



Naval Air Station South Weymouth, MA Restoration Advisory Board (RAB) Meeting Minutes December 13, 2012

1. INTRODUCTIONS/ APPROVAL OF PRIOR MEETING MINUTES

John Goodrich, RAB facilitator, opened the meeting at approximately 7:00 PM. He requested that all attendees, including RAB members, regulators, and audience members, sign in. He noted that the meeting agenda, handouts, and the sign-in sheet were available on the table at the back of the room. The sign-in sheet for the meeting is provided as Attachment A. J. Goodrich asked if everyone had time to read the minutes from the October 2012 RAB meeting and if there were any comments. There were no comments.

J. Goodrich reviewed the agenda for the meeting. The meeting agenda and the action item tracking list are provided as Attachment B. In accordance with the agenda, the presentation and discussion would be followed by the updates and action items portion of the meeting. The minutes, agenda, and action items for the meeting are posted on the BRAC PMO website: <http://www.bracpmo.navy.mil/>.

2. PRESENTATION

J. Goodrich introduced Dave Barney to give the presentation on the Rubble Disposal Area (RDA) Landfill Gas Mitigation System (LGMS) project. The referenced slides are included in Attachment C.

D. Barney indicated that the majority of the complex sites have been discussed at the RAB and there are only a handful of sites still being worked on. Construction of the RDA cap was completed about 5 years ago and long term monitoring (LTM) has been underway since the cap was completed. During previous RAB updates the RDA landfill gas issues have been mentioned. Tonight's presentation is an update on the landfill gas issues and actions underway at the RDA. The objectives of the presentation are shown on Slide 2.

The RDA is located in Rockland (Slide 3). Various photos showing site conditions were presented, including parkway construction progress near the RDA, the new roadway at its closest point to the RDA, the post and rail fence, turtle fence, and parkway fence. Slide 4 is a photo showing the north side drainage swale with a gas probe (GP-02) in the foreground and the parkway in the background.

The gas probes are 4-inch PVC installed to a depth of about 10 feet, perforated and surrounded by rocks to allow migration of the gas. Methane has been consistently detected above the state action limit (e.g., exceeding 25% of the lower explosive limit) during the LTM events.

D. Galluzzo asked if the Navy's fence was put back. D. Barney responded that the section of the Navy's post and rail fence that was removed for construction of the parkway was replaced by the parkway fence, as planned, and is located further away from the landfill.

Slide 5 presents the history of gas monitoring activities at the RDA. During the Site Investigation and Remedial Investigation (1990-1999) volatile organic compounds were monitored and detected during drilling of soil borings, but not at significant concentrations. As part of the pre-design soil gas survey (2003), five discreet soil vapor samples were collected to determine whether a gas management system was necessary. The results of the survey indicated that a gas management system was needed as part of the landfill design. LTM began in 2007. Methane has been routinely measured at high concentrations in the majority of the seven gas probes since 2007. Based on the methane exceedances measured during LTM a supplemental landfill gas investigation was conducted in 2010 to determine the source and nature of the gas.

The supplemental landfill gas investigation included installation of temporary gas points at depths of 8 feet bgs along transects to see if there was gas present outside the landfill. Methane exceedances were found near GP-01, GP-02, and the gate area (locations with historical methane exceedances). There were no soil vapor samples collected by the wetlands to the south of the RDA since gas cannot move through water which acts as a barrier to gas migration. Gas vents are located across the cap, but typically there are no gas readings from the vents. Based on the results of the supplemental landfill gas investigation, it was determined that the landfill was the source of the gas and a corrective action was needed.

The May 2012 LTM results (Slide 6) indicate that methane continues to be present, hydrogen sulfide is present at low concentrations, the VOC concentrations are higher when using the flame ionization detector (FID) (indicating that methane is present), and carbon dioxide is present. The readings show that the organic material in the landfill is breaking down.

The objectives of the landfill gas mitigation project are two-fold: to mitigate potential lateral gas migration and to vent gas from either on-site or off-site sources. Cowl vents, shown on Slide 7, have been installed on some of the gas vents as part of the mitigation project. The cowl vents create a negative pressure as they turn and improve venting from the gas management layer. The parkway contractor has updated their Health and Safety Plan (HASP) to address working in a methane-enriched area. Site walks with

potential bidders took place. The bids on the first design were very high so a second design is now in development. Additional work activities underway are listed on Slide 8.

The first conceptual design used a trench to allow gas to escape with a wall or barrier on the parkway side of the landfill to prevent gas from going off the Site. The trench depth would be about 10 to 15 feet bgs (water table), but there were difficulties with site constraints and construction techniques.

The current conceptual design uses vertical wick drains which would meet the project objectives and have a high flow capacity. They can be tied into the existing gas management layer. The installation technique does not require any excavation; the wicks can be pushed into the ground. The wick is a corrugated material surrounded by geotextile fabric. The wick is driven down with a Mandrel (casing); the casing is then removed and the wick is left in place (see Slide 9).

The Navy plans to implement the project in phases beginning with a pilot study to see how the wick drains work. The wick drains will be installed just below the mean water table which will be used as a gas barrier. As shown on Slide 10, the top of the wick drain will tie into the gas management layer. The wick drains are 4 inches wide and will be spaced 18 inches apart. The gas will move up through the wick drains into the gas management layer and then to the gas vents on the apex of the landfill. The wick drains will be installed from the landfill side; the stone rip rap in the swale will be moved and replaced after installing the wick drains.

The next steps for the LGMS project as shown on Slide 11. The design will be completed and put out to bid and a HASP will be prepared. The anticipated start date is spring of 2013, prior to the opening of the parkway.

D. Galluzzo asked what the health hazard is. D. Barney responded that if the gas collects in an underground structure there is an explosion hazard. There is nothing nearby the RDA except the utility vaults that could create the opportunity for this hazard to exist.

M. Bromberg asked if the original design (vents on top of landfill) was designed by gas volume or land area. D. Barney indicated that the design likely used both. Information from the 2003 soil gas study was used to estimate how much gas would be generated to determine the sizing of the gas vents and the gas management layer itself. M. Bromberg then asked if the system was still adequate for the excess methane. D. Barney said he would have to check.

M. Parsons asked how the equipment would be brought in for the construction phase. D. Barney responded that the Navy would work with SSTITDC to arrange access to the RDA from the parkway. She then asked if the wick drain takes the place of the wall. D. Barney said yes the wick replaces the wall, but

the design concept is to make it like a wall the way they are lined up. Gas will move into this “wall” of wicks and then rise to the gas management layer.

M. Parsons asked what the offsite sources were. D. Barney stated that offsite sources were just a hypothetical and the Navy doesn’t know for sure that there are offsite sources.

D. Galluzzo asked if the Navy knew the origins of the methane problem. D. Barney responded that the supplemental landfill gas investigation concluded that petroleum within the landfill is breaking down and creating the methane. D. Galluzzo asked why the wicks were not moved further away from the parkway so there would be more area for the gas to disperse before reaching receptors (roadway). Is there a greater explosion risk associated with cars traveling on the parkway? D. Barney stated that when the wall and trench was proposed they would not have been able to tie back into the existing gas management layer and there were discussions about health and safety concerns. Since the wick drains tie into the existing gas management system, the gas will be vented through the landfill vents and disperse into the air. There is not a concern associated with the roadway; a hazard would exist only if gas accumulates.

D. Galluzzo asked whether future development will result in a concern about gas buildup. D. Barney stated that the developer is aware of the situation and it is incumbent upon the Navy to not allow impacts to future structures if there is a potential health and safety issue. The concern is if gas accumulates in a utility vault or other structure.

B. Olson added that the gas is not wicking up into the air; it is wicking into the gas management layer and then discharges from the gas vents in the center of the landfill. If this does work, you should eventually see methane in the gas vents, whereas methane is not present now.

M. Smart asked if the utility structures were just manholes or are there vaults along the parkway. D. Barney stated that the only vaults as of now are storm water collection vaults along the road. M. Smart asked if they will be sniffing any utility vaults since the lights may have transformers and are not typically explosion proof. He also noted that the electrical vaults should be explosion proof. D. Barney indicated that the Navy plans to ‘sniff’ for gas and they will look at the vaults as a gas migration route. He stated there are no transformers in the area.

M. Bromberg asked about methane gas movement and why gas was moving horizontally instead of vertically. D. Barney stated that gas migrates via the path of least resistance. M. Bromberg asked how they know that the wick drains will provide that pathway and the gas won’t just continue to migrate as it is now. D. Barney responded that that is why the pilot test is being conducted so the Navy can check how the design works on a test section. Wick drains have been tested with reasonably good success in European countries.

M. Parsons asked if the wick drains were below the cap and then connect with the vents that are there. D. Barney said yes, the surface material and rip rap will be peeled back, the wicks will be tied into the existing system, and then the material and rip rap in the swale will be replaced. Currently the gas isn't moving through the gas management layer to the gas vents. He added that a couple of different access routes are being discussed with SSTTDC.

D. Galluzzo asked if technology is available to measure the size of the methane gas area/volume. D. Barney stated that over time as the landfill matures the methane generation will decrease.

M. Parsons asked when the project will start. D. Barney stated that it would probably be in the spring and the wick drains will take the place of the trench concept. He added that the trench was much more complicated and more expensive. The wick drains are easier to install and safer since there is no excavated material to manage.

A. Malewicz asked if the wick drains can be adapted to add negative pressure. D. Barney stated that it was possible but the wicks are expected to do the job. The Navy will quickly know if the wicks are effective. A. Malewicz asked how deep the wicks were being installed. D. Barney stated that they would be installed just below the mean low water table. She then asked if the methane source area has been located. D. Barney noted that there is one area of aviation fuel. The soil gas survey conducted during the landfill design phase documented a methane pocket that correlates with the area around the gate; no data seems to correlate with the methane exceedances at GP-01 and GP-02. He added that there is also a lot of peat in the area which also generates methane.

A question was asked if the area is all fill and can boulders such as the ones dug up during the parkway construction create void spaces that allow the methane to move horizontally. D. Barney stated that his theory is that during construction the layers of the landfill cap were compacted too much so gas isn't able to flow to the gas vents.

D. Galluzzo asked if the Navy was responsible for fixing the problem and what would happen if it cannot be fixed. Will LUCs be put in place? D. Barney stated that the Navy has to fix the problem. He added that there is a LUC around the landfill itself but LUCs alone would not be sufficient. He believes that the landfill gas issues are manageable.

M. Bromberg asked if the Navy will transfer the RDA property or wait. D. Barney noted that there is no push for the transfer of the RDA; the developer is not in a rush to get this area. There is a park service piece and it could be split off, but he would rather keep it together.

M. Parsons asked if the landfill gas monitoring would be for 30 years. B. Olson responded that monitoring would continue as long as it is needed; it can be more or less than 30 years. He stated that there are two separate issues: the methane gas and manganese in groundwater. He believes they are probably related and that will determine the length of monitoring. D. Barney added that the LTM data will indicate when monitoring can be ended.

M. Bromberg asked if information could be provided on any exceedances at all three landfills for each RAB, provided as an Action Item. D. Barney said that this information will be provided.

3. UPDATES AND ACTION ITEMS

Action Items: There were no action items to address.

As an administrative action, D. Barney noted the change to quarterly RAB meetings for 2013. He then referred to the November RAB update and summarized the Navy's cleanup activities.

IR/EBS Program Site Update: The Building 82 ROD has been signed and distributed. The next step is awarding a contract to design and implement the selected remedy. The plan is to award the design work in spring 2013.

The Feasibility Study (FS) is being worked on for Building 81 and will hopefully be issued by the end of the year. The Final SRA FS has been issued and the Proposed Plan is underway. A public hearing is tentatively planned for the March/April timeframe.

Long term monitoring is continuing at the WGL, Small Landfill, and RDA (the three landfill sites).

The Navy is preparing a brief work plan for the Sewage Treatment Plant to perform additional delineation prior to moving forward with completion of the remedial action.

At AOC 55C the Navy is planning a replanting effort in the spring to replace some trees that did not survive and promote the growth of desirable woody species.

The issues associated with AFFF/PFCs are still being worked on.

The Industrial Operations Area report, including a streamlined human health risk assessment, will be issued in December and would be a good topic for the next RAB meeting.

Additional work is needed at RIA 111 and a work plan is the next action for this site.

FOST 5C is almost complete. The Navy is trying to get it done this year. There are some issues that remain prior to completing FOST 6A, including the appropriate manner to implement LUCs at WGL.

M. Parsons asked if there were any methane issues associated with the WGL. D. Barney responded that there have been no issues; there are three rounds of data so far. He added that the hold up with FOST 6A and the WGL LUCs is deciding whether to use deed language/restrictions versus a Grant of Environmental Restriction and Easement (GERE) to implement the LUCs.

D. Galluzzo stated his concern about the pit that is so close to the WGL that it could provide a preferential pathway. D. Barney stated that there are appropriate LTM wells in the area and groundwater samples are being routinely collected. French Stream also is located between the landfill and the impoundment.

Conclusion/Next Meeting

There was discussion at the last RAB about moving to quarterly RAB meetings in 2013 due to lack of active sites/discussion materials. Starting in 2013 there will be a February RAB meeting and then the frequency will be RAB meetings every 3rd month (e.g. May 9th, August 8th, and November 14th).

J. Goodrich wrapped up the meeting. The next RAB meeting will be the second Thursday in February (February 14, 2013). The meeting will again be held at the New England Wildlife Center, 500 Columbian St., Weymouth, MA. A potential topic is an update on the Industrial Operations Area.