

FINAL MEETING SUMMARY

**HANFORD ADVISORY BOARD
RIVER AND PLATEAU COMMITTEE MEETING
June 20, 2007
Richland, WA**

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This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.

Welcome and Introductions

Jerry Peltier, River and Plateau Committee (RAP) Chair, welcomed the committee and introductions were made. Jerry reminded committee members that they don't have to raise their hands in order to speak, but to please be courteous and let the person talking finish a thought before interrupting.

The committee adopted the May meeting summary after agreeing to include changes from Harold Heacock.

**Comprehensive Environmental Response, Compensation & Liability Act
(CERCLA) 5-Year Review Action Items**

Cliff Clark, Department of Energy-Richland Operations Office (DOE-RL), updated the committee on the CERCLA 5-Year Review action items and handed out an updated action item list. Cliff has been tracking these action items internally and making sure project managers give status updates into an automated system. During the 100 Area and 200 Area unit managers meeting, they decided to track these items during their monthly managers meeting.

The three new items are:

- Action 1.3 - Reassess and resubmit the protectiveness determinations for operable units in the river corridor based on new information from the River Corridor baseline Risk Assessment;
- Action 2.2 – Reach agreement on a strategy and schedule for final Records of Decision (RODs) in the River Corridor; and,
- Action 2.3 – Submit new milestones for Remedial Investigation/Feasibility Study (RI/FS) work plans in the river corridor. This item is waiting for a risk assessment, but the inter-agency working group has chosen to do a reactor area by reactor area schedule to meet this action item.

Alicia Boyd and Dennis Faulk, Environmental Protection Agency (EPA), reported details about the status of each action item. Dennis said that they hoped to demonstrate through this review that they are on track if not ahead of schedule with most items.

Dennis provided an update on the 200 Area action items related to the technetium-99 (Tc-99) plume. They are currently working to define the plume; Dennis offered to come back to the committee to talk about the progress on this work, including running a pipe to the Effluent Treatment Facility (ETF). The pipe is being run above ground and will hook into the cross site transfer line. Dennis said it will not do a lot to remediate the plume but will tell them how the aquifer is reacting.

Dennis said they are also working on getting more data on BC cribs and trenches. They now have a Sampling and Analysis Plan (SAP) and are working on the Data Quality Objectives (DQOs).

There is going to be a 300 Area groundwater workshop on August 23rd.

Regulator Perspectives

- Alisa Huckaby, Department of Ecology (Ecology), said the comments Ecology made on the wells in the “horn” to be decommissioned were omitted. Alisa said they would like it added to the table as an action item in 9.1 or 9.2 to have the non-compliant wells decommissioned.

Committee Discussion

- *If there is a date change on an action item, will DOE-RL submit a letter for that change?* Cliff clarified that these dates are targets and are not enforceable deadlines, so a change letter is not necessary.
- *What data collection is involved with action item 7.1?* Dennis said an SAP will be developed.
- *Are there any lessons learned from this process?* Dennis said he thinks the five year review should only have one author. He said they made the mistake of having four different authors and trying to synthesize the information was challenging. Cliff said

RL is doing a lessons learned, too. He is suggesting to the management that they start in 2009 to be able to finish by 2012. They want the opportunity to have a discussion internally and improve the public participation.

Groundwater Remediation Technology Update

Scott Petersen, Fluor Hanford (FH), provided an update on the groundwater projects. For the chromium plume and vadose zone work, a complete set of wells are done. In the first set they will do tests using molasses; the second will use vegetable oil. Scott explained there are six wells in a set: one injection, one up, one down, and three in the circle.

Scott said they were supposed to start testing in the field next month on the mending barrier, but the reactor chemical is not working so they have been delayed. He was hopeful that they would be able to try again in January or next summer. They have done electric coagulation treatability tests in the chrome plume. Scott said they have not been able to keep it running for 24 hours, however, so they are still working on figuring out all the kinks.

They are currently continuing lab tests on the vadose zone strontium 90. They are also doing a phytoremediation treatability tests in 100 K and N Area right now to look at how bugs spread contamination. On June 11-15, uranium stabilization tests were done in the 300 Area. Also a small scale carbon tetrachloride lab study is currently ongoing.

John Sands, DOE-RL, said they are about to release a revision to the groundwater management plan. He hopes to have the plan out for review by the end of the month. He said this plan embraces ideas and values that have come forth from the Hanford Advisory Board and other stakeholders on the approach for groundwater cleanup. John said he hopes the committee can see that the plan reflects the Board's advice.

John said RL priorities are protecting the river and preventing plumes in the Central Plateau from moving into the groundwater. The Central Plateau pump and treat will be expanded and they will be looking for a better design than the current systems. They are working on developing new technology to address these problems. One complaint they have heard is that the groundwater reports all use colors to show contamination, but the colors are not standardized, so they will try to standardize them.

Regulator Perspectives

- Alisa Huckaby said Ecology is involved in approving some of the treatability test plans for the new technologies. She added that Ecology is excited about the new technologies being developed. However, they are continuing with pump and treat to understand the interface between groundwater and surface water along the river. They have conceptual models that predict what happens in this area, but sometimes the predictions are not right on. Alisa also announced that the calendar year summary report for pump and treat has just come out.

- Jacqui Shea, Ecology, highlighted the work that will be done in the 100 D Area. She said they believe there is a chromium plume moving over from the horn area to H Area. There are twenty-one new wells that will be put in over the next few years. That area is culturally sensitive which may impact the schedule and location of wells. Jacqui said Ecology is very interested in the plans for the 100 D chromium investigation. They have been concerned about that area and are looking forward to new wells and new data from that site.
- There is a new source identified in the 190D and 108D buildings, and in the area of dichromate pipelines. Jacqui said that new characterization is needed in this area.
- Groundwater DQOs for the Reactor Area and D and H Areas will start in August and run through February. Washington Closure Hanford (WCH), EPA, Ecology, and DOE are all involved. They are continuing to pursue total elimination of leakage from the 100 Area. Minimizing leakage from the reservoir is not good enough. Orphan site investigations just came to Ecology for review and they have provided comments on the new waste sites, but have not heard anything back.

Committee Discussion

- *Are there ideas about sources to look for in the northern plume?* Scott said there are some areas that were used for storing and mixing up the plume chemicals. They plan to work in that area to help inform the other areas. John Morse said this is being coordinated with the river corridor contractor. They have to overlay current plans with places they are digging up, or planning on digging up. There are some areas John's team has to stay out of because there is work being done there currently. They will meet with the other teams to share information on the source area.
- *Is there an ongoing dialogue with DOE-Headquarters (DOE-HQ), especially Mark Gilbertson's technology group?* John said yes, the dialogue is continuous and there are three new projects to investigate technologies that will go out for bids.
- *Why is phytoremediation being funded when it was not a technology the group advised to pursue during the workshop on priorities?* John said they are pursuing it because it might be useful in removing strontium in shallow areas. He said they might be able to use it for 10-15 years and it would eliminate the strontium. John explained that lots of different groups had divergent opinions on this technology.
- *What about the concern about the herbicide that was being used?* John said when they are all done with the test plot the site will be destroyed. So whatever herbicide is applied needs to be approved by the State of Washington.
- *Will the groundwater management plan be a living document?* John said it is. The part of the document with all of the details and schedules lives separately from the overall approach, and the details get updated regularly. John said with the Remedial Investigation/Feasibility Study (RI/FS) that is being developed they have a lot of activities in the details. Dennis said he would be surprised if the Board wants to give advice on the groundwater plan; he said it is not really the kind of document that needs advice. John confirmed that Ecology has provided comments.

- *Where is the implementation plan for this document?* John said the baseline is the implementation plan. All of the details of what is being done is in the timeline. Dennis said the remedial design and work plans are where the work is actually done and the RODs will specify how the work is done. John said you will be able to see that when the document is out.
- Harold pointed out that the plan very closely follows the recommendations the Government Accountability Office (GAO) made last year. John said the document has a number of audiences and one is Congress.
- *What is the timeline for the work in the T Area?* John said the work will begin later this year and go into 2008. Jacqui said there is a pretty firm schedule. They asked for an integrated schedule from the contractors so all of the information is in one place.
- *How is the vadose zone included?* John said this document tries to address the vadose zone, too. In December 2007 they will do a Central Plateau vadose zone plan that will identify field tests to look at technologies to address the plumes. Under the M-15 milestones, they will do additional deep vadose zone evaluation. They have a pretty aggressive program to do the deep vadose zone characterization and M-15 will provide more money next year to do more evaluation.
- *What is the schedule for the DQO?* Jacqui said there is not a schedule yet, but FH is planning a kick off meeting and the public will be invited. They will do stakeholder interviews in August.
- Susan Leckband reminded the committee to be aware of the learning curve with two new contracts coming on. The committee should encourage the good momentum that has started here to continue.

Environmental Restoration Disposal Facility (ERDF) Update

Steve Wisness, DOE-RL, said that in March an independent review team was commissioned to look at issues with compaction and leachate problems at ERDF. That review team was made up of experts from around the country. There are a number of things the review team identified and recommended that RL would not have been able to address otherwise. The review found the compaction to be adequate after they dug out some pits to look at material and it appeared okay. Sediment tests will continue to test compaction. There are some improvements being made with the testing technologies, such as utilizing GPS on the equipment to measure the compaction as the operator is working. The leachate collection system will be routinely monitored and pumped. Oversight from DOE and Washington Closure Hanford (WCH) has increased and will continue at this higher level. One of the facility representatives is spending 40 percent of her time on site at ERDF. Steve said things are looking good and operations are proceeding. He emphasized that they want to make sure they are doing this right. Everyone was very proactive in working together when these issues were raised and RL implemented the improvements ahead of what the report requested.

Neil Brosee, WCH, said the results of the study showed the integrity of the landfill had not been compromised. The enhancements to the leachate system included making all

the systems look alike to help with human performance. They have initiated procurement of the GPS for the compaction systems. The process improvement team is looking at all of the operations for improvements and part of that is oversight. They have increased the employee shadow programs until the programs are in place and proven to be working to meet standards. They are looking at all regulatory requirements to make sure the implementing procedures are documented. Steve said next week some RL employees are going down to a landfill in Utah where they are using the GPS system to continue to learn about the new technology.

Al Hawkins, DOE-RL, provided an update on the Supplemental Environmental Projects (SEPs) to address the ERDF fine. He began by clarifying that the money for the SEP is coming out of FH and WCH budgets.

They are now looking at two possible SEPs. The first is to provide the Sheriff's Department with the supplies, including a boat, to do river cleanup of spills. This SEP is in a draft at EPA and they have received preliminary comments. The second SEP is to provide greenhouses at Washington State University (WSU) to do native plant revegetation for the site. Al said RL can take advantage of WSU's space and resources to grow native plants for the site. The Tribes and the Washington State Department of Fish and Wildlife (WDFW) have needs that could be met with this SEP and could utilize these plants. This SEP should be going through to EPA in the next few weeks. Al said they worked really hard to try to implement a biodiesel program for the SEP but could not resolve the warranty issues with Volvo.

Regulator Perspectives

- Dennis said EPA is receptive to these two ideas for a SEP. Both proposals still need to meet EPA's criteria. Also, the fine can not be entirely offset by a SEP; there will still be a monetary fine.

Committee Discussion

- *What was the previous mode of monitoring the leachate system?* Neal said they found that the leachate system in two cells was not functioning and it was not realized early enough. They are switching to a live system to get current information and alarms will sound if something has malfunctioned. Steve added when they were previously testing the leachate they kept getting the same reading and it did not appear that pumping was needed. Now they are pumping on a regular basis even if the readings do not indicate that it is needed. Neal said the idea was to back up the human tests with an automated system for the sump so they know if something is malfunctioning.
- *ERDF is fundamental to Hanford cleanup and these changes are great. Are there any waste forecast issues, or are there any changes to waste acceptance criteria?* Neal said there are no changes to the waste acceptance criteria. Dennis wanted to stress the importance of getting cleanup going in the 200 Area because they need the

soil for fill at ERDF. If schedules get pushed out in the 200 Area it will have huge impacts on ERDF.

- *What enhancements are happening across the whole site? Is the site up to date with today's science? Is there a system to look at all site operations in the way you have for ERDF?* Steve said there is a certain amount of lessons learned that is shared, but they could always do more. He said if things are working well it is hard to change the regulatory processes. Dennis added that necessity dictates change: if something they are using is not working they will go look for something else. Dennis added the CERCLA 5-Year Review is simply operational and does not address this kind of system review. Steve said the re-bidding of contracts offers an opportunity to challenge new ways of doing business and is a bigger way RL can affect that process.
- *Has the effluent coming from the leachate system changed?* Neal said there have been no changes in leachate samples.
- *Is there competition with the local nurseries if that SEP happens?* Al said his understanding is that there are very few nurseries doing this. Rico Cruz, Confederated Tribes of the Umatilla Reservation (CTUIR), said there are about 600 native species and at least 40 species are needed for a good revegetation. No one is doing this work in that quantity. Al said revegetation is not always successful, so they are also talking about doing tests and understanding the failure of revegetation as a part of the SEP.
- *Is ERDF back in operation?* Steve confirmed that is it operational again.

Committee Work Planning – Institutional Controls

Jerry Peltier introduced the discussion on Institutional Controls (ICs) noting as the committee starts to see permitting and final RODs, IC's will come into play. In 1997 the Board issued advice #63 on ICs. Jerry did some background research and found EPA has some definitions on ICs that came out in 2000. The advice went a step further than EPA's document by including the Model Toxics Control Act (MTCA).

Jerry said one of the things that keeps coming up is the importance of layering: no single IC is meant to work alone; rather, they need to be used in conjunction with one another to be effective. Jerry said he feels like the advice was done well and he does not think it could be improved upon at this time. Some of the ideas and requirement in these documents are now to the point where they are actually becoming a reality and will be used. Jerry would like the committee to keep in mind what the Board expected when this advice was written, and to make sure it is reflected in the final RODs or Resource Conservation and Recovery Act (RCRA) permits.

Regulator Perspectives

- Dennis said ICs are failing because they have not gotten the attention they need and evaluating them is usually an afterthought. There is a training today on ICs in the

new Washington law and they can bring the information back to the committee.

Committee Discussion

- ICs came up at the leadership retreat because Nick Ceto, EPA, asked the Board for input on ICs in the coming year. Dennis said it is also about what value there is for the land. Maynard said you have to look at each ROD or each action to see if more requirements are needed that could be different for different sites. Dennis agreed that is what needs to be done. For example, if the City of Richland wants to build condos in the 300 Area, what might RL need to do differently to suit that use? Dennis said they have never done that evaluation and asked “what if” about each site.
- Jerry asked if EPA or the government is following the concepts presented in these documents. Dennis said at Hanford the controls are mostly unexamined because people are not yet using the resources. He suggested the Board take a chunk like the 300 Area and run it through the decision process to see how it might work.
- Harold Heacock said there are a lot of places around the country that have implemented ICs: Denver, Rocky Flats, Silver Valley. Maybe someone from this committee could look into getting some information on what the requirements were, how they were made, and how they are working. Shelley Cimon noted some of those sites are under DOE’s Office of Legacy Management (LM), and it would be interesting to see what is happening with them. Dennis suggested that someone from EPA Region X could come talk to the committee about what they have seen in other places.
- Dick Smith said three years ago everything was going to be capped and ICs would be put everywhere. That was not acceptable to the Board then and it is not now. ICs should be evaluated along with the alternatives for cleanup and that has not been the case. Dennis said he would encourage the committee to work on the 300 or 100 Area and look at the plans. It would give the agencies more discipline as they approach the 200 Area.
- Shelley emphasized the need to develop an understanding or agreement on the definition of ICs and what they mean for different people. Dennis said when this topic initially came up the agencies argued about the definitions. For example, is a fence an IC? Dennis thought that it was not, but a requirement to monitor the fence every year is an IC. These issues have never been fully resolved.
- *Is the IC policy tied into the long term stewardship plan?* Dennis said it recognizes that the stewardship plan is there but it is not integrated because one is a regulatory document and DOE did not want to mix a programmatic document with a regulatory document. Dennis added the documents do not contradict each other.
- Dennis acknowledged EPA struggles to incorporate ICs into the FS evaluation. He said Board advice on how EPA reviews ICs on regulatory documents would be helpful for all three agencies.

- Jerry Peltier, Shelley Cimon, and Jerri Main all agreed to continue Issue Manager work on framing this topic and looking at how the committee can move forward and bring something to the Board in the coming months.

Plutonium Finishing Plant (PFP) Sub-grade Engineering Evaluation/Environmental Analysis (EE/EA) Update

Ellen Mattlin, DOE-RL, provided the update on PFP. Ellen is the acting manager for PFP; Stacey Charbonneau, DOE-RL, has moved to the River Corridor Project, and Kevin Bazzell, DOE-RL, took a job at a facility down at Stanford. The purpose of this briefing was to update the committee on the sub-grade structure that is up for review. The PFP site follows the M-80 milestone series. Evaluation of below-grade structures was required to evaluate what is left on the site and what will happen when they get to slab-on-grade.

What was agreed upon was to do an engineering analysis rather than an Engineering Evaluation/Cost Estimate (EE/CA) for the sub-grade structures. Four action alternatives were considered. Ellen said this is why an EE/CA was not warranted because they are waiting on the final cleanup decisions in the Central Plateau to be made. The document is available electronically or at the administrative offices. There is no formal comment period, but if anyone from the committee wants to provide comments they will be submitted for future considerations.

Regulator Perspectives

- Dennis said, fundamentally, the agencies need to come up with a way to deal with below-grade structures on all of the sites. There were several different operable units on this site and no one could decide what belonged where so they came up with the zone approach. Dennis said if they are out there dealing with other issues and they run up against a sub-grade structure they can write a ROD and take care of it.

Committee Discussion

- Dick Smith said he could not access the documents online. Also, he asked why they are going to the trouble of studying their options when the only real alternative is to take it down until a future decision is made. Dennis said when they negotiated the milestone they thought an action might happen. If they decided to do Remove Treat and Dispose (RTD) then a public comment period would have happened, but with Surveillance & Maintenance (S&M) it is not necessary.
- Dick felt that the cost analysis should have been left out of this document. Rick Bond explained that it was included when they thought they would do an EE/CA, but they did not finish it because they decided to do S&M. Maynard suggested the document needs to say that they stopped the process so the cost analysis is not complete.
- *When the facility comes down to the slab, what risk to the public is there of that building staying in the sub-grade?* Rick said there is not much in the sub-grade; most

of the risk was in the buildings. Dennis said right now they are dealing with three disposal facilities right next to PFP. Once they make a decision about those facilities they can include PFP in that decision.

Z-9 Trench Update

Ellen provided a handout that described the Z-9 Trench and provided pictures of the facility. She said their work scope is to demolish facilities. They have had to coordinate their work with groundwater and waste sites so they do not interfere with later work on these sites. The crib on this site was not very large, but it has plutonium and uranium waste. They estimate they have 58 kg of plutonium left at the site. Most of the plutonium and uranium that was previously dug out was put in the low level burial grounds and only three of those barrels have yet to be retrieved.

Ellen said their work plan is being developed based on the pictures and data that they are collecting. Their work plan is based on 20 years, so they do not want to make something unsafe for others to do work on this site later on. Dennis said the committee will see the preferred alternative for this site in a couple months. He explained they have an action item that says they need to get the above grade structures taken down by 2010. He is arguing that they should wait to see what is going to happen with the below grade work first because it might be safer to take down once it is filled in.

Ellen said FH worked with Pacific National Northwest Laboratories (PNNL) to put a camera down into the crib. They had not been in the trench since the 1970s. Ellen's team provided a virtual slideshow tour of the crib. She described all of the crib structures that are being evaluated by the structural engineers and outlined the problems they face in removing the structure above this crib.

Committee Discussion

- *How much plutonium was in each canister?* Dennis said there is a gram amount that they can put in each drum. They could fit 6-8 canisters per drum.
- Dennis said as the committee looks at these pictures, they should think about the Board's expressed value of digging up sites like this one. Dennis said the options come down to fill it up and put a cap over it, or remove the highest concentrations to send to the Waste Isolation Pilot Plant (WIPP) in New Mexico and then put a cap over it. The question is: does it make sense to retrieve this or not? Shipping to WIPP is very expensive. Jerry asked if this is a possible IC site. Dennis said it could be. Even if they dig up some of this plutonium, they have a smear zone down 100 feet, and they are not going down 100 feet, so they are going to have ICs for at least some of this site.
- *What are the next steps after the structural engineering recommendations are out?* Rick Bond said the engineers are evaluating the structure for twenty years. Rick does not want to make the structure stronger just so it can be taken down later. Ellen

explained part of the study is to determine how the demolition will take place, how close can they get a tractor to the crib and how much weight the crib can withstand while they take it down. Right now they have a 500 lb/ten square feet limit on the crib. They need to know if this limit can be altered and if the crib can handle more weight in order to do demolition. Dennis estimated that this site will be taken care of within two years.

Committee Work Planning and Committee Business

Future agenda items:

- 200 Area tech plume drilling
- Groundwater/Vadose Zone Management Plan
- Central Plateau eco-risk assessment update
- Natural Resource Damage Assessment (NRDA) process tutorial
- Expert report on High Resolution Resistivity (HRR)
- Update on 61810-11 (by August)
- Public workshops on B reactor in Sept
- ICs including WA State legislation
- Check in with records management Issue Managers
- Carbon Tetrachloride & Tc-99 Plumes

Dennis said ERDF has a Tc-99 limit and they are getting close to the limit. Al Boldt is asking Ecology if they have changed the criteria as part of the permitting of additional waste streams from pump and treat, bulk vitrification, or ETF. Dennis said this it is a legitimate and timely issue.

Committee members were reminded that the leadership selection process is happening. Nominations can be emailed to EnviroIssues.

Action Items / Commitments

- Committee call July 17th at 9:00 am.
- Wednesday August 8th is the placeholder for August meeting.
- August 23rd is the FF5 workshop.
- 100 Area DQO kick off is in July.

Handouts

NOTE: Copies of meeting handouts can be obtained through the Hanford Advisory Board Administrator at (509) 942-1906, or tholm@enviroissues.com

- CERCLA Five-Year Review Issues and Actions, DOE-RL.

- Draft Hanford Integrated Groundwater and Vadose Zone Management Approach, Briant Charbonneau DOE-RL, June 2007.
- Email exchange, Alisa Huckaby Ecology, June 19, 2007.
- On the Job: at Hanford's River Corridor Closure Project, River Corridor Closure, June 2007.
- Institutional Controls, DOE/HAB distributed by Jerry Peltier.
- PFP Sub-Grade Structures and Installations Analysis Document, Ellen Mattlin DOE-RL, June 20, 2007.
- Plutonium Finishing Plant 216-Z-9 Crib Characterization Project, Ellen Mattlin DOE-RL, June 20, 2007.

Attendees

HAB Members and Alternates

Shelley Cimon	Jerri Main	Mike Priddy
Ken Gasper	Jerry Peltier	Wade Riggsbee
Harold Heacock	Gary Petersen	Dick Smith
Susan Leckband	Maynard Plahuta	John Stanfill

Others

Al Hawkins DOE-RL	Rick Bond, Ecology	Fred Mann, CH2M Hill
Karen Lutz, DOE-RL	Alisa Huckaby, Ecology	Rico Cruz, CTUIR
Carrie Meyer, DOE-RL	Jacqui Shea, Ecology	Lynn Lefkoff, EnviroIssues
John Morse, DOE-RL	Ginger Wireman, Ecology	Emily Neff, EnviroIssues
John Sands, DOE-RL		Scott Petersen, FH
Steve Wisness, DOE-RL	Alicia Boyd, EPA	Janice Williams, FH
	Dennis Faulk, EPA	Barb Wise, FH
Lori Gamache, DOE-ORP		Mark Triplett, PNNL
		Annette Cary, TCH
		Neil Brosee, WCH