



**MEETING SUMMARY**

**HANFORD ADVISORY BOARD**

Health, Safety & Environmental Protection (HSEP) & River & Plateau (RAP) Committee Joint Meeting  
*September 16, 2019*  
*Richland, WA*

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

## **Opening**

Janice Catrell, River and Plateau (RAP) Chair, welcomed everyone and members made introductions. The May 2019 combined HSEP/RAP meeting minutes were approved by consensus with agreed-upon changes identified by Liz Mattson.

### *Announcements*

Ruth Nicholson, Hanford Advisory Board (HAB/Board) Facilitator, reminded members, Agency liaisons and contractors to sign in prior to leaving the meeting.

Jim Lynch, Deputy Designated Federal Officer (DDFO), U.S. Department of Energy (DOE) announced primary members have been approved and appointed for their new terms.

## **Draft Waste Primer**

Richard Bloom, City of West Richland, provided members an overview of the Draft Waste Primer. Richard described the Draft Waste Primer as a simplified overview of a complicated system of classifying waste. He reviewed the steps one would consider when classifying waste. Questions to consider include:

- Is it waste
- Is it free from radioactivity
- Is it regulated
- Tank Farm Related
- WIR
- TRU or <Class C1

Richard reviewed the designation chart of which presents different paths waste can take depending on its characteristics therefore determining if it will end up in a stored waste or a landfill. His presentation also included a chart displaying the characterizations of waste.

Richard explained this is a complicated process and believes the Draft Waste Primer will assist in simplification.

### ***Committee Member Questions (Q), Responses (R), and Comments (C):***

*Note: This section reflects individual questions, comments, and agency responses.*

C: "Assuming there is an executive summary in the front (so there are basic elements in this document), I suggest the committee have a couple of other people look at this and make sure the executive summary is shorter and clearer. We should then send it to the full Board as a white paper and use it so they can understand what they are looking at in order to determine if it should go into the packet. We need to look at it a little bit more and have a discussion. An Issue Manager should take a look at the introduction to make it clearer."

R: “There is an Issue Manager (IM) team including Tom Galioto, Kate Griffith, Tom Carpenter, and Liz Mattson.”

C: “I Would like to have more time to study the document more closely and there is a lot in there that could be a concern that more fairly represent different viewpoints.

C: “I also have some concerns moving forward because this is so complicated.”

**Next Steps:** The IM team will take a look at the document more closely. The IM team will work on the executive summary and provide a recommendation for what uses the document might have.

### **Draft Advice: Traffic Safety**

Rebecca Holland, HSEP Chair, introduced the topic of Traffic Safety. Rebecca shared that DOE asked for a committee to be formed, and they have been working on some of the traffic safety issues. She asked if the Hanford Advisory Board (HAB) could issue some additional advice. She asked the committee if members had any questions or comments.

#### ***Committee Member Questions (Q), Responses (R), and Comments (C):***

*Note: This section reflects individual questions, comments, and agency responses.*

C: “I have a suggestion to make the bypass from George Washington Way to Stevens that is a non-high occupancy and make it a high occupancy volume path.”

*Q: “What about the administrative workers who do not need to be on the road?”*

R: “It’s important that we recognize that administrative work.”

C: “Maybe we can issue a piece of advice about the lanes for emergency responders and safety. There is also the possibility of working from home or four (10 hour shifts) that could reduce the traffic and increase safety.”

R: “I would suggest requesting this topic for the October meeting in conjunction with the RAP with one or two subjects. This can be one topic because of the emerging change.”

C: “There will also be people who are workers that have young families, we need to think about how they will be addressed and talked through.”

**Next Steps:** Bring to the October meeting to discuss further advice.

### **FY 2020 HSEP Draft Work Plan**

Rebecca Holland, HSEP Chair, introduced the Fiscal Year (FY) 2020 HSEP draft work plan.

Members took the opportunity to have an open dialogue regarding topics they would like to see added to the FY 2020 work plan. Items recommended by members to add to the FY 2020 work plan included the following:

- Traffic Safety

- Follow up on potential advice and building on past advice
- Waste Primer
  - This needs more work and should consider the next steps. Members agreed it should become broader and consider what the best use of the document might be
- Exclusion safety zone
  - Members agreed this topic needs more framing questions and a better focus. There could be a potential of creating a joint meeting with the EIC
- There was a recommendation that the HAB move Committee Week to November 12, 13 and 14 and move call placeholders to November 19 and 20

### **Re-Convening**

Jan Catrell, RAP Chair, re-convened the meeting after lunch. Jan noted that members had already approved the May RAP/HSEP joint meeting summary.

JoLynn Garcia, Federal Coordinator for DOE, discussed a short safety topic.

### **324 Building Update**

Jan Catrell, RAP Chair introduced Ben Vannah, DOE Richland Operations Office (RL) and the 324 Building Update. Key points from Ben's presentation<sup>1</sup> include<sup>2</sup>:

- The demo and final soil excavation moved four years to 2025
- Floor saw status in the May timeframe installed at the mockup 1/8 stainless steel liner that is difficult to move
  - June time frame this failed. They are working with vendors to get new parts and ensure they are thoroughly tested and vetted to ensure they work. The first plan is to make sure it's a good floor saw
- Building Micro Pile Placemat

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<sup>1</sup>[324 Building Update](#)

<sup>2</sup> As a part of this discussion, a Pacific Northwest National Laboratory (PNNL) study was identified that addressed the risk to groundwater as it related to gallons of water added to the excavation on a weekly basis. Ben Vannah, DOE, indicated that he would try to get a link for that paper to the RAP committee. Upon further discussion after the meeting, it was later determined that the mobilization calculations were done by CH2M Hill Plateau Remediation Company (CHPRC), not PNNL, in a report identified as ECF-300FF5-17-0019. At the RAP meeting on January 8, 2020, the attribution of the report was clarified, and the RAP adopted this meeting summary conditional on the addition of this clarifying footnote.

- Ben reviewed the drilling activities in the building micropile placemat. The micro piles in B cell wall are being drilled and they go down 30 feet into the soil which has casing in it so the soil doesn't go down into the hole
- Soil stabilization will occur under B cell where the chemical grout binds the soil together to prevent sloughing during excavation
- Pilot Hole No. 1
  - In the March time frame, they discovered about 4 feet deep that there was dust coming into the room. They made a vacuum seal collar with point source capture to fix this
  - In June they still noticed contamination getting into the room in “fan-like” shapes. Workers had two pairs of Personal Protective Equipment (PPE) permeable and someone got contaminated through two pairs. They installed Teflon inner seal to the floor to prevent further contamination
  - Contamination spikes up around three feet down into the soil. After seven feet deep, it drops off heavily which is where the sand ends and Hanford cobble begins
- Pilot Hole No. 2
  - There was contamination on boots and Radiological Buffer Area (RBA) floor itself. Once investigated they discovered dirt escaped the industrial drill room. The workers themselves were and are protected. The bits that are sneaking out are not a threat. A worker said dust was escaping the diverter by a drill rod. The drill rod indentations allowed air to escape. We removed the indentations to prevent escape in the future
  - June there was skin contamination in room 18, they stopped the project to incur fixes. It's believed the contaminations could've worked from the outer layer into the interlayer
  - August there was one more contamination on an individual's hair. It's believed his hat was swiped on his head. They have provided additional training since this incident
- 324 groundwater monitoring
  - Since 2014 probes have been going below B cell to above groundwater to detect if any migration of water. The probes have been checked monthly and there is no migration. They were pulled out earlier this year because of the excavation. A new well has been installed – downstream to the facility in May
  - The first sampling will start in October and it will be quarterly to check for any impacts
  - Even though we have seen no impacts, we will still be monitoring
- Takeaway Points

- Micropile construction in room 18 is a new activity at Hanford. Time will be taken, as needed, to incorporate process improvements and ensure continued worker safety
- Removal of contaminated debris from B Cell with remotely operated equipment is 25% completed and by November should see 100%
- Sampling from new groundwater monitoring well starts in October
- Recent Accomplishments
  - June 2019 Inside of B Cell the grout and debris were removed
  - August 2019, 25% of the cell has been removed and scraped clean to the stainless liner
  - July 2019 first shipment of legacy waste to B Cell

*Agency Perspective*

Emy Laija, Environmental Protection Agency (EPA), announced Ben Simes could not make it but has been working very hard on this project.

***Committee Member Questions (Q), Responses (R), and Comments (C):***

*Note: This section reflects individual questions, comments, and agency responses.*

*Q: “In those incidents of contamination, no contamination left the building?”*

R: “Yes that’s correct. We have 5 times stricter surveys that are being completed. Outside of 324, there was contamination on the mat when first walking in. We’re on alert because it has potassium but it does not appear to be linked to the facility.”

*Q: “I assume the area is now an airborne area? If it is 1.5 DAC that would mean there is some type of contamination floating around?”*

R: “Yes, the question was how much contamination is present was in the air. The good news is we haven’t seen much airborne contamination at all.”

*Q: “Where are you going to spray the water?”*

R: “It is going into B Cell. It will be used to spread soil for dust control once we start digging, and it will be used to reduce contamination on the outside of soil bins. The higher water application will occur in B Cell.”

*Q: “Will CHPRC or MSA will be collecting groundwater samples?”*

R: “CHPRC will be collecting samples.”

*Q: “Considering recently negotiated milestones and the amount of water you may need to use, has there been any consideration to install a pump that if you need to use any water that is more than expected? Can you retrieve that water and send that to treatment? Has there been a consideration for that at all?”*

R: “There has not been a consideration because there shouldn’t be any migration. We are well below the threshold for that.”

**Next Steps:** Ben will provide members with a future presentation on water usage.

### **Review of Draft FY 2020 RAP Work Plan Items**

Jan Catrell, RAP Chair introduced the topic of the Review of Draft FY 2020 RAP Work Plan Items.

Members took the opportunity to have an open dialogue regarding topics they would like to see added to the FY 2020 RAP work plan. Items recommended by the RAP members to add to the FY 2020 RAP work plan include the following:

- K Basin Disposition
- Groundwater yearly reports/injection
- Water lines and potential impacts of leaks
- Gable Pond characterization/timeline

### **100-B/C Proposed Plan Update**

Jan Catrell, RAP Chair, introduced Mike Cline and Ellwood Glossbrenner, DOE-RL and the 100-B/C Proposed Plan Update. Key points from Ellwood’s presentation<sup>3</sup> include:

- The River Corridor is 220 square miles with the 100 and 300 Areas on the national priorities list.
- 100 B/C reactors that operated from 1944-1969. The 100-B reactor is part of the Manhattan Project National Historic Park. The 182B Reservoir and Pump House contains the primary water supply. The pump house reservoir exports water to the remaining 100 area operable units undergoing remediation activities and the Central Plateau.
- Scope for the Proposed Plan: Waste Sites
  - Further action for 30 waste sites is warranted
  - 7 sites have residual contamination that poses a shallow direct-contact risk for residential use and/or effects on groundwater or surface water quality
  - 23 sites that have residual radionuclide contamination in the deep zone (only) and do not have the potential to affect groundwater or surface water
  - No sites have residual contaminant concentrations that pose a potential risk to ecological receptors

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<sup>3</sup> [100-B/C Proposed Plan Update](#)

- Scope for the Proposed Plan: Groundwater
  - Groundwater actions were not prescribed by interim action Record of Decision (ROD) for 100-B/C
  - Current contamination levels warrant remedial action consideration
  - All groundwater contaminants exceeding standards are addressed by alternatives in the proposed plan
  - Differences between the alternatives primarily affect how hexavalent chromium is addressed
- The summary of alternatives has been evaluated and alternative 2 is preferred for the 100 B/C
- Alternative 2 is as follows:
  - Removal, treatment, and disposal of remaining grouted segment of sodium dichromate transfer line
  - Natural attenuation with institutional controls (restrict uncontrolled excavation/drilling, prevent residential use, and/or prohibit irrigation) for 30 waste sites
  - No action for 82 waste sites
  - Monitored natural attenuation with institutional controls for groundwater (restrict drinking water and other domestic uses)
  - It will take 187 years of radioactive decay for one waste site to be protective of a residential scenario. This waste site is located next to the B Reactor with no public accessibility
  - Excavation removability is limited by the waste site's proximity to the reactor building
  - The estimated future cost: \$23 million
- Takeaway Points
  - The focus is on completing remediation of the B/C Reactor Area
  - DOE believes that the preferred alternative is protective and provides the best balance of tradeoffs in consideration of the CERLCA balancing criteria
  - 100 B/C proposed plan was redrafted in consideration of previous HAB Advice
  - Because strontium contamination in groundwater will require institutional controls for 70 years, DOE is not planning to build a pump and treat system for chromium, because it will disperse naturally within 60 years

### *Agency Perspective*

Laura Buelow, EPA provided the regulator perspective on the 100 B/C Proposed Plan. EPA supports Alternative 2. Laura said the alternative looks into the ecological side of hexavalent chromium, especially regarding endangered species. Salmon & steelhead did not see any effects until chromium got to levels of 266 gram/L. Laura doesn't expect any adverse effects to the species noting that aquatic insects are the most susceptible. There are no adverse side effects on ecological factors and EPA is supportive of monitoring for this reason.

### ***Committee Member Questions (Q), Responses (R), and Comments (C):***

*Note: This section reflects individual questions, comments, and agency responses.*

*Q: "The institutional controls are expensive at \$6.7 million and \$12.5 million. What do the controls represent?"*

R: "The cost of institutional controls represents monitoring and reporting of them. People have to go out and inspect them, monitor and record them."

*Q: "Is it like fencing?"*

R: "A smaller component of the cost is the fencing."

*Q: "Cost has to do with salaries and report?"*

R: "Yes."

*Q: "The river pipelines that you discussed are not part of this, when are they going to be addressed?"*

R: "They won't be. They were part of the previous interim action."

*Q: "If it's deeper than 15 feet, are they going to need deep restrictions at some point? When in the process will they be recorded? Will they be individual?"*

R: "It is ongoing and timing will be more in the future."

*Q: "How long does it take for the preferred alternative to be affected?"*

R: "Strontium 70 years, 60 years hexavalent chromium to reach 10 part eco standard, 187 for 118-B-8:4 shallow zone soil behind basin storage 13-15 feet below ground surface."

*Q: "Thank you, Ellwood, for the context and sense of what we're looking at. When is the anticipated date for the issuance for the Record of Decision (ROD) itself?"*

R: "EPA is drafting comments, part of the Record of Decision (ROD) will be out sometime this winter and dependent on attorneys since they have to work through it together, so we are expecting sometime in the spring. The ROD itself will not be out for public comment. October 6 is the last day of the 30-day comment period."

*Q: “Does anyone know how the \$23 million funding will be spent?”*

R: “Some would be spent upfront and some will be spread throughout the life of the project.”

*Q: “You made a reference to the deep digs, was there any consideration of doing any more of those excavations?”*

R: “100-C-7 and 100-C-7:1 but no consideration of doing anymore.”

*Q: “Consideration of holding public meetings?”*

R: “EPA always allows an opportunity to request public meetings and if given enough requests, we would consider holding them.”

### **Soil Flushing Treatability Testing for Hexavalent Chromium in the 100 K Area**

Jan Catrell, RAP Chair, introduced Ellwood Glossbrenner, DOE-RL and the Soil Flushing Treatability Testing for Hexavalent Chromium in the 100 K Area. Key points from Ellwood’s presentation<sup>4</sup> include:

- In 2018, a soil flushing treatability test plan was approved (DOE/RL-2017-30, KW Soil Flushing/Infiltration Treatability Test Plan)
- Currently, DOE is testing the effectiveness of technology to remove a remaining area of hexavalent chromium [Cr(VI)] contamination in the 100 K Area near the river
- The test includes saturating about 1-acre of soil with treated water
- The goal is to move the chromium to groundwater where existing wells will remove it for treatment accelerating the cleanup process
- There was rebound testing done between 2008-2018 where the pump was shut off for 9 months
- From May 2016 to April 2017 hexavalent chromium returned because of the river fluctuations going up and pulling residual hexavalent chromium into the aquifer with residual contaminant levels as high as 400 parts per billion (ppb). The drinking water standard is 48 ppb and the surface water standard is 10 ppb
- Soil Flushing treatability test began on May 28, 2019. Currently, they have a draft effectiveness assessment report and are reviewing that. February of next year they will have a final report on effectiveness assessment and a recommendation

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<sup>4</sup> [Soil flushing Treatability Testing for Hexavalent Chromium in the 100 K Area](#)

- KW extraction wells 199-K-166 and 199-K-205 and monitoring well 199-K-236 have exhibited increases of Cr(VI) concentration during the test, up to 1,650 ppb in monitoring wells and 882 ppb in the extraction well
- Other monitoring well locations have experienced increases of Cr(VI) to 23.7 ppb, but have dropped and remained below 15 pp
- Takeaway Points:
  - Soil flushing is effective at removing residual Cr(VI) from the vadose zone
  - After removal of waste sites and demolition of remaining facilities this treatment can be implemented efficiently, quickly, and at a relatively low cost
  - This technology is only implemented in areas where there is adequate hydraulic capture

#### *Agency Perspective*

Laura Buelow, EPA, provided the regulatory perspective on Soil Flushing Treatability Testing for Hexavalent Chromium in the 100 K Area. Laura inherited the 100K a year ago and watched as the data would come through every week. As the chromium was getting flushed through, they were looking to see the amount of water flushed through for the next time. Laura is curious to see if it will be below the state levels and determine if one is effective in the long run or if they will have to add something else to it.

#### ***Committee Member Questions (Q), Responses (R), and Comments (C):***

*Note: This section reflects individual questions, comments, and agency responses.*

*Q: “When you guys did the shutdown, was there some finding that some chromium was underground in this area?”*

R “No, they extract chrome down to about 20 parts per billion then shut it off. Water fluctuations between the low river and high river stages are monitored for a 9/10 month period. The high river stage water level would go up and catch residual hexavalent chromium and pull it down below into the aquifer which is why they saw the increase.”

*Q: “How does the data you’re seeing mesh with the next peaks you’re anticipating?”*

R: “We experienced fluctuations in contaminant concentrations over time and had suspected that there was a residual source of hexavalent chromium located in the soil above and within the periodic re-wetted zone of the groundwater aquifer. The current results were expected and we will be performing a second soil flushing after contaminant concentrations drop below 48 ppb starting in mid to late September and running through mid to late November.”

*Q: “Rebound study approved? Was this in response to high levels you were finding or was is something planned on the modeling of chromium?”*

R: “When we reach a cleanup level, we do a rebound study to see if the technology being used is performing as desired.”

*Q: “When it shows it spikes, is it a natural thing?”*

A: “It is showing we have a continuing source. The spikes show us there was a source in the vadose zone and the water was able to push that down. This took care of 14 months of hexavalent chromium collection through the pump & treat in about one month. The K West pump & treat was extracting about 0.5 kg of hexavalent chromium per month before the treatability test.”

**Review of Draft Letter of Appreciation: Completion of 618-10 Revegetation Project**

Members took the opportunity to have an open dialogue regarding changes that they would like to make in the draft letter of appreciation. Changes were applied and all agreed upon to move forward for final edits at the September Board Meeting.

**Attachments**

Attachment 1: 324 Building Update

Attachment 2: 100 B/C Proposed Plan Update

Attachment 3: Soil Flushing Treatability Testing for Hexavalent Chromium in the 100 K Area

**Attendees**

**Board Members and Alternates:**

Rebecca Holland, Member	Janice Catrell, Member	Susan Leckband, Member
Mike Korenko, Alternate	Margery Swint, Alternate	Pam Larsen, Member
Gene Van Liew, Member	Richard Bloom, Member	Tom Sicilia, Member
Shelley Cimon, Member (Phone)	Liz Mattson, Member (Phone)	Gerry Pollet, Member (Phone)
Dan Solitz, Alternate (Phone)		

**Others:**

James Lynch, DOE	JoLynn Garcia, DOE	Dana Gribble, MSA
Ginger Wireman, Ecology	Ryan Miller, Ecology	Bryan Trimberger, DOE
Rod Lobos, DOE	Tom Rogers, WDOH	Andy Foster, MSA
Ben Vannah, DOE-RL	Emerald Laija, EPA	Theresa Howell, Ecology
Jennifer Copeland, CHPRC	Robert Evans, CHPRC	Laura Buelow, EPA
Michael Cline, DOE	Donna Morgans, CHPRC	Larry Yearsley, DOE-RL
Ruth Nicholson, ProSidian	Ashley Herring, ProSidian	