off-base for proper disposal.

10) Performance-Based Contract Update:

Mr. Llewellyn stated he would be giving a brief, high-level summary of progress made on Arcadis'

performance-based contract projects.

Mr. Llewellyn began his presentation with a discussion of the CERCLA NPL sites at McGuire where EPA is the lead regulatory agency:

- OU-1: Operable Unit 1 consists of two former landfills and a former recycling yard located in the northern portion of the base, outside the secure area. The Feasibility Study is under review by EPA and NJDEP. A Proposed Plan and public meeting is anticipated in the fall of 2018, followed by implementation of remedial action in 2020.
- OU-2: Operable Unit 2 consists of 10 sites which range in complexity from former aircraft maintenance facilities with significant contamination to sites of former oil/water separators with minimal contamination. The Feasibility Study is undergoing Air Force review and then will be sent to EPA and NJDEP. A Proposed Plan and public meeting are anticipated in the winter of 2018/2019, followed by implementation of remedial action in 2020.
- OU-3: Operable Unit 3 consists of three former landfill sites and one sludge disposal site. The Feasibility Study has been finalized, and a Proposed Plan is almost final. The Air Force's recommended action is landfill caps. A public meeting is tentatively being scheduled for the week of December 4 or December 11. Legal notices of the meeting will be published in the newspapers on the Sunday before the meeting. Remedial action is scheduled for 2019.
- OU-4: Operable Unit 4 is the bulk fuel storage area just discussed by Mr. White. The Feasibility Study is undergoing Air Force review and will be sent to EPA and NJDEP in November or December 2017. A Proposed Plan and public meeting are anticipated in winter of 2018/2019, followed by implementation of remedial action in 2020.
- OU-5: Operable Unit 5 consists of one former aircraft maintenance facility and two former pesticide handling areas. The Feasibility Study is undergoing Air Force review and will be sent to EPA and NJDEP in January or February 2018. A Proposed Plan and public meeting are anticipated in the winter of 2019, followed by implementation of remedial action in 2020.
- OU-6: Operable Unit 6 addresses historical fuel releases under the aircraft apron. The Feasibility Study will be submitted to the Air Force in November 2017. EPA's comments on the draft final Remedial Investigation Report were received the prior day. A Proposed Plan and public meeting is anticipated in 2019, followed by implementation of remedial action in 2020.
- OU-7 and OU-8: Operable Unit 7 and Operable Unit 8 draft final Remedial Investigation Reports are under EPA review. Feasibility Studies are scheduled for the summer of 2018, followed by Proposed Plans and public meetings. Remedial action implemented is scheduled for 2021. Any PFC issues will be handled under a separate contract.

Mr. Llewellyn displayed a chart showing the status of the Operable Units against the CERCLA process.

Mr. Llewellyn next discussed the petroleum sites at McGuire where NJDEP is the lead regulatory agency. He advised operation of two air sparge/soil vapor extraction systems continued; remediation of oil/water separators is underway, with one being removed and one being decommissioned in place; sites under monitored natural attenuation remediation continue to be sampled and monitored and are generally showing signs of declining levels of contaminants.

Mr. Llewellyn showed photographs of the air sparge/soil vapor extraction systems installed in March

2016, where air is being injected into the ground and the vapors are being removed and treated at the surface. He said the three sites being remediated are the Dix Taxi Stand Site (TU019a) the MWR Building (TU970) and Building 5136 (NW044). He reviewed the results of the remediation to date. He advised very good progress is being seen at TU019a where there were significant concentrations with more than 1,400 pounds of mass recovered to date; the source area has been almost completely treated. He reviewed three criteria developed to determine when the system will be turned off: (1) active treatment area is remediated; (2) asymptotic mass has been achieved; and, (3) downgradient treatment area is remediated. He said the first two criteria have been met at TU019a, but the third criteria has not yet been met, so the system will continue to operate. He explained after agreement is reached with the Air Force and NJDEP that the system can be shut down, the RAB will be advised, and semi-annual sampling will be done to monitor the site. Mr. Llewellyn said once two sampling events show results below the standards, the site will be closed-out. Mr. Llewellyn said the same process will be followed at TU970 and NW044 where elevated concentrations of contaminants are still being detected, although there have been significant reductions.

Mr. Llewellyn next discussed Site NW042, Dix 0900 area, which was a former military housing area; the housing has been removed but historical pesticide treatments have impacted the soil. He advised a pilot test was conducted last summer with soil mixing. He noted a significant pre-design investigation was done with about 190 additional soil samples being collected, and the data will be presented at the next meeting.

Mr. Llewellyn next discussed the BOMARC Site and advised the Feasibility Study has been approved by NJDEP, and a Proposed Plan is being reviewed by the Air Force. He said the Air Force's preferred remedy is air sparge barriers to address the contamination and contain it on base. Mr. Llewellyn said a public meeting is targeted for February, perhaps in conjunction with the next RAB meeting. He said the remedial action is targeted for the winter of 2018.

Mr. Llewellyn discussed site closures under Arcadis' performance-based contract, explaining closeout means remedial goals have been achieved, site restoration infrastructure has been removed, and the site is released for unrestricted use. He said at McGuire in fiscal year 2017, 11 site closures have been achieved, and 18 are anticipated for 2018.

11) RAB and Public Comments:

Mr. Tamn asked for questions from RAB members and then from members of the public observing the meeting.

Mr. Miller asked about the size of the plume at the tank farm and if it is going into the stream or sediments. Mr. White responded that the wells on the other side of the stream are clean, and the wells in between the tanks and streams are non-detect for contaminants. He added the plume is very stable and not very mobile. Mr. White said minor concentrations of TCE were detected upstream but were not associated with Operable Unit 4. Mr. Llewellyn added that the human health and ecological risk assessments did not show any significant issues.

Mr. Llewellyn suggested the results from the sediment and surface water sampling be presented at the next meeting.

Mr. Miller asked if the piping for the fuel hydrants at the tank farm is going to be cleaned out. Mr. Figura said the piping is examined by putting a camera in the piping to see if there is any fuel remaining. Mr. Llewellyn said about 400 feet of the piping is due to be flushed out. Mr. Tamn asked if there are any records of leaks that occurred, and Mr. Llewellyn said there were some significant leaks in historical records which were reviewed as part of the early investigations.

Mr. Shah suggested the site-wide Classification Exception Area for groundwater at McGuire be discussed at the next RAB meeting.

12) 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 7:52 PM.

The tentative date for the next meeting is February 7, 2018.