

**IOWA ARMY AMMUNITION PLANT
RESTORATION ADVISORY BOARD
MINUTES
January 11, 2011**

The Restoration Advisory Board (RAB) meeting was called to order by Elyn Holton-Dean at 5:06 p.m. on January 11, 2011 at the Comfort Suites Hotel.

Minutes Review

The minutes were accepted as written.

Agenda Review

There were two changes to the agenda. Linda Wobbe from the IAAAP will be presenting the FUSRAP update vice Ron Frerker from the U.S. Army Corps of Engineers. The ATSDR Off Post Review informational briefing was not held due to the weather.

Public Comment

No comment at this time.

FUSRAP

Linda Wobbe briefed the RAB from a slide presentation. Please see exhibit 3 for her presentation.

EU 5-E Excavation (building reference 1-05-2, slides 4 and 5 of exhibit 3)

Vaughn Moore asked if FUSRAP excavations went below the footings of the building at the Line 1 EU 5-E excavation (reference slide 5 of exhibit 3). Linda confirmed that this excavation did go below the footings.

Thurman Huffman asked if the excavation was at the northeast corner of the building. Linda believes that statement is accurate, but she is not positive. She added that all of these locations can be found in the Remedial Design/Remedial Action Work Plan.

Vaughn Moore asked if all the contamination being referred to up until this point is exclusively RDX. Linda explained that the first excavation she referred to at Line 1 (EU 1) was remediated for PCB contamination. All the rest of excavations at Line 1 that she has referred to have been remediated for RDX and explosives contamination.

EU-5K Excavation (building reference 1-08-1, slides 9-11 of exhibit 3)

Regarding the EU 5-K excavation, Sivert Iversen asked if they found TNT contamination here. Linda indicated that she is not positive if TNT was found, she recalls RDX contamination. Sivert added that there was a lot of TNT in that building.

Vaughn Moore asked the levels of contaminants found in the location of the pipe near excavation EU 5-K. Linda could not recall offhand, but indicated she does know that the concentrations were pretty high because when the pipe was lifted, concentrated contaminated areas were observed underneath the pipe. Rodger Allison asked what Linda meant by “concentrated” and asked if the soil was discolored red. Linda clarified and confirmed that a discoloration was visually apparent in the soil. Rodger added that he has not seen the data, but TNT causes discoloration in soil.

EU-7A/B Excavation (building reference 1-12, slides 12-15 of exhibit 3)

In regards to the vein of heavily contaminated soil that Linda referred to, Paula Graham asked what explosive contamination made up this vein, RDX or TNT. Linda thinks the soil vein is contaminated with RDX, but she is unsure.

Thurman Huffman asked if this excavation was on the north end of the building. Linda unsure; John Carroll confirmed that it was on the northwest corner of the building.

General

Paula Graham asked if this contaminated soil migrated into the groundwater, and if so, where is the groundwater migrating or where has this groundwater migrated...offsite? Linda explained that IRP will investigate Line 1 groundwater and fieldwork should be underway in the summer of 2011. The extent of the groundwater contamination at Line 1 has not been accomplished yet and will be accomplished as a supplemental remedial investigation.

Vaughn Moore asked where the high contaminated soil was taken. Linda explained that it was shipped offsite via containers and roll-offs. Linda believes the majority of this soil went to Rock Island. Linda further indicated that offsite disposal, in regards to FUSRAP activities, has gone to Rock Island, Michigan state, and a correction from the last RAB meeting...some of the very low level PAH contaminated soil did go to the Ft. Madison Landfill. Vaughn indicated that some of the trucks that left the facility were uncovered dump trucks and not all was transported in a covered unit that went up to the Rock Island landfill. Vaughn added that they hadn't cleaned the sides of the trucks and they need to clean the dirt off the sides of the trucks before entering the roadways because that stuff shouldn't be allowed to fall off the trucks. Linda said she will speak with FUSRAP about this.

Vaughn Moore asked if all pits were left open for winter. Linda said that this area (i.e. EU-7A/B) had been backfilled. Vaughn further questioned if all the pits were sealed for winter or is some were left open. Linda said that the excavation with a failed floor may not have been backfilled because they will need to return to it, but she believes most of the excavations were backfilled.

Vaughn Moore asked where the backfill dirt came from. Linda said that she will need to verify with FUSRAP, but she believes most of the backfill for Line 1 came from a borrow area on plant road I. She indicated that FUSRAP coordinated with EPA on the use of the borrow area.

EU-5K Excavation (building reference 1-08-1, slides 9-11 of exhibit 3)

Mark Hagerla asked if one of the pipes in the presentation was part of the contaminated water trough line. Linda explained that this pipe was not associated with the contaminated water trough line. Linda added that the pipe appears to have been remnants from an old sump pump. The sump pump was removed some time earlier during a cleanup activity, but the pipe was apparently left in place. Linda further added that they are not positive of this assumption, but this is their best guess at this point. Mark asked about the pipe details, and Linda explained the layout/position of the pipe and how the pipe went under the railroad tracks and discharged into the ditch. Mark asked what creek this ditch emptied into. Linda explained that this ditch leads to Brush Creek.

Presentation

A 2011 Certificate of Appreciation for Patriotic Civilian Service award was presented to Marjorie Fitzsimmons. LTC Tommie Hewitt presented the award to the family of Marjorie Fitzsimmons for her endless dedication and service of 13 years to the Iowa Ammunition Plant Restoration Advisory Board.

IRP Project Update

Rick Arnseth briefed the RAB from a slide presentation. Please see exhibit 4 for his presentation.

Off-site RDX Contaminated Groundwater Plume Progress

Rodger Allison indicated that the goal, as established in the Record of Decision, was to reach the 50ppb RDX level within 5 years. Rick Arnseth added that the goal was to be reached 5 years from initiating active remediation which started in October 2007. Rodger recognized that we are a good year to year and half ahead of schedule.

Paula Graham asked if the permissible level in drinking water of RDX is 2ppb or less. Rick concurred with this statement. Paula asked if a level of 10ppb is still not suitable for drinking water. Rick concurred and explained this is why they are monitoring to ensure no one puts wells in. The levels are still not where they want them to be, but they seem to be making significant progress.

Rodger Allison asked where the losing portion of brush creek is located. Rick pointed out the location on his slide presentation and indicated that the losing portion is between the stretch of the new and old part of highway 61. Rodger explained his understanding of the contamination in the creek and how it stays in the creek and doesn't "lose" anywhere along the way from the installation down to that losing stretch. Rick concurred and explained the reasoning as the geology in the area. The area of the plume is very sandy soil, but the geology closer to the plant is glacial till and tight clay. Once the contamination goes off site via surface water in brush creek, it stays in the creek until it hits the offsite area that with very sandy soil, and then goes into the groundwater and feeds the plume. This is likely what has been occurring since the plant's inception.

Vaughn Moore asked how high the spikes were recorded during the heavy rains in the spring of 2010. Rick explained, referencing slide 7, that he is unsure if all these spikes are associated with heavy rainfall events; the highest spike on the chart looks to be 58ppb back in 2007. Rodger recalls the 40ppb spike being associated with a rainfall event. Bruce Workman asked what we would attribute the spikes to if not attributed to rainfall. Rick said he can't swear that all these spikes are attributed to rainfall, but that is probably what they are associated with.

Paula Graham asked how the RDX was getting into the offsite aquifer. Rick explained how the water is coming off of the plant and hits that zone in brush creek with sandy soil. Rick created an illustration where the height of the water in brush creek is greater than the height of the water in the immediate surroundings of channel and so the water basically falls through the bottom of the channel in brush creek into the aquifer. Paula asked for the levels of RDX in the aquifer. Rick said that the level of RDX in the aquifer near brush creek is about 2-3 ppb. Paula said that she understands that some of Ft. Madison gets their drinking water from aquifers. Rick said that those aquifers are deep and are 1000 feet below this plume and there are numerous geological layers between this plume and the aquifers Paula is referring to. Rick added that the water entering the deep aquifers that Paula is referring to came from northern Iowa/southern Minnesota (St Peters Sandstone and Jordan Sandstone). Rick further added that he shared some information on the aquifers at the last RAB meeting.

Vaughn Moore asked about the levels in the impoundment area on Line 1. Rick explained how they hold surface water in the impoundment area until it is clean. He recalls the highest levels being in the teen's (ppb). If they have to, they pump the surface water through a treatment facility to get it below 2 ppb prior to discharge. Vaughn asked if the higher readings are attributed to another place in the line, other than an overflow of the Line 1 Impoundment. Rick said that during the last RAB meeting, they explained how they sampled several drainages along Lines 1, 2, and 3 to see if there were some surface

water discharges that weren't captured by that impoundment area. Rick recalls a 50ppb hit, a 6 ppb hit, and others were right around the detection limit on Line 1; there wasn't much found on Lines 2 and 3. This is part of the reasons they are doing a lot of investigations on Line 1.

Sivert Iversen asked where the water from the shower houses and buildings went. Rick said that it sounds like a lot of the water went into ditches and this is probably what FUSRAP is finding. Vaughn Moore added that they had so many troughs and drainage situations because the surface water on Line 1 is so high and the line would have been flooded if they wouldn't have had the sumps running nonstop.

Vaughn Moore asked where they cleaned the molds out; Thurman Huffman answered at building 1-05-2. Vaughn said every time they poured molds, they rinsed out the molds containing RDX on the ground. Rick said a lot of this probably went out the creek and created the offsite plume. Vaughn wondered how much went into the ground and how much went offsite. Rick explained how the ground in the plant is pretty impermeable and if it got in there, it didn't go very far. Rick referenced the contaminated groundwater plume at the Line 800 Lagoon that has been sitting there for 50 years and has only traveled 20 feet from the Lagoon. Vaughn asked why they left the pond intact when they cleaned it up and wondered why didn't they drain it and fill it in. Rodger Allison explained the logic of returning it to the original condition. Also, the natural resources folks like to maintain wetlands for wildlife.

Mark Hagerla asked about the drainages going into the Line 1 Impoundment and asked if the Line 1 Impoundment area overflows when the rain is heavy. Rick confirmed that it does lose water during very heavy rainfall events, but the Line 1 Impoundment appears to be capturing a lot of clean water as well.

General

Luenne McCracken noted that during the main operation years of the plant, the sludge was cleaned out of the sludge beds at the Waste Water Treatment Plant and she wanted to know what was done with this sludge and questioned if they burned it in the burning fields. John Carroll said that they likely land applied the sludge. Luenne added that there were different rules back then and she has read how at other plants they burned the sludge in the burning fields. John added that he does not know what was common practice at that time, this is just his guess. John said that maybe 15-18 years ago they land-applied it. Luenne said that she has been researching this and she understands that back in the 1950's they burned the sludge and it produced some very bad stuff in the air and the workers would breathe this. John said that he doesn't have process knowledge from that time, but typically in Iowa all sanitary sewer sludge was land applied. Rodger Allison added, that based on his knowledge, he couldn't find any evidence of the sludge being burned; but, it was taken to the old fly ash waste pile and disposed of there for a number of years. This old fly ash waste pile is vegetated up now. Rodger indicated that he never found any SOPs, or interviews, revealing that the sludge was burned. Rodger added that he couldn't find any knowledge of this practice at Iowa; it may have occurred at other installations and Rodger doesn't deny that at all, but he couldn't find evidence of it happening here at IAAAP.

Vaughn Moore said that the old pipe barn use to be near the contaminated clothing laundry and this is where they stored a lot of pipes that they tore out. Some pipes contained TNT or RDX and some were steam pipes. They use to lay the pipes out on the ground. This barn was located between the laundry and the power house. Rodger said he knows the barn they are referring to and indicated that this barn has been removed, but noted that this is good information.

Off-post Land Use Controls (LUCs)

Bruce Workman asked how the off-post LUCs work. Rick Arnseth explained the well permit process (you hire a driller and apply for a well permit with the county). The State has contracted each county to handle the permitting program. Rick went on to say that what the Army is proposing as a LUC, is to inform Lee and Des Moines counties and give them an updated off-post plume map annually and inform them that if they get a permit request for a well in or near this area to please consider the fact that this area is contaminated. Rick explained that as far as he knows they haven't had any permit requests for this area. The idea is that if you go through the process, the permit will be reviewed and if it is in the middle of this contaminated plume, it may be denied. Paula Graham said there was an article in the Ft. Madison Democrat newspaper last fall regarding an area where wells could not be drilled in a part of Lee County without a permit. Rodger said this article wasn't written about the off-post plume area, but that this would be the same kind of permit process as explained in the article. Rick added that there are conditions under which if you are drilling a well really deep and you take precautions to avoid cross-contamination, you may be able to place a well in this off-post contaminated groundwater zone, but it will have to meet some serious requirements. But in general, someone out in this area who is just putting in a well for personal use, they wouldn't be going in very deep, they would be tapping into contaminated groundwater; this is the type of example they are trying to stop. Vaughn Moore asked if someone just went out to Farm King and bought a standard sand-point, how deep they would have to go before they hit the contaminated plume. Rick said the contamination is 50-65 feet below ground surface. Bruce Workman noted that most standpoints aren't that deep down there. Rick said that we can't control the residents; all we can do is tell them and inform them not to do it. If they go through the process like they are suppose to, at least the permit will be reviewed. Rodger said that the installation, the Army, is no more than a fellow property-owner; we have no authority over anyone else's property. Rodger added that we are entering a Memorandum of Understanding between the Army, State, and the two counties. Lee County has signed the agreement, but we are still trying to make meeting arrangements with Des Moines County. Rodger said the Army has made certain commitments under this agreement, such as if there is legitimate need for sometime to drill through the contamination, then the Army will help fund that. We want to put the least amount of limitations on the property owners. Mark Hagerla asked what office handles these kinds of permits. Rodger responded that the Sanitarian at the County Health Departments handles these permits.

Installation Permits

John Carroll briefed the RAB from a slide presentation. Please see exhibit 5 for his presentation.

Mark Hagerla asked about the 13 explosive contaminated outfalls (reference slide 6 of exhibit 5). John Carroll explained how historic processes let it flow out the doors. Today they collect it and treat it through carbon filters and discharge it via their NPDES permit. John indicated that they process about 3,000,000 gallons of explosive contaminated water annually, but they don't discharge it all. Using 2009 data (reference slide 7 of exhibit 5), they discharged 24,300 gallons via their NPDES permit. They re-circulate and reuse a lot of their water instead of discharging it.

Vaughn Moore asked how many power plants are in use at the facility. John Carroll explained that the gas plant at Line 1 and the coal-fired heating plant at the main heating plant are the two power plants in use at the facility. John explained that the Army just spent \$36 million on upgrading the pollution control equipment at the main heating plant. Vaughn asked about other power plants on the facility (Line 3A and the one by the old garage). John said that the buildings are still there, but they are no longer in use.

Rodger Allison added that during the last RAB meeting there were some questions outside of the scope of the RAB about contamination in buildings and the reuse of the buildings and such. Rodger indicated that John Carroll is the point of contact that he would refer folks with those kinds of questions to.

Side conversation captured where Thurman Huffman talked about the carbon filters in buildings 1-40 and 1-70 and mentioned cilica coating on the filters and that these went to the Divison B burning field.

Agency for Toxic Substances and Disease Registry (ATSDR)

Rodger Allison explained the third party evaluation that ATSDR will be providing. This evaluation concerns our off-post data in regards to some questions addressing off-post contamination passed to them from the EPA. ATSDR will be looking at our data to assess the state and condition of the off-post contamination and provide their assessment of how we are doing. Rodger provided their contact information to the audience since they could not be here in person to present due to weather conditions.

Public Comment

Paula Graham asked what data timeframe ATSDR would be looking at. Rodger Allison explained that they will be reviewing the last 10 years worth of data.

Vaughn Moore asked if anyone ever thought of damming brush creek and putting in a filtering system so that the contamination stops running out and leaving the facility. Rodger explained how the Army has kicked around that idea, as well as the idea of lining the creek so it wouldn't be a losing creek. Rodger indicated that with the idea of lining the creek, there were some policy issues with the EPA and the idea of damming the creek would be a massive cost and a long-term operation. Rodger further explained how these options were not cost effective solutions. They also did not treat the contaminant mass that the EPA wanted to see. EPA wanted the Army to get back to the sources and stop the contamination from getting to the creek at all. The Army agrees with that approach.

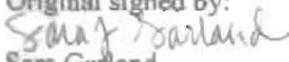
Next Meeting/Draft Agenda

The next meeting was scheduled for April 19, 2011 at the Comfort Suites Hotel. Agenda topics suggested were, IRP project update, CC Update, FUSRAP update, Line 1 update, ORAP update, Pipe Effluent Downstream of Mathes Lake, and training topic on the groundwater remediation process.

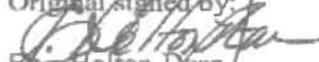
Elyn Holton-Dean offered three copies of the FY10 Installation Action Plan for anyone interested in looking at this document.

The meeting was adjourned at 6:43 p.m.

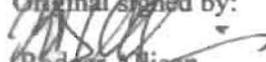
Original signed by:


Sara Garland
Secretary

Original signed by:


Elyn Holton-Dean
Community Co-Chair

Original signed by:


Rodger Allison
Army Co-Chair

Exhibits: 1 Attendees
 2 Agenda
 3 FUSRAP
 4 Restoration Project
 5 Installation Permits

Exhibit 1

RAB MEMBERS PRESENT

Mark Hagerla
Elyn Holton-Dean
Dean Vickstrom
Bruce Workman
Vaughn Moore
Alan Koenig
Sivert Iversen, Jr.
Kim Perlstein
Hans Trousil

RAB MEMBERS NOT PRESENT

Eric Orth

GOVERNMENT MEMBERS PRESENT

LTC Tommie Hewitt, Jr.
Rodger Allison
Dan Cook

GOVERNMENT MEMBERS ABSENT

Sandeep Mehta

PUBLIC

Dean Johnson
Linda Wobbe
Thurman Huffman
Paula Graham
Lueene McCracken
Sally Parrott
Tom Parrott
John Carroll
Steve Bellichard
Sara Garland