

FINAL MEETING SUMMARY

**HANFORD ADVISORY BOARD
RIVER AND PLATEAU COMMITTEE MEETING
May 9, 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. The changes to the April meeting summary were discussed and the summary was adopted.

Dennis Faulk, Environmental Protection Agency (EPA), said the EPA has just finished their comments on the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Five-Year Review. He didn't want to discuss the details of the report, but wanted to let the committee know he brought copies. Dennis said his general impression was that the Department of Energy (DOE) did a good job and went above and beyond the basic requirements. DOE added some action items on page two of the report concerning when to make protective determinations. He suggested that the committee allow time in a future meeting to go through the action items.

Update on Tritium in 118 B Burial Ground

Jack Donley, Washington Closure Hanford (WCH), provided a presentation on the 118 B Burial Ground. He reviewed site details including operation dates, acreage, and waste compositions. Jack discussed the remediation timeline and explained the sources of the tritium contamination. He explained the risks associated with tritium and showed a chart that detailed the contamination at depths. Jack discussed paths forward for EPA and DOE-Richland Operations Office (DOE-RL). WCH is currently evaluating preliminary soil data and will soon conduct modeling for groundwater. The next step is to create

preliminary estimates for two scenarios: excavating to groundwater and implementing institutional controls. Jack provided some details for what each remediation scenario might involve. He said a lot of clean soil would have to be removed to get to the slug below. The clean material that gets taken out will be put aside and added back in last so they can reseed the seedbed. Presently they are about 30 feet deep in the trenches. This is the depth at which they are finding a lot of the tritium contamination. There are a total of 23 trenches in this burial ground.

Committee Discussion

- *At the last risk assessment workshop the committee reviewed the assumptions used for the cleanup methods. It seemed like all the agencies haven't agreed on an end point, is that true?* Dennis explained the reasonable maximum exposure is still being debated. He added that he is comfortable with the cleanup methods chosen, and feels that everyone will be happy with them. Dennis said there are not currently any endpoints for groundwater, but thinks the agencies are more aligned than it appears.
- *Concerning the sources of tritium removed, are these known sources?* Jack explained the debris that was contaminated with tritium was the source and was mostly solid waste. WCH did some verification sampling and found some small quantities of tritium in the southern portion of the site. DOE and EPA decided to drill some holes to determine the extent of the contamination. They had to change the way they conducted sampling for tritium because it evaporates at the surface. When they dug down below the surface, they found more contamination than what appeared on the surface.
- *What is the tritium allowance for groundwater?* The allowance for drinking water is 20,000 parts per billion (ppb); the amounts they are seeing are well below the standard.
- *Can you tell when the tritium contamination was put in the ground in different places and how long it's been there based on its half life?* Dennis said tritium has a short half life of 12 years. He added that tritium also has very little body damage capabilities. Jack explained the trench was dug at the later part of the operation and expanded as they went. Information on what stage different parts of the trench are at in relative to the contaminants half life is not possible to determine.
- *If you assume the tritium is not concentrating, then based on its half life won't it be in free release within seven years?* Dennis said that the free release is more like 100-150 years away. He explained they are getting very little movement into groundwater. There are concentrated lenses are in sand and clay; wherever there is more material for it to bind to, higher concentrations will be found because there is more surface area.
- *Is there any information about the movement of the contamination on the site?* Jack said the only area WCH found tritium was in the areas they drilled the boreholes. Dennis added there is a tritium groundwater plume coming out of this burial ground. Dennis said one hypothesis is that the slugs already went through and moved it as far as it is going to go. EPA knows the plume is there, but don't have a lot of data yet.

Dennis said he is considering putting restrictions on this site; he is leaning towards doing an Explanation of Significant Difference (ESD) and putting land use restrictions not to irrigate.

- Wade Riggsbee did the decommissioning and one of the issues he encountered was the potential for perching in that area. Jack said WCH didn't just sample for tritium, they sampled for a lot of contaminants, and everything else was well below cleanup levels. They didn't see any perching in the area and they thought EPA's decision to do the borehole was a good one.
- *If the public comment period on the ESD is 1 or 2 months the Board won't be able to draft advice.* Dennis said this is a public notice and not necessarily a comment period. If the Board wants to weigh in that would be fine, but he did not feel the agencies need formal advice. He doesn't think spending \$20 million to take the slug out makes sense.
- *What is the purpose of the modeling?* Dennis said EPA is trying to determine if the contamination they are finding at 30 feet will equate to higher levels in the groundwater. Wade suggested that they integrate this work with what the risk assessment is doing.

Update on 100 D Chromium

Jim Hanson, DOE-RL, and Scott Peterson, Fluor Hanford (FH), provided an update on the 100 Area chromium work. Scott noted this is just an update and many members of the committee have seen the material before. DOE-RL and FH are concentrating their efforts to find the source of the chromium plume in the southwestern site. They drilled two boreholes and didn't come up with anything. Therefore, they formulated an approach to look for the plume from the bottom up. They drilled seven wells to look for chromium in the groundwater. FH is now monitoring the groundwater and will be sampling their third complete round tomorrow. This sampling will help define the plume; they found the highest amount of chromium in this area. Scott said they found a formerly hot well where the contamination has migrated down gradient. He said all of this is impacted by the river stages; when the river goes up, the plume can move. The wells take continuous measurements to get a probability map so they can understand groundwater movement within a six month period. At the end, DOE-RL and FH hope to understand if the plume really is moving down gradient or if it is just moving with the flow of the river.

Richard Carlson, WCH, said they have a remediation manager out there now remediating three high-priority sites with chromium contamination. There was liquid chromium at one site. Buried waste is being remediated with chromium contamination. In WCH scope they also have to address miscellaneous remediation not related to waste sites. They are going to accelerate their miscellaneous scope to pull the rail ties out and look at the soil underneath to see if there is chromium staining there from where the rail cars sat on the spurs. If there are high concentrations, this is where they will see it. They hope to start that process this summer.

Jeff Lerch, WCH, talked about orphan or new potential waste sites. WCH has gone through this process for B Site and worked with the groundwater team. They identified 18 new waste sites; there are 4 that have sodium dichromate contamination. There are a group of surface soil stains that have been identified. WCH has been working with DOE-RL to get the 4 new orphan sites added to their scope and do sampling and characterization to determine levels and cleanup. The map was put together four months ago and doesn't represent the new sites. The new sites are at pipeline sites or places where historical data indicated there might have been a release. No major waste sites were identified.

Regulator Perspectives

John Price, WA Department of Ecology (Ecology), added because there are so many activities going on, Ecology has asked DOE-RL to put them all into one project plan. They are really close to a strategic approach. Ecology will ask for early action on some of these sites and should have a schedule by the end of the month.

Committee Discussion

- *What's the limit of hexavalent chromium for drinking water?* The limit is 100 ppb for drinking water. Cleanup is done for ambient water quality, however, which is 10 ppb at the river. So the current contamination is 100 times over cleanup level.
- *Have you decided on a cleanup method?* Scott said FH is considering inserting gas or percolating a reductive liquid to reduce the chromium in the vadose zone and in the groundwater. They have to test these methods in a lab first. Scott said this is assuming the chromium is too deep to excavate, which he thinks it is. Dennis added this site is close to the river and there are other places to do tests that are higher up where they can fine tune the methods before they get closer the river.
- *What is "percolating" through the vadose zone?* Scott explained that FH is not flushing the vadose zone; they are using a non-mobilizing solution to neutralize the chromium. It will change the valence and move it out of range of mobility. Wade asked if this could open up the change in chromium to a different phase, and if it is really stable. Scott said the calcium compound is perfect for using in the vadose zone and it has been effective in testing.
- *Can you show on a contour map what the contamination looks like going down?* Jim said the samples are the concentrations in groundwater; RL doesn't have a picture of what it looks like in the vadose zone yet. The purpose of the investigation was to find the source by identifying where they find the chromium in the groundwater. This will lead them to the areas of contamination in the vadose zone so RL can map out a plume or source. Dib Goswami, Ecology, added they are pretty close and have identified the area to within a few hundred square feet.
- *How long is the project funded?* Through the end of the year. Future work will include drilling more wells or boreholes in the southeast and northeast portions of the site to further define the plume. FH has additional money to do this. Now that they

are pretty close to the source they are going to be looking closer in the vadose zone. Jim said DOE-RL is going to look at another plume up north to identify another source area. They can apply the same methods there and focus the project funds to stretch the dollars and characterize the vadose zone. RL has asked FH to come back and modify their sampling plan, add wells, and look at vadose zone characterization in this area.

Update on Natural Resource Damage Assessment (NRDA)

Steve Wisness, DOE-RL, summarized the activities thus far on the NRDA process. DOE is working with the states of Oregon and Washington and with the Tribes on the development of an injury assessment plan. He said trustees will be involved in a collaborative approach from the first phase. DOE is also working on getting a new contractor involved that isn't associated with Hanford. The trustees met to talk about interests and Steve felt that everyone came away feeling like it was a good process. On June 19th and 20th they will be holding a workshop to develop a work plan. Steve said the timing is right to integrate this process with cleanup activities so they can be as efficient as possible. He concluded by noting they have senior-level trustees engaged in the process to help out if things get bogged down.

Barbara Harper, Confederated Tribes of the Umatilla Indian Reservation (CTUIR) and the National Resources Trustees Council (NRTC), summarized her perspective on the NRDA process. She heard from the right people and they said what she wanted to hear. After years of saying the NRDA is not going to happen, it is now. Barbara said the committee should set aside time at a future meeting to discuss the NRDA process; the whole process can take up to 20 years. She thinks they can conduct it in a flexible way so they can bring the results in to help inform methods for cleanup. DOE has identified \$200,000 to write the plan, but there is not any money set aside for the work. They will have to wait to see the 2009 budget to see if the level of commitment is reflected in money for this work. She emphasized that they don't want this process to detract from cleanup.

The meeting in June will be a regular NRTC meeting and the trustees need to come up with a preliminary scope. Washington Department of Fish and Wildlife (WDFW) have volunteered to manage the scope if necessary to put a buffer between DOE and whoever does the work. Barbara added the meetings in June are open to the public if anyone is interested in attending.

Committee Discussion

- *The legal staff can be a key element. Will they be involved up front?* Steve explained NRDA is a requirement within CERCLA so the attorneys are involved to insure compliance.
- *What is the driver for making this happen?* Steve said the timing is right. From a legal standpoint, they don't have to start the process, but in cleanup, DOE is getting to final Records of Decisions (RODs) and starting to embark on river cleanup. If cleanup is

going to be integrated, now is the time to do it. DOE has thousands of studies and a lot of data and they can start making decisions while incorporating injury assessment.

- *Will the plan be available to public?* Barbara said public review requirements are built into the process. It mimics the federal public involvement requirements. Steve added DOE has \$200,000 to do an injury assessment; beyond that they will have to see.

Update on Project Planning for the Environmental Restoration Disposal Facility (ERDF)

Al Hawkins, DOE-RL, provided the update on the Supplemental Environmental Projects (SEP) under consideration as part of the EPA fine for problems at ERDF. A commitment to do a SEP has not been made yet. DOE has to put a SEP in front of EPA that meets the criteria first. Al said these projects are not required but are encouraged. A SEP can only offset part of the fine. For many reasons, Al thought it would be easier to just pay the fine, but he noted the money then leaves the area and no money is invested locally. DOE is looking at possible SEPs; one they felt strongly about was converting some of the vehicles serving ERDF to biodiesel. Al said everyone liked the idea and it has a clear nexus to National Environmental Policy Act (NEPA) to lower the site's carbon footprint. However, DOE has been told Volvo won't honor vehicle warranties if biodiesel is used. They haven't given up on this idea for a SEP, but are investigating the issue with Volvo. Al said it is hard to come up with items that meet SEP criteria.

Other projects they are considering:

- Landfill training classes at Hanford that target radioactive waste landfills on a national basis. WCH would get the training classes set up and offer them for free.
- Providing a spill response boat that could be used in the local area.
- Revegetating the site with native plants. This is of interest to tribes as well.
- Improvements to B-Reactor. It's related to ERDF because if it doesn't get torn down it won't have to be put in ERDF.
- Wetlands: joining with another group or agency working on restoring a local wetland.

DOE will be working with EPA on some of these conceptual ideas to make sure they meet the criteria. Al explained it cannot be a project that DOE has to do as a part of the cleanup anyway, so some of these might not be applicable. It also can not be a project that is ongoing; it has to have a clear start and end date. Al said they have 30 days (until mid-May) to get back to EPA with SEP ideas. EPA has indicated if they see progress they can extend the deadline.

Kevin Bazzell, DOE-RL, informed the committee of the status of ERDF. Work at the zero-foot level, where no waste was been dumped, has resumed. DOE is working with the regulators to understand the issues, fix them, and move forward. In the near term, they can work at the 30-foot level and will help with more load phases to get back to

almost normal operations. They are still trying to get compaction methodologies back in place for the life of ERDF. Interim measures were taken so they can increase their working area. In the next couple of weeks, ERDF will be back up and running.

Committee Discussion

- *Is the primary problem at ERDF compaction?* Kevin said it is a couple of issues: there was the issue of falsification of records, and the compaction testing to determine if waste had been adequately compacted. Recent data done seems to show compaction was done adequately. The waste was credibly compacted in the past. However, DOE's goal is to get a process in place so they know how it is supposed to be done
- *Can you clarify the difference between compaction vs. crushing?* Kevin said the debris coming from sites with building materials needs to be crushed so there are no void spaces in the landfill. One of the processes insures that soil on top of the building materials has enough coverage to fill the holes. A control system is being put in place to deal with that issue.
- *The local transit agency is working on using biodiesel and they are not having problems with warranties.* Al said they will talk with them. He heard in Europe Volvo actually extends warranties for using biodiesel.
- *How can the money be spent?* Al said it depends on the fine, and DOE is not sure how much money they can use to mitigate and keep in the area. It won't replace the entire fine, but there is no limitation on splitting it up between projects.
- *What are your expectations from this committee or the board on this issue?* There is obviously a limit of things to pursue, but they want ideas from the committee. Committee members suggested:
 - An exhaustive cultural survey done on the whole site. There hasn't been one. There is a desire and a need but it has always been low on the priority list.
 - Windmills. Ken Gasper said on the site tour he learned the Waste Treatment Plant (WTP) uses 6 megawatts of electricity.

Groundwater Values Flow Chart

Jerry noted that several committee meetings have focused on this flowchart and it has undergone several different phases. Jerry felt that his values had been addressed in the latest version of the flow chart.

Regulatory Perspective

- Dennis suggested some changes to the flow on the right-hand side. He thought everything else works well.

Committee Discussion

The committee discussed comments on the flowchart from Todd Martin.

- 1st value – Board advice #113 said cleanup to both ambient and drinking water standards; ambient is more stringent. The committee agreed that ambient should be added to the 1st value to reflect old advice.
- 2nd value – use “Tri-Party Agreement (TPA) timelines” instead of “commensurate with risk.” The committee agreed.
- 3rd value – The Board has mentioned 150 years in previous advice about institutional controls and should reference that. The committee decided if they keep this more generic then any new advice will still apply.
- The committee agreed that only the first sentence should stay in Value 5. The rest of the text waters down the point.
- 6th value – should be deleted entirely. It is the purpose of the flow chart not a value. And it gives DOE a loophole. The committee changed the wording to better reflect that attenuation should only be considered in certain circumstances.
- 7th value – this could be misused by DOE because there is no reference to a timeframe for DOE control. The committee added “federal successors” to help define the expectation.

The committee discussed an accompanying piece to the flow chart. Shelley Cimon will work to develop this piece and send it out for a final review. The committee agreed to bring the flow chart to the full Board in June.

Committee Work Planning and Committee Business

- Jerry suggested that in another meeting the committee should look at the description of institutional controls and review old advice to further develop values on this topic. Pam Larsen said the HAB is not the first group to be dealing with this and should look at what previous sites have done. Susan Leckband added they also need issue managers for the topic.
- Dennis said there are two big decisions on CERCLA coming up: groundwater and pre-1970s transuranic (TRU) waste. He wants to bring the committee’s and the Board’s perspective into the discussion of these topics. Two additional subjects will come up soon for the committee to look at: 618-10 and -11 and 200-UW-1.
- Shelley said the DOE contractors should come before the committee to talk about the High Resolution Resistivity (HRR) technology. There is a lack of internal and external audits, and the Board may need advice on external audits on exploration of new technologies. Dennis said EPA has been telling DOE too much is hanging on the one test they did with HRR.
- Shelley said the technology proposed plan and road map have come out from DOE Headquarters. Comments are due until June 30th. If anyone is interested in responding, time should be set aside at the next committee meeting.

- Committee leadership nominations will be open over the summer and leadership selection will take place before September committee meetings.

Handouts

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

- 188-B-1 Burial Ground – Path Forward, DOE-RL & WCH, May 9, 2007.
- Chromium Source Investigation, James Hanson, DOE-RL & Scott Petersen, FH, May 9, 2007.
- Hanford Advisory Board – Groundwater Values Flowchart, RAP Committee, May 9, 2007.

Attendees

HAB Members and Alternates

Shelley Cimon	Pam Larsen	Maynard Plahuta
Robert Davis	Susan Leckband	Mike Priddy
Kenneth Gasper	Donna Morgans	Wade Riggsbee
Harold Heacock	Jerry Peltier	Dick Smith

Others

Kevin Bazzell, DOE-RL	Dib Goswami, Ecology (on phone)	Karen Caddey, CH2MHill
Al Hawkins, DOE-RL	John Price, Ecology	Barbara Harper, CTUIR & NRTC
Karen Lutz, DOE-RL	Dennis Faulk, EPA	Lynn Lefkoff, EnviroIssues
Jamie Zeisloft, DOE-RL		Emily Neff, EnviroIssues
Jim Hanson, DOE-RL		Scott Peterson, FH
Steve Wisness, DOE-RL		Gary Petersen, TRIDEC
		Lynette Bennett, WCH
		Jason Capron, WCH
		Richard Carlson, WCH
		Jack Donnelly, WCH
		Jeff Lerch, WCH