

FINAL MEETING SUMMARY

HANFORD ADVISORY BOARD
RIVER AND PLATEAU COMMITTEE MEETING
June 10 and June 11, 2009
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

Maynard Plahuta, River and Plateau Committee (RAP) Chair welcomed the committee, introductions were made, and the committee adopted the May recent meeting summary.

Maynard announced that the committee needs to nominate a new chair and vice chair for RAP. Nominations will remain open until the August committee meeting, at which time a new chair and vice chair will be selected.

Rehabilitation and Restoration of Fire-Impacted Areas

Gene Van Liew said the 2008 fire raised questions about the potential impact of airborne substances on properties and people. Substantial fires also occurred in 2000 and 2007 and Gene said it is important to learn about emergency plans, evacuation considerations, and plans for dealing with future fires.

Elizabeth Bowers, Department of Energy – Richland Operations Office (DOE-RL), said DOE has completed substantial work during recent years to test different methods, seeds and times to determine what works best for re-vegetation of the site. Contractor Fluor Hanford is responsible for re-planting after fires in the 600 Area. Washington Closure Hanford (WCH) oversees planting and remediation after demolishing buildings and creates test plots for various seed mixtures. Elizabeth said WCH will release a handbook on the types of vegetation that survive best in specific types of soils. She introduced Richard Roos, who is a plant expert at Hanford, to give a presentation on actions that

have been taken following the last major fires at Hanford, including success rates of the different seed mixtures and equipment that have been tested.

Richard reviewed the ecology of the Hanford site, which is generally a shrub steppe ecology that is highly affected by fire and includes invasive weeds and erodible soil. Fires clear protective vegetation from the soil and Richard said shrubs do not re-sprout from their roots after a fire. This results in erosion and dust, which causes health and safety concerns and affects filters and equipment. Richard said this dust is controlled by establishing perennial vegetation to reduce erosion and compete with invasive weeds. Cheatgrass and tumbleweed are flammable, and Richard said if vegetation that competes with those weeds can be established it reduces the probability of future fires.

Richard said the ideal objective for vegetation on the site is a mature shrub steppe plant community. This community would include shrubs, tall-stature grass, short grass, and cryptogams, a microbiotic crust of organisms that physically bind to the soil and form a layer that protects it from wind erosion. Richard said this is the desirable condition, but even without shrubs this would still be a very good condition. Perennial vegetation competes effectively against invasive plants, but without short-stature grasses the ground becomes covered with cheatgrass, creating highly flammable conditions. Richard said after the 24 Command Fire the affected land was planted with perennial grasses to protect the ground from erosion. In contrast, an area that was re-vegetated following the 2000 fire but burned again in 2007 was full of tumbleweeds and grasses after the 2007 fire.

East of Army Loop Road and west of the industrial portion of the 200-West Area there is an area referred to as 1,000 Acres that contains seeded grasses and planted sagebrush seedlings. Richard said the intent in this area was to create “competent islands” of sagebrush surrounded by halos of weed-free areas. Richard said this was a solution for the high cost associated with planting shrubs. These islands of shrub-steppe habitat spread into fields of cheatgrass and weeds as they grow. Approximately 15 percent of the total area was originally planted and seedlings were produced from hand-planted mother plants. Richard said the goal was to plant enough shrubs to create wind protection. He said there is now enough sagebrush and perennial grasses that the condition is expected to improve and eventually reduce the amount of cheatgrass in this area.

Richard reviewed re-vegetation actions after the Wautoma Fire in 2007. He said experience with dust and other issues created by the 2000 fire led to support for re-planting efforts in 2007. The first priority was to establish perennial grass. Richard said there was not time to map all of the soils in the area to create a specific seed mix so a variety of seeds were included in the mix. The mix included Sandberg’s bluegrass, Indian ricegrass, needle and thread, thickspike wheatgrass, bluebunch wheatgrass, bottlebrush

squirreltail, sand dropseed, yarrow and spring barley. Richard said spring barley, which is neither native nor perennial, was used because barley germinates almost immediately. This created a structure above the bare soil to disrupt surface winds, mitigating the effects of harsh winds and erosion. Richard said, with the exception of the 200 West Area, planting after the 2007 fire took place south of Route 11 and east of Highway 240 to Beloit Avenue. This area covered more than 7,000 acres, on which 203,000 pounds of seed was planted, including 133,000 pounds of native perennial seeds.

In 2008, 12 transects were established that ranged from zero to 2.7 seedlings per square foot for an average of 0.9 seedlings per square foot. Richard said tall grasses in a very dense area would have 0.2 to 0.25 seedlings per square foot, so the average in these transects provided plenty of room for competition to reduce the number of seedlings to the expected number. Once the grasses were growing, shrub seeds were collected at the end of 2007 and in 2008. Two rows of shrubs were planted six feet apart with six feet between plants within the rows. Richard said approximately 20,000 plants in eight linear miles were planted. Once the plants were in the ground it was a harsh transition from the greenhouse. Richard said for 10 to 12 days conditions were moderate, with temperatures between 40 and 50 degrees, but then the temperature dropped below zero. He said this spring it was determined that there was a 75 percent survival rate, which was within the expected range.

Richard said native Hanford seed is essentially unavailable and seed source was an issue. A seed supplier that had Hanford-specific seeds was selected, but the rest of the seeds had to come from sources as close to the genetics and climates at Hanford as possible. Last year five major native seed growers were contacted and contracts were established to allow them to come onto the Hanford site to select native seeds to grow in their production fields. Richard said by 2010 Hanford-specific native seed should be available to purchase through this process. Sandberg's bluegrass is the foundation of the re-vegetation work at Hanford, and Richard said this is an incredibly capricious species. A series of trial plots were planted a year ago to determine factors that affect the establishment of Sandberg's Bluegrass. Richard said this should provide valuable observations based on the first trial plots.

Regulator Perspectives

- Ginger Wireman, Washington State Department of Ecology (Ecology), asked whether seeds are sprayed or if they are part of a seed mix that provides nutrients. Richard said nutrients are not included. Cone spreaders that spread seeds on the soil and press them into the ground with an impacter are used.

- Ginger asked what the fire control and weed control budget is and what is done to keep tumbleweed to a minimum in areas that have not been re-seeded. Richard said there are many old agricultural areas on the Hanford site that have cheatgrass and tumbleweed. The fire department wants to burn these off and follow this with a planting of native grass.
- Ginger said the Washington State Department of Corrections has a native plant nursery program in the Pacific Northwest and suggested DOE and Hanford contractors start discussions with the new prison to coordinate these efforts.

Committee Discussion

- Shelley Cimon asked whether spring barley out-competes cheatgrass. Richard said it does not, but something is needed to provide erosion protection. He said spring barley also dies in cold weather and rare plants that manage to avoid the frost did not adapt to the dry conditions on the Hanford site.
- Shelley asked how many chemicals are being used on the site and whether there is an effort to minimize this. Richard said issues such as tumbleweeds in waste sites and noxious weed issues in wild lands on the site are sprayed appropriately heavily. Due to low precipitation, one application allows for three to four years of control. Richard said since weeds typically have long-life seeds, after 12 years of applying chemicals every two to four years, weeds are rooted out of a particular area. He said once those weeds are out it is a matter of monitoring and spot-spraying these areas.
- Wade Riggsbee said Yakama Nation is concerned about chemical application at Hanford and has been working to create a database to record where applications are taking place and what happens as a result. Richard said resistance in noxious weeds has not been observed, and in industrial weeds there appears to be some resistance to a herbicide that has been used for many years. He said Hanford has programs to look at different herbicides.
- Bob Suyama asked how long it takes after a fire to build up enough non-flammable material so it is not a fire hazard again. Richard said in a shrub steppe environment the understory has very little flammable material and the mature shrub-steppe is resistant to fire. The typical fire cycle from one fire to the next in a mature shrub steppe is 50 to 100 years. Richard said with cheat grass and tumbleweed this cycle is reduced to approximately five years.
- Vince Panesko said the first re-planting effort took place in 1973 and failed. A sprinkler system was then put in place, which also failed. He asked what DOE is doing to ensure continuity in this program, and whether it is a contractor activity. Elizabeth said DOE has been very successful in demonstrating that re-planting affects

safety as well as environmental issues. She said there have also been many lessons learned about how to plant economically and effectively. Vince asked which contractor is responsible for continuing these efforts. Liz said Fluor Hanford has been responsible for this, but when its contract is up in two weeks the new mission support contractor (MSC) will take over. She said DOE is working to ensure this program continues.

- Pam asked if Hanford works with the Pacific Northwest National Laboratory (PNNL) for this program. Liz said representatives from all contractors, including PNNL, Fluor Hanford and the United States Fish and Wildlife Services (USFWS) participated in the process of looking at what seeds to plant.
- Shelley asked how long it takes for cryptogams to form. Richard said if sites are stabilized cryptogam covers are established within five to 10 years. He said cryptogams are not artificially enhanced, but DOE does work to stabilize them.
- Vince asked whether it is true that no contaminated material burned inside the fences during the 2000 fire. Richard said in the 2000 fire the 1,000 Acres area was not contaminated and had not been used for Hanford industrial purposes. He said he is otherwise unaware of anything contaminated inside the fence that burned. Vince said Hanford reported that nothing contaminated burned outside of the fence, but there are ponds and trenches in the 200-West Area. He asked what is being done with these radioactive areas. Richard said he is not aware that any of those areas burned in the 2000 fire. He said in the 2007 fire there was a strip that burned across one of the stabilized trenches, S-16, but he does not recall any other contaminated areas that burned. Ray Johnson, DOE-RL, said the fire department was aggressive in these areas but the fire did go up to the fence and affected the S-16 and S-19 ditches. Vince asked whether this fire also affected the BC Cribs. Richard said the BC Cribs did not burn, but the BC Control Area did. Ray said air monitoring that was conducted did not indicate that any materials had become suspended in the air due to the fire and the only part of the BC Cribs that burned was a corner of this area that burned in the 1984 fire.
- Vince said long-term stewardship (LTS) has been a concern, and long-term maintenance of vegetation is a cost that would be incurred for LTS monitoring. Vince said this aspect has not previously been factored into the cost of dealing with fires and re-vegetation.
- Wade commented that it is important to look at lessons learned, such as the BC Cribs, where radiation reduction took place and uptake and continuous recycling contaminants across the BC Area occurred as a result. He said it is still important to look at applications such as pesticides and herbicides to determine future problems. He said this component needs to be looked at, and the Gable Mountain Ponds will become a project due to this.

- Pam said she was surprised when Debra McBaugh, DOH, said in her presentation at the recent Hanford Advisory Board (HAB or Board) meeting that there was no airborne plutonium measured after the 24 Command Fire. She said her recollection was that plutonium had been detected after this event.
- Maynard asked whether this presentation should be given to the Board. The committee agreed that it should be presented, and the more that the public is educated on this issue the more it will be understood and appreciated.
- Vince recommended that how DOE is handling the radioactive areas that are outside the fence as part of fire issues should be added to the presentation.
- Dick Smith asked the connection between DOE's re-vegetation program and the new greenhouse in the Tri-Cities. Richard said DOE has been working with the greenhouse, but it does not have the capacity to grow the volume of plants needed for Hanford's programs since it is more of a research facility.
- Gene asked whether DOE has looked at a bailer to remove the weeds on site, rather than burning them. Richard said bailers are a good alternative to burning but are expensive.

Resource Conservation Recovery Act (RCRA) Site-wide Permit

Pam said the state has been working to develop a more comprehensive Resource Conservation and Recovery Act (RCRA) site-wide permit. She reviewed the purpose of the presentation, which was to provide a conceptual understanding of the permit and a status report on its release, to address where Ecology would benefit from HAB feedback, to discuss where the permit will rely on information contained in the Tank Closure and Waste Management Environmental Impact Statement (TC&WM EIS), and to determine where Ecology expects the RCRA regulations and Tri-Party Agreement (TPA) to be inconsistent. Pam said her understanding is that a permit of this nature must rely on an EIS, and since the TC&WM EIS has not been finalized Ecology must decide how to proceed.

Ron Skinnarland, Ecology, provided a status update on the site-wide permit, including the schedule for its release. He said Ecology has ideas about how to effectively release the permit and help the public understand what is in the permit and its key components. Ron said the TC&WM EIS is only necessary for a portion of the permit, which has State Environmental Policy Act (SEPA) coverage under the initial permit that was issued in 1994. Ron said one key issue associated with the permit is that EIS coverage is needed when siting a new facility, such as the Integrated Disposal Facility (IDF) or the Waste Treatment Plant (WTP). He said the National Environmental Policy Act (NEPA) can be used to satisfy the state requirement if it is adequate. Another key issue is that Hanford

does not have coverage for closure of the single shell tank (SST) system. Ron said the EIS also covers whether waste from other sites can be shipped to Hanford.

Ron said the goal of the permit, which is formally called the Hanford Facility Dangerous Waste Permit, is to protect human health and the environment. The current permit is on its ninth revision. Ron said the permit is required under the state's Hazardous Waste Management Act and Hanford dangerous waste regulations and covers all of the dangerous waste treatment, storage and disposal (TSD) units on the 586-square-mile site. The permit regulates the actions of DOE and its contractors for the management of hazardous and mixed waste and creates an enforceable set of requirements. Ron said these requirements are specifically focused on facilities such as the Waste Receiving and Processing Facility (WRAP) and the BC Ponds. The first permit was issued in 1994 and must be re-issued every 10 years.

Ron reviewed the sections of the permit, and said all hazardous waste RCRA permits have general and standard conditions. Part one includes these standard conditions for all TSD units, such as reporting requirements and severability. Part two includes general conditions for Hanford, such as the role of the TPA, training, and facility record-keeping. Parts three to six have specific conditions for Hanford waste sites and facilities.

Ron said part three of the permit covers operating facilities. He said each facility would usually have its own permit, but because Hanford is so large each facility has its own permit within the overarching site-wide permit. The operating facilities covered by part three of the permit are WTP, the mixed-waste trenches and the sub-reactor trench, the Effluent Treatment Facility (ETF) and Liquid Effluent Retention Facility (LERF), IDF, the Central Waste Complex, the 242-A Evaporator, double-shell tanks (DSTs), and seven other facilities.

Ron reviewed part four of the permit, which covers corrective action areas. Hanford has a number of sites, and Ron said some of these were identified as Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) releases and others were RCRA past-practice units. Part four addresses sites where dangerous waste has been released. Ron said the agencies have agreed to use one process to do cleanup, so cleanup of RCRA past-practice sites will be integrated with surrounding CERCLA sites.

Part five of the permit covers closure units, which are units that are no longer operating and are undergoing closure. Ron said this is not an operating permit because these units are not accepting waste, but it is contamination that needs to be cleaned up. Part five covers a total of 19 closure sites, including cribs, ponds, ditches and SSTs. Part six of the permit covers post-closure sites, or sites that have been closed already but still need

groundwater monitoring. Ron said this covers two units, which have deep or more widespread contamination, such as the 300 Area process trenches. It will be necessary to continue to monitor these sites after the active cleanup is done.

Ron reviewed the status of the permit's preparation. He said the RCRA group is currently doing an oversight review of the permit to ensure the language is clear and correct and that there are not legal issues with its content. He said the group is working through all parts of the permit and this will take a few more months to complete. The permit was originally going to be released for public comment by July, but this has been moved to October. The document will go through a 90-day public-comment period and a workshop is planned with HAB. Public hearings will take place in the Tri-Cities, Seattle, Portland/Vancouver and Spokane.

Ron reviewed areas of the process that would benefit from HAB advice. He said continued feedback on public involvement is needed. The permit will also include a description of variances from the regulations. Ron said this would cover issues where the agencies have been unable to comply with regulations, such as SSTs, which are not compliant but will take time to close. Another area that would benefit from HAB advice is whether the permit protects human health and the environment.

Ron said the permit will rely on the forthcoming TC&WM EIS for future decisions on supplemental tank waste treatment, including adding facilities like WRAP, T Plant, and additional treatment for low-activity waste (LAW) such as a second LAW facility or bulk vitrification. Ron said the permit will also rely on the EIS for future decisions for tank closure because not all of the tanks can be completely emptied and a statement of the impact of this is needed. Additionally, the potential for accepting off-site waste continues to be a major issue, and the EIS evaluates the effects of disposing off-site waste at Hanford.

Ron said Ecology does not expect inconsistency between the TPA and state regulations, which are based on RCRA. Sites that have been called RCRA sites and those called CERCLA sites need to be reconciled. Ron said this will require changing the TPA, which says there are separate processes for RCRA and CERCLA. This change would undergo public comment. The permit uses TPA schedules and the TPA is the first attachment to the permit. Ron said the agencies do not think there will be alignment issues, but if there are the language on these will need to be changed.

Committee Discussion

- Dale Engstrom asked if the permit should have been re-issued in 2004, since it must be re-issued every 10 years and the first was issued in 1994. Ron said each contractor

has to update the permits for the different facilities and working with groups on a staff level has taken much longer than originally anticipated. Additionally, Ron said not all of the units were in the permit when it was originally issued. These were intended to be added during the 10 years but this was not done, so now the conditions for all of the units must be written.

- Vince commented that it seems like there have been permits for facilities year after year as well as operable units (OUs) under CERCLA. He asked why there was not a global permit, rather than breaking it down into little pieces. Ron suggested going back to the TPA and the HAB presentation on the Central Plateau (CP) to look at this issue. For the inner area, the agencies are trying to determine what decisions should be made under CERCLA, but just for the CP there are 800 sites, 800 buildings and approximately 20 RCRA buildings. Ron said this is intended to be in Appendix B of the TPA and Appendix C covered the CERCLA units. There is a master plan and Ron said the agencies have not moved away from that. Operational waste facilities will be covered by a permit, while burial grounds or buildings will be covered by dangerous waste regulations. He suggested that it would be helpful to list the facilities that have a permit. Ron said the CP strategy will include all of the cleanup sites that will be covered by CERCLA.
- Harold Heacock asked where the state gets regulatory authority on a federal facility. Ron said in 1992 DOE and EPA looked at a number of sites across the country to come up with cleanup requirements and a law was passed that said federal facilities are subject to certain laws, including state laws. This is why state cleanup laws were applied to the site.
- Pam asked for examples of corrective action areas. Ron said in the N Area there are some RCRA past-practice units. Madeleine Brown, Ecology, said there are 100 of these areas in R-1 where diesel fuel leaked. Ron said the investigation of SST leaks is another example of this.
- Ken Gasper said he is curious whether certain facilities, such as U.S. Ecology, are covered by the permit. Ron said U.S. Ecology is covered by a different set of regulations because it is a commercial low-level waste (LLW) facility that is licensed under the Department of Health (DOH) through the Nuclear Regulatory Commission (NRC). Ken asked whether Energy Northwest is covered by the permit. Ron said this is a separate facility regulated by the NRC. Madeleine said this facility is not storing, treating or disposing of hazardous wastes, as it only has materials for 90 days. Ken asked whether the Fast Flux Test Facility (FFTF) is included. Ron said the reactor is not included, but a facility within it that is storing sodium is included. Ken asked whether the Laser Interferometer Gravitational Wave Observatory (LIGO), the Nike Sites or Rattlesnake Mountain are covered by the permit. Ron said these facilities are not included. Ken suggested that the presentation should reflect these facilities.

Maynard said it would help to say the permit covers DOE's dangerous waste TSD units to clarify that these other facilities are not included.

- Vince said the operating facilities covered under part three currently have permits and operate according to these. Ron said some do and some do not, and in an ideal world there would have been permits issued for all of these during the first 10 years of the site-wide permit. Ron said these units will all be included in the renewed permit. Vince asked whether there is a possibility for permit adjustments for individual facilities. Ron said there is for some permits, and some are operating under specific requirements but they are not in the permit.
- Vince asked the difference between TSD units operating under final and interim status standards. Greta Davis, Ecology, said final status facilities could not meet 806 standards under 17303 Waste Acceptance Criteria (WAC), meaning they have to close, so these were allowed to continue under interim standards. Ron said with dangerous waste regulations, the concept is to manage the waste from cradle to grave, and interim status requirements are identical but are for facilities that do not have a permit to regulate waste. He said the only difference is that final permit conditions only need to include requirements that need to be complied with. Vince suggested that it may be helpful to have a future presentation on this process.
- Gerry Pollet agreed that a future workshop would be helpful, including an explanation of what is happening with units that have been in interim status for a long period of time as well as the U.S. Ecology site. He said another important issue is why the U.S. Ecology site is not covered by the site-wide permit when it has managed mixed waste.
- Gerry asked whether it is worth exploring the question of direct action and putting a site under Superfund CERCLA where conditions under the RCRA permit for monitoring such sites would not be imposed. He said one example is taking a unit that is contaminating groundwater, putting it under corrective action, using CERCLA, and comparing the differences in monitoring requirements over a period of 10 years. Wade said this is a topic area he would like more clarification on because under RCRA there are corrective actions, and corrective action investigations focus on identifying the releases and treating and disposing of them. He said he thinks it is important to focus on the implications of integrating RCRA into CERCLA and eliminating many of the closure plans. Shelley suggested that it would be helpful to have a map of what is included in the permit in this presentation.
- Gerry asked whether there are schedules proposed for the closure of facilities and monitoring investigation phases. Ron said all of the permits will include schedules but he does not have them in the handout. He said if facilities cannot comply immediately then regulatory agencies can set a schedule to create a better plan within a certain number of years. He said the schedule for doing CERCLA investigations

may be three years away, so the schedule would be to do the TSD units at the same time as the CERCLA sites.

- Maynard asked whether further discussion is needed for Ecology and EPA to resolve issues with integrating CERCLA and RCRA. Ron said the TPA agrees that no agency has the final authority. The agencies have agreed on ways to do cleanup with RCRA and CERCLA even though they may not agree on who has the authority over specific sites. Ron said legal language will be inserted into the permit and the TPA stating the process the agencies will use. On the ZP-1 record of decision (ROD) there is language about state expectations, and Ron said Ecology thinks this is a good model.
- Pam asked how confident the agencies are that the permit will be released in October and when it would be helpful to receive input from the HAB. Ron said based on where the units are he thinks the permit will be ready in October. There are still some legal issues that need to be resolved. Ron said comments on what needs to be clarified are helpful, and Ecology will continue to update the HAB on the progress of the permit.
- Vince asked whether the permit will address the amount of waste that is left in the soil and what will be included in the unit-specific closure plans that address this issue. Ron said these are the units covered under part five of the permit that will have closure plans. Vince expressed concern that there is not information about how much waste is left in the soil. Maynard said he thinks when the plan is released information about these decisions will be available.
- Gerry said it is important that the differences between RCRA and CERCLA are understood. He said under dangerous waste permits there will be a plan for dealing with this waste. Under CERCLA there are remedial investigation criteria and less stringent requirements for how that question is decided. He said this is an important policy issue. Ron said for the 300 Area, the TPA Change Package includes six RODs on the River Corridor and in order to get this approved EPA had strict requirements since there is widespread contamination that will have long-term groundwater effects.
- Gerry said closure plans for specific units are proposing caps as their baselines. Ron said in an ideal world everything is cleaned up, but if not it must be monitored under RCRA or CERCLA. Gerry said monitoring requirements are different based on whether they are regulated under RCRA or CERCLA. Some CERCLA units must have a closure plan submitted with closure-specific documents. Gerry said the baseline presumes caps, but caps might not meet RCRA requirements for not using landfill closure until retrieve and treat efforts have been exhausted. He said there is also a difference in remedy that relates to the TC&WM EIS and how these two issues are viewed in conjunction.

- Pam asked for the definition of a variance. Ron used the example of SSTs, which were built without secondary containment, resulting in 70 tanks that have leaked. The standard for tanks is that they need a second liner and leak-detection between the two liners, which SSTs do not have. Ron said the variance that is being granted is that waste can be stored in those tanks as they are being emptied and closed. It could be required as a permit condition that these tanks be reconstructed, but this would probably be cost prohibitive. Ron said instead a variance is being granted.
- Maynard asked how many variances exist. Ron said variances relate to a literal look at RCRA regulations, and would include tanks that are not built to the right standard, tanks that were not emptied in time, and sites that have been closed and should be cleaned up as soon as liquids are no longer being placed in B Pond. Maynard asked if the variances are problematic and whether there is another choice for dealing with these issues. Pam asked whether the SSTs are not being dealt with because the TC&WM EIS has not been released. Ron said there are permits on how they will operate while going through closure. He said there will be a SST permit that provides a schedule, and it is possible to determine actions on the SSTs without the EIS.
- Bob Suyama asked whether the permit lists the variances. Ron said this is in the statement of bases. Bob suggested that the Board look at each permit and its variances and give recommendations on the ones they think are issues.
- Shelley asked whether there will be future variances. Ron said there will. Shelley asked if ModuTanks will be included in this and how far from the regulations the agencies are willing to go with the variances. She suggested that this be a future topic. Pam said the Board could develop advice on this before October.
- Dale said one issue Oregon and Washington have been sensitive about is the idea of importing material to Hanford. He said one section of the permit addresses importation of material, and asked whether this is built into the permit. Ron said there is currently a moratorium on waste coming to Hanford because of the EIS and that will wait until the ROD. He said the state is acutely aware of the public's concern about off-site waste coming to Hanford and the focus being on the cleanup of Hanford. He said satisfying this would be a good discussion, and past experience has shown that this kind of action tends to lead to litigation.
- Shelley expressed concern that there are loopholes being built into the dangerous waste permit, such as variances and off-site waste. She said the question is whether it is judicious to include this in the permit because it then becomes an option. Ron said the agencies are trying to come up with a reasonable schedule and strike a balance with compliance. Shelley asked what compels the agencies to put these elements into the permit. Ron said the permit is a set of requirements and the issue is that Hanford is not compliant today. Gerry said variance is a legal term and it is important to understand that a variance may not be a loophole. He said the compliance schedule is

a variance because Hanford cannot be compliant today. Shelley said variances are needed, but as cleanup moves forward it is important to consider how far cleanup is stretched away from compliance.

- Pam asked Ecology when they would be ready to come back and answer questions on the permit. Ron said this could take place in July, August or September before the permit comes out. He said the plan would be to have a workshop for the HAB around the time of the public comment period.
- Gerry suggested that it will be important to look at the TC&WM EIS and develop comments in order to cover issues related to the RCRA permit. Harold said he thinks the EIS and the draft permit are both needed, and suggested that a workshop take place in August.
- Shelley asked when EPA will weigh in on the permit. Ron said EPA is reviewing it at the same time as DOE and Ecology must satisfy EPA Region 10 requirements. He said it is up to the regulatory agencies and permitting facility to come up with a permit that satisfies regulations.
- Bob suggested that a discussion of the NEPA, RCRA and CERCLA processes and interactions would be useful. Pam said this could precede the next discussion of the site-wide permit.

RCRA Permit Topics for Further Discussion (As captured on flip chart notes at the meeting)

1. Workshop - Need EIS and draft permit (August)
2. Clarify difference between interim and final status
3. Which facilities are “in” vs. “out”? (Maps)
4. What are differences in having corrective actions under CERCLA versus monitoring implications? (vs. RCRA) - Integrating RCRA and CERCLA
5. Schedules for closure of facilities and remedial investigations
6. Generally, compare and contrast RCRA and CERCLA
 - a. Monitoring
 - b. Remedy

River Corridor CERCLA Decision Documents and Remedial Investigation and Feasibility Study (RI/FS) Schedule

Shelley said in the interim of the EIS release there is work taking place. She said the committee wanted to receive an update on the CERCLA decision documents for the River Corridor to determine the opportunity for the Board to weigh in on the Remedial Investigation and Feasibility Study (RI/FS) work plan.

Jim Hanson, DOE-RL, gave a presentation on the River Corridor Integrated RI/FS Work Plan in the 100 and 300 Areas. He said RI/FS Work Plans were submitted for the K and D&H areas in the beginning of June. The TPA milestones are still being negotiated and are out for public comment. For the K and D&H areas, the milestones were due on May 31 and were submitted on May 29. Jim said these are being used as a template for others that are due during the next few months, including the BC Area, N Area, F Area and 300 Area. DOE, EPA and Ecology divided the reactor areas in River Corridor decision unit boundaries and the documents will be submitted according to these decision areas.

Jim reviewed a summary of River Corridor characterization and investigation activities that have been accomplished in the past 13 years. This included science and technologies that have been introduced and technologies that will be used as an integration with the final remedies. Jim said there is also a section in the document that presents all past material and summarizes this data as a component of the integrated work plan in order to get an integrated picture of what is happening on the site. After the implementation of the sampling and analysis plans, DOE will do the RI report, which will incorporate more of this material to create a complete picture.

Jim said the work plan objectives are to document information about facilities, soil and groundwater in the 100 and 300 Area River Corridor decision units. Jim said data and information needs to make final cleanup decisions have been identified for the 100 and 300 Areas. The approach to collect this information is written into a part of the RI/FS work plan called the sampling and analysis plan (SAP). Additionally, Jim said this historical information and additional information will be combined to support final cleanup decisions. Data collected during implementation of interim action RODs, site-monitoring activities and studies will be used to assess the potential applicability of treatment technologies.

DOE just turned in a decision document for the 100 Area, and Jim said there were five 100 Area decision units and one 300 Area decision unit included in this. In the future there will be addendums for BC, F and N. Jim said the 300 Area decision document will have a separate RI/FS work plan, rather than an addendum like the 100 Area decision units. Jim said after completing the work during the next year to implement the SAP, a RI/FS will be developed for each decision unit. A proposed plan with a summary of the investigation and evaluation and a preferred remedial alternative will also be prepared for each decision unit and will be issued to the public for review and comment. A final ROD for each decision unit will then be developed and approved by the Tri-Parties.

Jim reviewed how these activities will be integrated to create the RI/FS study. Previous investigations, interim actions, monitoring and assessments, and evaluations are part of a

systematic planning approach to identify data gaps and needs. A field investigation and RI/FS report will then be completed. Jim said monitoring and assessment will continue to take place. There are two contractors – one does waste sites and source remediation and the other does groundwater activities. Jim said the goal is to create an integrated approach of soils and groundwater to make sure the source area has been remediated so continuous leaching into the groundwater does not take place. Jim said aligning the RODs for River Corridor decision units will ensure these activities are melded together.

Jim reviewed the schedule for the RI/FS work plans. The work plans and addenda for the 100 and 300 Areas will be submitted for regulatory review and distributed to tribes and stakeholders during 2009. After approval of the work plan, six-to 12-month field investigations will be conducted for each decision unit, followed by a proposed plan and a final ROD. Jim said interim actions from the past will feed into the final remedies. The last of the six RODs will be completed by 2012. Jim said post-ROD activities will include implementing the final remedies and identifying land-management controls and monitoring requirements. Remedies will undergo a five-year review to verify long-term effectiveness and protection.

Jim said for the D&H Area DOE is working to characterize the plumes, specifically the chromium plume that extends into the H Area. DOE is currently actively working to expand the existing pump-and-treat system to deal with the plume in this area. For the K Area, the pump-and-treat system has been expanded to a capacity of 1,100 gallons per minute (gpm) as of May 20. Jim displayed maps that showed the contents of the analysis and sampling plan, including additional boreholes and monitoring wells as well as sampling locations for collecting groundwater data on the D&H and K Areas during the next year.

Jim said the executive summary describes how many boreholes and monitoring wells will be put in place and how many samples will be collected. He said the SAP justifies data needs and gaps and a conceptual model in each document describes how the operations occurred and contamination was identified in these locations. DOE has worked to highlight areas where chromium is either processed or piped, which will require further investigation. Additionally, Jim said D&H waste site activities have been ongoing for a number of years and 50 percent of the waste sites have been completed in terms of interim actions and approximately another 30 percent are in progress for interim actions. The K Area has had ongoing spent-fuel activities, and only 20 percent have been completed in terms of interim actions and remediation. Jim said DOE plans to continue to implement and remediate based on the interim action approach, and anomalies encountered in the field are incorporated into that process. The plans include the number

of waste sites for each reactor area and Jim said DOE has tried to lay it out in a rational way to give perspective.

Regulator Perspectives

- Laura Buelow, EPA, said Ecology took a proactive role in scheduling a meeting with EPA to discuss initial questions. She said she will be following the issue for the overall plan and EPA is glad DOE spent extra time doing internal reviews.
- John Price, Ecology, said in the current TPA change packages that just went through public comment, the agencies committed to trying to quickly finish some actions, such as the work plans and RODs. Ecology will send comments to DOE by July 28. John said with American Reinvestment and Recovery Act (ARRA) funding, the agencies cannot afford to take extensions on this document. He said Ecology intends to meet with DOE and contractors to discuss the decision documents. On areas of disagreement, John said Ecology will accumulate a small set of comments to take to upper management with the goal of identifying disputes by October 15 and having the D&H Work Plan approved a few weeks later.
- John said he does not know where policy advice would apply to these work plans. He said he thinks it is possible to have decision documents for the 100 and 300 Areas, and in order to do that there must be a decision framework for the reactors. He said a decision on the reactors is probably a good area for policy advice during the next couple of years.

Committee Discussion

- Sandra Lilligren asked whether addendums have SAPs. Jim confirmed that they do.
- Bob asked when the committee can see the 100 Area Work Plan and its associated addendum. Jim said this has been distributed to the HAB, along with the state of Oregon, the tribes and the trustees. Bob asked whether there is a way to view it online. Jim said he will check on this. Nick Ceto, DOE-RL, said it would be valuable to identify information gaps and have a dialogue with the agencies and the HAB to ensure these big-picture issues are being addressed. Jim said Ecology and EPA have not had an opportunity to communicate with DOE on their impressions of the document, and he said he hopes they will obtain valuable information from them.
- Maynard asked when it would be helpful for the HAB to weigh in. Nick said it would be fair to have regulators weigh in first, so the end of July may be a good time. Maynard asked when the public review period will start. Nick said there is no public review period. DOE has deferred some of the sampling work that would originally be done for a RI/FS and is continuing to do this for waste control. He said once the

regulators have commented on the document it would be helpful for the HAB to weigh in on additional questions based on the proposal and the agencies' comments.

- Maynard asked whether the work plans could be changed to accommodate HAB comments. Nick said if on August 1 DOE has received agency comments but is unable to answer a HAB question there is time to accommodate for this when DOE finishes the SAP. Maynard said the Board may identify information gaps in its advice and would like to know what gaps DOE saw and what has been addressed. John said the documents will also go to tribal nations and Oregon for technical review comments, and these will be incorporated into the process. Maynard said HAB does not have the resources to review all of the documents but they could weigh by agreeing or disagreeing with reviewers' comments. Laura said the regulators have not yet seen the work plan and there is still a chance there may still be major changes.
- Doug Mercer asked how the stewardship concept and idea for the post-remedial action phase will be integrated into the River Corridor RI/FS process. Nick said the end state along the river is fairly certain, as this is a national monument. There is also supposed to be a site-completion framework that will be a compendium document. Although this document is not directly related to the RI/FS process, it will provide an explanation for how to finish cleanup on the site. Nick said DOE knows it will have stewardship responsibilities for waste management along the river for some period of time and DOE expects this will be fairly small. On the Central Plateau, however, Nick said DOE is cognizant of the need for a plan that is thoughtful about how this fits with the cleanup to make sure stewardship activities are minimized.
- Shelley asked what is required for de-listing from the national priority list (NPL).
- Shelley asked why John brought up ARRA funding in relation to the work plans. John said with this funding all three agencies will be extremely busy. Ecology's strategy is to be crisp in its review, minimize the number of extensions, be clear in identifying areas where there are substantial disagreements with DOE, and resolve these disputes with upper management.
- Doug asked who is responsible for making sure stewardship is being considered in remedial actions along the river. Jim said many people within DOE are responsible for different components of stewardship. He used the example that there is currently a stewardship component in terms of groundwater monitoring and sampling and in the future pump-and-treat systems will be established to reduce hexavalent chromium contamination along the river. He said DOE will implement a monitoring framework to ensure continued protection. With CERCLA, there is a five-year review process that requires DOE to go through a remedial process optimization approach. Jim said this is why DOE has integrated remediation and groundwater, which also ties to the issue of stewardship. Nick said the site will eventually be transitioned to legacy management. In the meantime, DOE has not resolved the administrative mechanism

that will be used but will continue to be cognizant of this. Doug emphasized that having an oversight role of legacy management at the site is essential.

- Pam said having LTS as a ROD requirement ensures it will take place and the CERCLA five-year review process does not always identify new issues to be sure monitoring continues. She said as the agencies look at final decisions in the River Corridor HAB will expect regulators to put requirements for stewardship and funding for stewardship and monitoring into the ROD requirements.
- Maynard said an effective analysis of the actual cost is important for LTS, in addition to funding for stewardship. He said the long-term costs for maintaining stewardship versus the costs of not implementing LTS should be considered, as well as the value of the amount for LTS indicated in RODs. Shelley said there also needs to be a political framework for continuing stewardship. Nick said there has been an increasing emphasis, especially by EPA, that recognizes that past remedies have failed and there was nothing in place to make sure institutional controls (ICs) were kept in place. Nick said there is an IC plan in place for the site that is continuously updated.
- Pam asked what would be a reasonable timeframe for the Board to address this. Nick said in September or October after the fiscal year (FY) is over.
- Dick Smith said it was indicated that EPA is responsible for one area and Ecology for another, and asked why they are separated. John said when the TPA was put together the site was divided between the agencies due to workload issues. He said when decisions are made a buy-in is needed from both regulatory agencies so they work side-by-side on similar issues on the reactor areas. He said he thinks the reactor areas are good decision units and there are discreet problems that can be dealt with in each area.
- The committee asked when the most useful time for the HAB to weigh in would be. Jim said DOE planned to meet with Ecology that day and the second week of July on the D&H Area. Additional meetings are set up in mid-August to go through regulator comments. He said a similar process for the K Area will take place in tandem with the D&H work. DOE will need time to process the comments from regulators that they will receive at the end of July, so mid-August would be another opportunity to go through the content of the material.
- Shelley said she would like RAP to look at the main document and have a work group go through it to feed into the process, with the goal of providing feedback by the second week of July.

Potential HAB Input (As captured on flip chart notes at the meeting)

1. Variances
 - a. Listed in permits
 - b. Identify any concern areas through categories (e.g., schedules, standards choosing not to apply to Hanford)
 - c. Are variances appropriate?
2. Importation of material to Hanford (Agreements vs. permits)

Committee Follow-up on Central Plateau (CP) Cleanup Completion Strategy

Maynard provided questions, concerns and positives on the Central Plateau strategy identified by the Board at meeting breakout groups. He said the next step is to see what the follow-up actions and interests are and how RAP would like to proceed on the issue. Barb Wise, CH2M Hill Plateau Remediation Company (CHPRC), said 200-MG-2 includes 30 waste sites on the Central Plateau, and had an engineering and cost evaluation analysis go to public comment from May 27 through June 26. Additionally, 200-MG-1, which includes 194 waste sites, goes out for public comment June 17 through July 17.

John Price, Ecology, reviewed the strategy for the Inner Area. He said because the 194 waste sites have an estimated cost in excess of \$174 million, the National Remedy Review Board needs to look at this, and the review must be done before an action memorandum that authorizes the work is completed. He said these documents support ARRA funded work on site.

John said Ecology and EPA have said they do not think DOE's proposal to do one ROD is possible, but the agencies do support the idea to do a more streamlined approach. Originally, 32 source operable units (OUs) were consolidated into 24 OUs, and each of these could have its own decision. John reviewed a draft concept for consolidated decision-making in the 200 Area, which includes nine major decisions. He said not only source OUs but also canyon buildings are included in this approach, and the approach is an Ecology and EPA staff concept that has not been approved by management or been worked through with DOE. These decisions are grouped by geographic area. These areas are the BC cribs and trenches and control area, B Plant and the Plutonium Uranium Extraction Plant (PUREX), T Plant, REDOX, Z Plant, U Plant, east and west burial grounds, tank farm waste sites, 200 Area Ponds and remaining sites, BP-5 and PO-1, and UP-1 and ZP-1. Each area will have a feasibility study, which has either been drafted previously or needs to be drafted.

John said the biggest feedback on the Inner Area presentation was related to the concept of one ROD. Several years ago there was a feasibility study that looked at all of the soil waste sites around BC Tank Farm, all sites around T/TX Tank Farm, and the BC Cribs. The CERCLA feasibility study was 1,100 pages, and regulators said this did not have

consistency so the BC Cribs section was removed. He said the regulators have tried to put together a decision framework that groups similar activities by their geographic location.

John said this is the regulators' counter-proposal to the one-ROD concept proposed by DOE. He said a couple of these decisions are very near-term and the agencies think they could be completed in the next couple of years. Ecology and EPA have asked DOE to finish areas such as UW-1 and the Z-Plant Area. John said the regulators' proposal includes Corrective Action Decision Records of Decision (CADRODs), which refer to an integrated decision between RCRA corrective-action decisions and CERCLA decisions. He said in the Agreement in Principle (AIP) that was signed with the draft milestone package the agencies committed to looking at an approach to integrating RCRA and CERCLA.

Regulator Perspectives

- Ron said one question is how to approach the strategy and the agencies are still looking at how to make these decisions. He said the agencies want to apply consistent cleanup principles but also show that sites are different in terms of the remedy and cost. A regulatory decision must be made by July 31 and a schedule must be identified by the end of the year. Ron said it would be helpful if the HAB provided feedback on how they would like to see this process completed. He said they will have made some progress by July and could give an update but could also wait for the final proposal in August or September.

Committee Discussion

- Bob asked how the committee can get a copy of the documents when they are out for public comment. Barb said that HAB members can look at the month of June 17 through July 17 on the Hanford events calendar to find links to the fact sheet and an electronic copy of the document. For a hard copy, Barb suggested contacting Paula Call, DOE-RL, or Sharon Braswell, Ecology.
- Shelley asked whether, when looking at de-listing from the NPL, the idea is to do the entire river corridor or to piecemeal this by geographic area. John said the current thinking is to do the 100 Area and 300 Area in separate packages, and the reactors would be in those packages. He said a strategy for reactor disposition is needed.
- Dick said he likes the layout of the regulators' proposal and thinks it could work well for an umbrella document like the one used for the 100 Area, which stated the basic approach and philosophy and included addendums with individual cases.
- Pam asked whether the agencies have an interaction with USFWS as the site goes through the de-listing process, given that the land is a national monument and will be

transferred to USFWS. John said there is no interaction between the agencies and USFWS on this. He said a presidential memorandum that said the rest of Hanford should be managed like the national monument.

- Maynard asked whether this strategy refers mainly to the Inner Area. John said it also includes 200 Area Ponds and remaining sites in the Outer Area.
- Bob asked whether there will be a framework with the number of RODs and a schedule by September. Nick said by the end of the year a strategy and milestones will be in place. There will also be an interim step where the agencies will try to come to some agreement by July. Ron said DOE has a deliverable due in July.
- Susan Leckband asked whether, when discussing milestones associated with this, the agencies are referring to new milestones or ones that will be pulled out of the TPA to look at specifically. Nick said some are new and some are changed milestones. Susan said it would be helpful to identify which milestones would be affected and ideas of what new ones would be. Ron said some activities from the M-15 milestones that were going to have decisions by 2011 will be included. Susan asked whether M-91 is one of those as well. John said because facilities and soil sites have been combined, that may determine how the schedule is decided.
- Maynard asked the committee whether it should address any questions or activities in the Outer Area or groundwater. Susan said she hopes the committee will determine what topics it wants to track and create a schedule for when the agencies can present these topics. She suggested that the committee meet in July to receive updates on the questions identified through the discussion.
- Pam asked the status of the plutonium waste sites. John said PW-1, 3 and 6 are included in the document. Emy Laija, EPA, said EPA has commented on these sites and have given DOE comments on the feasibility study. She said EPA was favorable with digging out the plutonium, but EPA is not sure to what level and needs more information from DOE before giving recommendations on those levels. Nick said this is why DOE wants to have the entire decision looked at. He said DOE understands that there is an interest in moving forward and making decisions and thinks it makes sense to have a big-picture idea of how to deal with plutonium. He said DOE is going to respond to EPA's comments and also gather more information on the Inner Area that would be beneficial in making this decision. Nick said there is plutonium in multiple places across the Central Plateau and this needs to be looked at holistically. John said Ecology disagrees with this and has told DOE that Ecology believes there are completely different material in the wastes sites around PW 1, 3 and 6. Ecology does not think a comprehensive decision on burial grounds and waste sites can be made and the agencies disagree on how this will work.

- Maynard asked whether the same process will be used for the 200 Area. Nick said DOE already has RI/FS work plans underway. Although they are at different stages in the process, the idea for all the sites would be to look at geographic areas holistically and consider how these decisions impact groundwater and the vadose zone to look at data gaps and determine what makes sense overall.
- Maynard asked whether DOE would delay action on PW-1, 3 and 6. Nick said Hanford does not have the money to do this work. He said the remedies EPA was considering cost more than \$250 million. He said DOE would like to continue analysis to put this work in a bigger perspective within the Inner Area strategy. John said the regulatory agencies have been very clear that there are some decisions that need to be made now. He said institutional knowledge is lost if decisions are not made, and PW-1, 3 and 6, CW-5 and UW-1 should be made now. Emy said EPA agrees with this. These decisions need to be in place so when funding is available the work is ready to begin.
- Dick asked whether DOE is planning to consider all plutonium sites as a group and make a decision based on the risks associated with those pieces. Nick said DOE thinks it makes sense to have an inventory for plutonium across the Inner Area and how it would be dealt with holistically. It may turn out that some plutonium is a greater risk and DOE needs to decide how to best manage this. Nick said the concept of one ROD would allow DOE to stay close to the existing schedule in the M-15 milestone and making those decisions by 2011.
- Shelley asked the timeline for discussion. Ron said there are some sites where the agencies agree on what the remedy should be and others that need more information. He suggested updating RAP on these discussions in July. Shelley said she thinks the committee needs to weigh in on this. Ron said by the end of the year there needs to be an answer on this issue and the agencies would like to have the HAB's feedback as they move forward.
- Susan said the Board passed advice at its last meeting regarding funding for activities and taking actions now to ensure there will be support for future funding requests. She said the site needs to be able to support funding requests with work by completing preliminary work now. John suggested that it may be useful to go back through the Board's 218 pieces of advice and look at previous River Corridor advice and see how this is applicable to the 200 Area decision and strategy. He said he thinks it is important to go through and look at that in order to see how this advice relates to the DOE budget and system for decision-making. Margo Voogd, DOE-RL, said this would be an excellent topic for July. Harold suggested using caution when looking at past advice, since the Board and the funding situation are different than 10 years ago. Original advice urged taking action and now it focuses on evaluating risks and priorities.

- Shelley asked whether the overall plutonium issue is included with characterizing SW-1 and 2. Nick said DOE has identified eight or nine areas on the Central Plateau that need consistent approaches. DOE also needs to look at PW 1, 3 and 6 and the big picture of how plutonium is managed across the Central Plateau. There is currently a feasibility study out for review and DOE thinks it can go forward in looking at that and answering questions from EPA in order to look at plutonium overall in the Central Plateau.
- Maynard suggested that the eight or nine areas being looked at on the Central Plateau could be a topic for the July RAP meeting. John said the agencies are going through the nine Central Plateau closure principles and could provide a briefing on this for July. Dick asked whether the briefing would focus on plutonium issues. Nick said plutonium would be one aspect, as well as ICs.

Potential HAB Input (As captured on flip chart notes at the meeting)

1. Look at River Corridor advice and see how it fits in with the 200 Area
2. Potential # of RODs

Groundwater Annual Monitoring Report

John Morse, DOE-RL, provided an update on the Hanford Groundwater Monitoring Annual Report. The report covers the 300 and 200 East and West reactor areas, including the characterization of plumes and cleanup progress.

John reviewed work currently underway to remediate groundwater plumes and protect the Columbia River. He said there is a great deal of work in the D&H Area. The pump-and-treat capacity in the K Area was expanded. John said at least 24 additional wells were put in the K Area and one system was increased by 100 percent, adding a capacity of 600 gpm. The K Area now has a 1,100 gpm pumping capacity, an increase from its original capacity of 300 gpm. John said the primary goal of the increased capacity is to capture chromium, but it picks up other contaminants as well. When wells are installed the metrics often show that the shoreline impacts from groundwater increase, and John said this reflects the better knowledge of the plume. The DX Facility is at 30 percent design. This will significantly change the pumping capacity, allowing for a 1,000 gpm capacity. John said the near-term goal is to keep the hexavalent chromium from reaching the river above the aquatic standard, and the long-term goal is to remediate this contamination.

John said one major groundwater accomplishment in 2008, in addition to expanding the K Area pump-and-treat system, was completing a final ROD for ZP-1. He said ZP-1 just

had its final design review and is now being called the 200-West system. John said a detailed characterization of B/BX/BY uranium and technetium-99 plumes will allow DOE to move forward with the final RI/FS. Additional significant accomplishments include characterization and remedial optimization for 100 H&D, conducting additional in-situ remediation activities at the N Area and 300 Area, and conducting a systematic planning process for conducting the final RI/FS for the 100 and 300 Area OUs.

Groundwater activities planned for 2009 include upgrading the H&D Area from 300 to 500 gpm pump-and-treat operations, beginning full-time operations of expanded K Area pump-and-treats, and completing RI/FS work plans for all 100 and 300 Area groundwater OUs. John said DOE has begun ZP-1 design with a plan to have the system constructed and operating in 2011. DOE plans to install additional characterization wells for River Corridor RI/FS investigations and complete an amendment to the existing River Corridor interim RODs to allow in situ biological and chemical treatment of the vadose zone and groundwater.

John reviewed current efforts to increase access to environmental data. An Internet news application called the Environmental Dashboard Application (EDA) was recently released and will allow the members of the public with a password to access the swell and groundwater data. The public can also access DOE's Annual Groundwater Report. John said internally DOE is continually working to make it easier for agencies to access information through its Environmental Database Management Web site, Hanford Well Information and Data Lookup, Virtual Library, WIDS Application and QMAP. He said these are generally not available for public use but DOE can work on specific data requests. John said the public must request access to the external EDA site, which includes groundwater and soil data through summary statistics, trend charts and data downloads.

John said the Hanford Site Groundwater Monitoring for FY 2008 is also available, and includes groundwater data used for the report and specific data for selected constituents. He reviewed the metrics charts, which contain minor changes such as additional data for the 100 Area. He said CHPRC is also considering re-formatting the document to make it more readable and DOE is working with them on how to best present the information. The CHPRC groundwater program is responsible for creating the groundwater metrics document based on the annual report. In addition to considering changing the format, John said DOE is also looking at potential changes to the annual groundwater report. The groundwater report has been used to meet RCRA requirements in the past, which John said drives the production of the monitoring report. DOE will now submit a separate report and provide additional time to produce the groundwater monitoring report. RCRA only regulates chemicals but does not regulate radiation adsorbed dose (RAD), so a

RCRA document does not always provide a complete analysis. These changes will be completed by the end of the fiscal year and there will be an opportunity for the public to comment on the updates.

John reviewed findings from the annual groundwater report, and said there are not many surprises. The tritium plume is decreasing, as expected, and a larger plume was identified between the H and D Areas. The dimensions of the K Area plume are slightly larger based on additional sampling, but John said this plume is surrounded. The ZP-1 plume has not changed significantly, but upcoming well drilling activities may provide additional information on this plume. John said the 2008 report does not show all of the BX/BY Tank Farm, and this should be more defined. The technetium-99 plume around the C Tank Farm is also more defined.

Regulator Perspectives

- Ginger asked whether there is a link to the special request form on the EDA so that if someone is unable to find specific information they can easily make this request. John said the EDA does include this link.
- Ginger asked if the plume maps in the annual report would have identical graphics. John said in most cases the extent of the plume in terms of drinking water standards may not be included. Ginger said last year changing the way the data is presented was discussed, including a standardized way to present information such as color-coding contaminants. John said this is being worked on this, but there are different levels of information. He said the information will be presented based on the highest impact with the colors related to concentrations. Ginger recommended that a color-coding system be implemented with standard colors for different contaminants, with shading to indicate concentrations.

Committee Discussion

- Susan commented that the Board has always tracked groundwater, and the new report is improved from past reports, specifically in readability.
- Wade asked how many wells were de-commissioned during the past year. John said there is a program to de-commission an additional 300 wells. Information on the number of wells that have been de-commissioned could potentially be included on the summary sheet. He said some of the wells that are not used are still useful for doing geophysical logging and DOE has a reliable inventory of all of the wells.
- Dick asked for clarification on the graph that shows the number of new and dry wells. John said DOE has been tracking this and plans to build approximately 200 wells next year, in addition to finishing modifying the ModuTank system. He said DOE can

provide a status report on the ModuTank system and the Purgewater Engineering Evaluation/Cost Analysis (EE/CA), which was recently out for public comment.

- Pam asked when the committee should revisit the Groundwater Monitoring Annual Report. John said September or October would be a good time to look at this issue, as the new format will be in place and DOE can provide a path forward.
- Susan asked if documentation like the groundwater report is supportive of the TC&WM EIS. John said it is, and DOE used the groundwater database for the EIS.

Committee Work Plan

Maynard introduced Paul Shaffer (joining by phone), who proposed a future presentation to the HAB on the Natural Resource Trustee Council (NRTC). He said the issue came up while writing the RAP's advice on the Environmental Restoration Disposal Facility (ERDF), when mention of the NRTC was removed from the advice because the HAB is not clear on the council's current work. He said a 15-minute presentation on the mandate of the trustees as defined by CERCLA and where the council is in the process of damage assessment could help foster communication between the HAB and NRTC.

Future Topics (As captured on flip chart notes at the meeting)

- RCRA site-wide permit (July/August)
- Integration of LTS and cleanup (Workshop? Gap analysis)
- ELI and EPA LTS workshop - Board
- TC&WM EIS
- Groundwater alternatives
- Contract integration
- K-Basin sludge
- NRTC presentation and discussion
 - Mandate
 - Status of injury assessment
 - Q&A
- 200-MG-2 EE/CA (Public comment in June)
- Fire rehab efforts (For Board)
- Clarify difference between interim and final status standards (RCRA)
- NEPA, RCRA, CERCLA - Clarification
- Review 100 Area work plan and addendums
 - Post regulator comments
- LTS/IC requirements for River Corridor - Specific for RCRA
- NPL deletion package for River Corridor (General) - July
- CP strategy update:
 - Milestones affected?
 - New milestones?

- Could talk about current TPA milestones and what is being considered
 - Progress on strategy
 - Responses to HAB questions raised at June Board meeting
 - Central Plateau closure principles
 - Review HAB input and determine future committee actions
 - Potential advice on the number of RODs?
 - Context in terms of HAB budget advice
- Prior advice for path forward in 200 Area
- Tutorial on how to access EDA: Groundwater data
- Update on groundwater fact sheet (October)

Regulator Perspectives

- For the tutorial on the RCRA, CERCLA and NEPA processes, Ginger said she could do a printed overview of the similarities and differences between the three processes. She suggested doing a tutorial at the August RAP meeting and a Board presentation in September.

Committee Discussion

- Shelley commented that she would like to see a presentation on the PW 1, 3 and 6 Proposed Plan in July when the document is out for public comment. She said RAP needs to weigh in on the concept of one ROD and she would like this to coincide with the current agency discussions. Wade said the committee needs to move forward with this to weigh in on the discussions that are currently taking place and look at the basic issues with plutonium.
- Maynard commented that the contract integration item relates to groundwater and suggested this be addressed in October or November. Bob said Matt McCormick, DOE-RL, said he wanted to update the committee on the integration of contractors as well as the integration of the DOE-RL and DOE-ORP offices.
- Pam suggested that the deep vadose zone, pre-70 transuranic (TRU) waste, the Plutonium Finishing Plant (PFP) and M-91 are additional topics of interest.
- Wade said the focus on groundwater remediation needs to be elevated. He said pump-and-treat systems, drilling wells and characterization are the current areas of interest, but there are an additional 60 feet of vadose zone where the bulk of treatments have gone, including geologic and hydrological controls. He said releases that have slowly migrated from the groundwater will lead to potentially major impacts.
- Wade said pre-70 TRU is starting to be investigated and it will be a major problem for future releases to the vadose zone. He commented that this topic fits with waste remediation and trenches.

- Bob suggested that science and technology needs be added to the list of future topics. Pam said PNNL worked with Hanford on the Science and Technology Workshop and have asked for a follow-up meeting.
- Bob said 618-10 and 11 were previously included on the committee's watch list. Paula said there was a brief update on this in May and DOE is currently looking at characterizing most of these areas. Sub-contractor work starts in July. Mark French, DOE-RL, could provide a status update on this work in the fall.

Potential Schedule for Future Meeting Topics (As captured on flip chart notes at the meeting)

- July
 - RAP to provide feedback to agencies on main document
 - NPL deletion package for river corridor (General framework)
 - CP Strategy:
 - Update of agency discussions
 - Closure principles
 - Current milestones/proposals
 - Prior advice and path forward
 - PW 1,3,6 Proposed Plan - Public workshop in July
 - Purgewater issues update
- August
 - CP Strategy:
 - July 31 deliverable briefing
 - Response to HAB questions (June Board meeting)
 - Potential advice?
 - Specific milestones
 - RAP input to budget advice
 - NEPA/RCRA/CERCLA Tutorial and clarification on interim and final status standards (Ginger Wireman to draft document)
 - LTS/IC
 - Integration
 - Gap analysis
 - River Corridor ROD
 - Cost analysis
 - CP strategy, etc.
 - COTW on the TC&WM EIS
- September
 - 100 B/C RI/FS and 100 F RI/FS (Agency)
 - ZP-1 and UP-1 update
 - NRTC presentation and discussion (Paul Schaffer)
 - Vadose zone presentation and focus discussion
 - K Basin sludge update - TPA change package?

- 618-10, 11 - Status and path forward
- October
 - 300 RI/FS (Agency)
 - RCRA Permit
 - Pre-70 TRU waste remediation and trenches - Relation to M-91
 - Contract and ORP/RL integration (Groundwater and soils)
 - Update on groundwater fact sheet
 - ELI and EPA LTS workshop for the Board (Pendegrast, et al)
 - Groundwater Alternative Workshop
 - TPA negotiation status update
 - Fire rehab efforts presentation for the Board
 - PFP
- November
 - 100 N RI/FS (Agency)
 - Status of Science & Technology Roadmap

Handouts

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

- Post-Fire Revegetation at Hanford, A. Ray Johnson, Joe G. Caudill, Juan M. Rodriguez, Justin W. Wilde and Richard C. Roos, June 10, 2009.
- Update on the Hanford Facility Dangerous Waste Permit (“the Site-Wide Permit”), Ron Skinnarland, June 10, 2009.
- River Corridor (100 & 300 Areas) Integrated RI/FS Work Planning, Jim Hanson, June 11, 2009.
- HAB Meeting Central Plateau Cleanup Strategy Breakout Sessions, Flipchart Notes, June 4-5, 2009.
- Streamlined Decision Making in the 200 Area, John Price, June 8, 2009.
- Hanford Site Groundwater, John Morse, June 11, 2009.
- Hanford Groundwater Annual Monitoring Report DOE-RL Groundwater Project, John Morse, June 11, 2009.

Attendees

HAB Members and Alternates

Shelley Cimon	Susan Leckband	Wade Riggsbee
Dale Engstrom	Sandra Lilligren	Dick Smith
Ken Gasper	Vince Panesko	Bob Suyama
Harold Heacock	Maynard Plahuta	Gene Van Liew
Pam Larsen	Paul Shaffer (phone)	Doug Mercer (phone)
Gerry Pollet (phone)		

Others

Elizabeth Bowers, DOE-RL	Rick Bond, Ecology	Janice Williams, CHPRC
Paula Call, DOE-RL	G.P. Davis, Ecology	Barb Wise, CHPRC
Margo Doogl, DOE-RL	John Price, Ecology	Mark Wood, CHPRC
Jim Hanson, DOE-RL	Ron Skinnarland, Ecology	Rico Cruz, CTUIR
John Morse, DOE-RL	Ginger Wireman, Ecology	Susan Hayman, EnviroIssues
Roger Pressentin, DOE-RL	Emy Laija, EPA	Molly Jensen, EnviroIssues
Margo Voogd, DOE-RL	Laura Beulow, EPA	Austin Ray Johnson, Fluor Hanford
Jamie Zeislon, DOE-RL		Richard Roos, Fluor Hanford
		Jeff Lerch, WCH