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U. S. DEPARTMENT OF ENERGY PUBLIC MEETING
PROPOSED CLEANUP ACTIONS FOR REMEDIATION OF
HANFORD'S 100-F/IU PROPOSED PLAN
(along the Columbia River)

HELD ON
WEDNESDAY, JULY 23, 2014
6:30 P.M.

BEST WESTERN HOTEL -- GORGE ROOM
1108 EAST MARINA DRIVE
HOOD RIVER, OREGON 97031



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APPEARANCES

WASHINGTON DEPARTMENT OF ECOLOGY:

Dieter Bohrmann

Nina Menard

ENVIRONMENTAL PROTECTION AGENCY:

Chris Guzzetti

U.S. DEPARTMENT OF ENERGY:

Jim Hansen

John Neath

COLUMBIA RIVERKEEPER:

Dan Serres

Abigail Cermak

APPEARANCES CONTINUED

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MEMBERS OF THE PUBLIC:

Heather John

Robbie Lapp

Jurgen Hess

Gary Bushman

John Wood

Brian Brown

Sarah Rogers

Jeremy Posey

Robin Varlton

Nathan Zorich

Tom Wood

Christy Cole

Kathy Pickering

Heidi Lagosz

Gerry Pollet

1 **U. S. DEPARTMENT OF ENERGY PUBLIC MEETING**

2 **WEDNESDAY, JULY 23, 2014**

3 **6:30 P.M.**

4
5 **MR. BOHRMANN:** Okay, let's go ahead and
6 get started, then. My name is Dieter Bohrmann. I
7 work for the Washington Department of Ecology. I
8 will be your facilitator tonight.

9 We are here to discuss the proposed plan
10 for the 100-F area of Hanford, and that's one of the
11 reactor areas along the river.

12 Just wanted to go through the agenda real
13 quick, and outline kind of the process for the
14 night's meeting.

15 We're going to start with a presentation
16 from Jim Hansen from the U.S. Department of Energy.
17 He's going to go over some slides about this
18 decision and the proposed plan.

19 Next up will be a perspective from
20 Columbia Riverkeeper. Lauren couldn't make it
21 tonight, I guess, so that will be done by two other
22 representatives from -- from Riverkeeper, Dan and
23 Abigail.

24 And after their presentation, we will go
25 to a question and answer session about the proposed

1 plan. And during this part of the meeting, you're
2 welcome to ask any questions about this decision and
3 we'll just have a conversation with -- with the
4 agencies involved in the decision and -- and that's
5 your opportunity to get some back-and-forth with --
6 with the agencies and get any clarification you
7 might need or -- or questions you might have.

8 And at the end of the Q and A, we'll go to
9 the formal comment period. And during that period
10 of the meeting, you'll be able to come up and state
11 your comment for the record. And during that time,
12 there will be no dialog with the agency; it'll just
13 be your individual comments that will be captured,
14 so...

15 We do have a court reporter here. He is
16 capturing a transcript of the entire meeting and
17 within 10 days, two weeks of -- of the meeting, that
18 transcript will be posted on the U. S. Department of
19 Energy's website, Hanford.gov, so you can look for
20 that then.

21 Also want to mention that we have a -- a
22 webinar component of this meeting, so there are
23 folks that can -- can log in on their computers or
24 their other devices and listen in, watch the meeting
25 remotely, and from time to time during the meeting,

1 we will be collecting comments from them and -- and
2 asking those as well. So --

3 **FEMALE:** Will this be available for -- for
4 viewing at another time?

5 **MR. BOHRMANN:** Will the -- the webinar?
6 Will the Webinar be captured and be available?
7 There -- there are no plans to do that, apparently.
8 But we can provide copies about every presentation
9 that's given here tonight. Those should be publicly
10 available.

11 **MALE:** Sir, for those of us that can't
12 stay until the public comment period, our comments
13 on here will be logged. Correct?

14 **MR. BOHRMANN:** Yes, definitely. Thank you
15 for -- for mentioning that. So on the back of your
16 agenda, there is -- and you can do it on a notepad
17 or anything. But for ease of commenting, there are
18 -- the opportunity on the back of your agenda to
19 write your comments down, turn those in, you know,
20 whenever is convenient to you tonight or you can
21 mail them later, or, you know, obviously, we're here
22 to capture them.

23 So, yes, if you have to leave early or you
24 just feel more comfortable doing it that way, that's
25 an opportunity, too. So...

1 Anything I missed? We're going to try to
2 -- try to stick really closely to the agenda. And,
3 you know, this is your opportunity to ask questions,
4 so you don't want to hear -- listen to us talk at
5 you all night, so we're really going to stick
6 closely to -- to what we have outlined here and give
7 you plenty of time for your questions and -- and
8 we'll address those to the best of our ability.

9 So why don't we get started. Any -- any
10 other questions before we turn it over to Jim?

11 Okay.

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1 **100 F/IU PROPOSED PLAN PRESENTATION**

2 **U.S. DEPARTMENT OF ENERGY -- RICHLAND OPERATIONS**

3
4 **MR. HANSEN:** All right. Welcome. I am
5 Jim Hansen. I am with the Department of Energy, and
6 I am the -- I guess I'm going by the CERCLA Advisor.
7 And CERCLA is the -- the laws that we are working
8 with to do these remedial decisions.

9 And so I wanted to start this off by
10 saying that we -- about a year ago, we held a public
11 meeting on the 300 area, this is another are of
12 Hanford, and we learned a lot from that -- from that
13 interaction. We learned that the -- the
14 presentation that we did at that point in time was -
15 - was very complicated, very technical.

16 We tried to pull that back. We tried to
17 listen to -- to some of the concerns that came up at
18 that -- at that time. And we also, through the
19 public comment period, we learned a couple things,
20 we were reminded of a couple things that actually
21 changed the Record of Decision.

22 One of the things that we did not do a
23 very good job at in preparation was -- was look at
24 endangered species in the river. We filed that
25 before the Record of Decision had looked at the

1 endangered species, what the potential effects there
2 were on those, and we appropriated that in the
3 document.

4 We also had some questions about the
5 institutional controls that we were -- we're
6 proposing for the 300 area, and we clarified that in
7 the document.

8 So we -- we really do listen to the
9 public. We will respond to -- in the 300 area, we
10 did a summary response. We -- we looked at all the
11 questions, there was a lot of similarities. We
12 responded to the -- the types of questions, the same
13 tones of questions and put them, a response of the
14 summary, in the Record of Decision itself.

15 So, again, this is on the 100-F/IU. 100-F
16 area is the reactor area. IU is the isolation
17 units, which is some -- some areas in between the
18 major areas of Hanford. And I'll show a map here in
19 a second.

20 So I will go through the remediation
21 progress to date, a summary of the proposed plan,
22 and an anticipated schedule from this point forward.

23 So here is a -- a map of the Hanford site, and
24 you can see that there's a -- there's an area around
25 the major -- the major activity areas. To the north

1 is the Hanford Reach National Monument. Then there's
2 some areas down here to the south. The Columbia
3 River runs right along the north edge of the site.
4 There's different reactor areas: 100-BC, 100-K,
5 100-N, 100-D/H, and those are all operable units
6 decisions that we will be coming to the public in
7 the coming years.

8 The 300 area is what we had worked on
9 about a year ago, and that Record of Decision came
10 out, I do believe around November.

11 So what is in the -- the yellow around the
12 middle of the -- the site is the isolation units.
13 That's the areas between the reactor areas and the
14 central plateau, which is where all the processing
15 occurred from the -- from the -- the uranium that
16 was irradiated in the reactors.

17 So this is the area between the -- between
18 the central plateau and the reactor areas. This is
19 the isolation units. And there was some waste sites
20 out there we -- we took -- we are taking care of.

21 100-F is this smaller location up here
22 next to the river. And there was a reactor there
23 and that was the main focus of the cleanup.

24 Here's some historic photograph and -- and
25 a recent photograph of the 100-F. You can see back

1 in the day there was -- there was a lot of activity,
2 a lot of buildings. It operated from 1945 to 1965.
3 All these buildings have been removed.

4 The cleanup at 100-F proper has been --
5 has been completed under an interim action and, in
6 the process of this -- this current proposed
7 decision, we went through and checked the cleanup of
8 that original action, the interim action, to
9 determine if that was -- was sufficient to call a
10 formal Record of Decision.

11 And you can see that all the buildings
12 have been removed. There's been -- there's been
13 backfill. There has been a revegetation.

14 So to start off, within the 100-F area
15 itself, the proper remediation was completed under
16 the interim action; interactions were re-evaluated
17 in the proposed plan. There's about a two-square-
18 mile area that was -- that was the -- the -- the
19 main focus of the remedial action efforts in 100-F.
20 We removed approximately 1.5 million tons of
21 contaminated material. That action -- interim
22 action was completed and revegetation was -- was
23 completed in the winter of 2012.

24 This is a photograph of some of the
25 remediation that was completed. This was one of the

1 -- the deeper digs that we did to chase after
2 hexavalent chromium. And you see that we had
3 excavated down to the groundwater level.

4 The isolation -- isolated unit areas, we
5 removed approximately 500,000 tons of contaminated
6 material and, to date, when the RoD is expected to
7 be completed, we should have around nine sites left
8 to go. The rest of the sites have already been
9 remediated and, to date, everything has met the --
10 the objectives of the Record of Decision that we are
11 proposing now.

12 Here's a different photograph, another
13 area. You can see these are typically quite small
14 areas. What's left is -- is small, relatively
15 uncomplicated sites. There's a -- in this case
16 there's -- I think those are, like, filters or oil
17 cans.

18 The groundwater underneath this area is -- is
19 one of the main concerns that we -- that remain.
20 And there's -- there's three -- four different
21 contaminants that are -- we call "contaminants of
22 concern." And that is: hexavalent chromium -- or,
23 it's identified here as chrom VI, strontium-90,
24 trichloroethene or TCE, and nitrate.

25 And the different colors, you can see that

1 the -- there's a green outline in the better
2 photograph in the back. There's a green outline
3 that goes around this area. That is the -- the area
4 that exceeds the drinking water standards presently.
5 And this is about 2,600 acres. So exceeds the
6 drinking water standard by a factor of about two or
7 three.

8 The TCE, or trichloroethene, is in the
9 purple, and that's about 242 acres. That material
10 is -- is not very mobile.

11 And hexavalent chromium is this little
12 area right about there, and that's about 16 acres --
13 or, no, 41 acres, 16 metric acres or hectares.

14 And the -- the strontium-90 is about 18
15 acres in the red.

16 Along the river -- we don't give the data
17 here in the slide, but in the last three years,
18 we've had one exceedance of -- of a required
19 standard in the river, and that's been for
20 strontium-90. It was a concentration of eight -- or
21 nine picocuries per liter, and the standard --
22 picocuries standard is eight picocuries per liter.
23 So the last three years, nothing else has exceeded
24 standards in the river; and before that, we had just
25 a very few exceedances for the previous five years.

1 So, for the most part, this material is
2 relatively low concentrations. It does exceed
3 standards. It does require an action and we have a
4 basis for action.

5 So the critical alternatives that we are
6 presenting in the proposed plan is a little bit
7 different than what we did in the 300 area. In the
8 300 area, we did Alternative 1, 2, 3, and 4. Here
9 we separated the soil cleanup alternatives and
10 groundwater cleanup alternatives, so there's --
11 there's S alternatives and G alternatives.

12 For soil, we have two alternatives. One
13 is no action. That's something that's identified in
14 the -- in the laws, the federal laws. That's
15 something that we looked at. It doesn't meet the --
16 the objectives, doesn't meet the requirements, and
17 so that did not go any further.

18 Our other alternative was to remove, treat
19 and dispose, and some institutional controls. So
20 remove the components, remove contaminated soil and
21 debris, treat to meet land disposal restrictions and
22 dispose, or RTD. That's the standard action at
23 Hanford and the river corridor.

24 We backfill, recontour and plant native
25 vegetation. And that's been, like, sagebrush and

1 rabbit brush and some grasses, native grasses. We -
2 - we've been trying to bring that back. And often
3 those places actually look better than what's --
4 what has grown naturally there.

5 And then institutional controls to prevent
6 exposure to residual contamination until those
7 cleanup objectives are met. And that is the -- the
8 first one is to prohibit irrigation at one site. If
9 we were to irrigate at that one site, there was the
10 potential for hexavalent chromium to reach the
11 groundwater.

12 Remember, there's -- there's presently no
13 irrigation in this area, but we do have a -- we are
14 putting on an institutional control to prohibit
15 irrigation at that location until such time as it
16 meets standards.

17 Then at 15 sites, there is excavation
18 restrictions. There is some deep radionuclide -- so
19 it's strontium and cesium, primarily -- that is
20 below 15 feet. The state requirements were down --
21 that we clean up down to 15 feet for direct contact.
22 Below 15 feet, there's no requirement to remove it.

23 We wanted to put an institutional control
24 to make sure that we marked those locations, watch
25 those locations over time. And most of these

1 locations will decay within -- within a relatively
2 short amount of time. Some of them will take
3 several decades. But it's below 15 feet.

4 The time frame to complete this action
5 right here is three to five years. We'll probably
6 be done sooner than that. And this action is an end
7 price, \$21 million.

8 For groundwater, we have four
9 alternatives. One was no action. It was identified
10 as a requirement. We -- that was not considered any
11 further because it did not meet the basic
12 requirements.

13 The preferred alternative is -- is
14 Groundwater 2, which is a monitored natural
15 attenuation and institutional controls. I'll
16 identify some of the mechanisms of attenuation that
17 we looked at in the next slide. But we were able to
18 show that -- that natural attenuation was an
19 effective mechanism to reduce the contamination in
20 place. Institutional controls to prevent exposure;
21 monitoring or adding wells. And the action; to
22 monitor it to make sure that it performs as -- as we
23 anticipate.

24 The time frame; 35 years for hexavalent
25 chromium, 150 years for strontium-90, 80 years for

1 nitrate, and 50 years for trichloroethene. The cost
2 is about \$36 million.

3 The two other alternatives we looked at,
4 Groundwater 3 is a pump-and-treat alternative with
5 in-situ treatment, meaning we're adding -- at
6 certain locations we're adding a substrate -- in
7 this case, there was ethanol -- to enhance the
8 biologic activities; to reduce the oxygen in the --
9 in the groundwater, which converts some of the
10 material like nitrate to a less-toxic form and
11 hexavalent chromium to a less-toxic form.

12 If you look at that alternative, the
13 performance was better for -- for hexavalent
14 chromium, very similar for -- for strontium-90 and
15 nitrate, and a little bit faster for TCE. The cost
16 of that is \$177 million.

17 Groundwater 4 is a more extensive pump and
18 treat without the addition of the substrate. And
19 the -- the performance was -- was very similar. A
20 little bit better for nitrate, but very similar in
21 the other respects.

22 So I'll very briefly go through these with
23 -- with a little more discussion. The nitrate plume
24 as shown on the map of the different types of
25 concentration rates, the darker is the high

1 concentrations, you can see that -- that the nitrate
2 has spread to the south. This is kind of the
3 direction of the groundwater flow with respect to
4 the river.

5 The -- there's other -- the other plumes
6 from the original map I showed are still outlined
7 here. The attenuation mechanism that we were able
8 to show --

9 **MALE:** I'm sorry, I didn't know whether
10 you wanted questions at the end or do we interrupt?

11 **MR. HANSEN:** At the end would be better,
12 and I'll try to break.

13 **MALE:** How about just trying to fix the
14 display so it's a little more in focus. Like the
15 legend, for example, it looks like it's up here. If
16 we can turn off some lights and make it a little
17 more visible...

18 **MR. HANSEN:** So the attenuation mechanisms
19 that we were able to show and that are occurring in
20 the groundwater; we do have radioactive decay for
21 strontium-90, and that -- that -- strontium-90
22 decays at the standard rate of -- of approximately
23 every -- a half-life every 30 years.

24 Typical stabilization. Absorption of --
25 of the chemicals to -- to soil particles, sediment

1 particles. If some of the -- the chemicals don't
2 move very fast through the soil.

3 And the biodegradation. There's --
4 there's areas where there's biological activity, and
5 that causes some of these chemicals, such as
6 hexavalent chromium and nitrate, to convert to less-
7 toxic forms.

8 Alternative 3. We have the -- the pump-
9 and-treat system in this -- this northern section.
10 We have the -- the substrate addition along this --
11 this western side, and that would cause degradation
12 through the center zone.

13 And then Alternative 4, more extensive
14 pump-and-treat network throughout the entire nitrate
15 area.

16 So the preferred alternatives were
17 Alternative S-2, which was -- was found to protect
18 the environment, complies with the applicable
19 requirements. It's cost-effective and it's readily
20 amenable. This was the only alternative that we
21 evaluated. It's -- a standard approach at Hanford
22 is to do RTD.

23 And the preferred alternative we had for
24 groundwater is Alternative 2, which is about
25 protecting the health of the environment. Since the

1 soil -- excuse me. Since the soil resources have
2 been remediated, there is no further source into the
3 groundwater. The plumes are decreasing in
4 concentration. We have shown that there is
5 effective natural attenuation. And there's -- there
6 is no -- the concentrations in the river currently
7 do not exceed standards. And monitoring wells are
8 in place. We are going to add additional monitoring
9 wells. And it's readily amenable with significantly
10 lower cost.

11 So the schedule from this point forward;
12 we are currently in the public comment period. That
13 is scheduled to end on August 11th, and we -- it
14 started on June 9th. After we finish the public
15 comment period, we will prepare a Record of
16 Decision. It is an EPA Record of Decision. We'll
17 be assisting the EPA wherever they need. We plan on
18 issuing the Record of Decision sometime in
19 September, barring identification of a significant
20 issue.

21 And then after the Record of Decision is
22 issued, we go into a remedial design, a remedial
23 action work plan. That's the design phase. A
24 PowerPoint to implement this, where we're going to
25 put the wells, those sorts of things, and

1 implementation of the Record of Decision in 2015 and
2 2016.

3 And with that, I am finished. Thank you.

4 **MR. BOHRMANN:** Okay. Thank you, Tim.

5 Dan, do you want to come up and get
6 started?

7 Yeah. If you could hold one minute -- do
8 you have a question about what the -- the
9 presentation that was just given?

10 Okay. We're going to let Columbia
11 Riverkeeper give their perspective real quick, and
12 then we'll go into a full Q and A.

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LOCAL PERSPECTIVE**DAN SERRES, COLUMBIA RIVERKEEPER****ABIGAL CERMAK, COLUMBIA RIVERKEEPER**

MR. SERRES: Can you hear me? All right.

Hi. My name is Dan Serres. I'm the Conservation Director with Columbia Riverkeeper. And thank you all for coming out tonight. I just really appreciate the fact that on a warm, sunny day, when there's an oil train hearing going on right across the river in White Salmon, that some people are here to devote their time and energy to dealing with the Hanford cleanup.

MALE: I couldn't get into the oil train hearing; it was too crowded.

MR. SERRES: Say what?

MALE: It was too crowded. I had to come over here.

MR. SERRES: My child's across the river in White Salmon.

So, a couple things that we wanted to do just to tee this off, first of all, was to -- to state that, you know, this kind of area decision is the first main plutonium reactor that will go through a final decision on a river corridor. So

1 this is the first time that we'll say, okay, this
2 reactor area is cleaned up or not. It's very, very
3 important that we weigh in now. And -- and so I
4 think it's -- it's critical for all of you to be
5 here and to weigh in by August 11th.

6 The second big piece that I wanted to
7 point out is that the Hanford Advisory Board has
8 issued very, very strong, clear advice on how the
9 Department of Energy should approach the cleanup of
10 the F area.

11 Because it's so critical, because the
12 Hanford Reach is not only drinking water in the Tri-
13 Cities, it's also the best main stem spawning
14 habitat for Chinook salmon in the entire Columbia
15 River, this is an area where Columbia Riverkeeper
16 agrees with the HAB and we feel like it's really
17 critical to -- to get a thorough cleanup.

18 One of the confusing parts about this
19 proposal is it encompasses -- yes?

20 **MALE:** Really sorry to interrupt you.
21 Could we borrow your thumb drive to get -- so the
22 people on the webinar can view this at the same
23 time?

24 **MR. SERRES:** I'm going to keep going just
25 -- just so -- folks on the webinar, I hope you can

1 clue into this in a little bit.

2 So I want to get down to what the Hanford
3 Advisory Board has really pointed to in terms of
4 this decision because it's really, really critical.

5 So the Hanford Advisory Board is made up
6 of groups like Riverkeeper, groups like Heart of
7 America Northwest, groups like the Yakama Nation,
8 the state of Oregon, the Oregon Department of
9 Energy. It's a wide-ranging, very diverse group,
10 and that group came together and gave consensus
11 advice that hit a few big points.

12 The first is that 150 years of monitored
13 natural attenuation is an unacceptable time frame
14 for cleanup in the F area.

15 The second point is that institutional controls
16 over a -- what -- over a time frame like 150 years
17 is also unacceptable. It's -- institutional
18 controls means we put up a sign, we put up a fence,
19 we say: Don't drop a well here. Don't drink the
20 water. Don't fish in this area. It's hard to
21 imagine over a 150-year time frame that that would
22 be reasonable.

23 The third big step that HAB pointed out
24 was there are more proactive solutions to dealing
25 with the main driver for this very long time frame,

1 which is strontium-90. In the N area, the
2 Department of Energy has deployed a permeable
3 reactive barrier, which is basically a mineral wall
4 that intercepts strontium and binds it up in the
5 soil before it flows into the Columbia River.

6 DOE didn't even look at this option.

7 We're not -- we're not saying that this is the best
8 option that's out there, but DOE didn't even
9 consider this as part of its proposed plan. So
10 again, that's a huge failing of this proposed plan.

11 And ultimately, we think that, you know,
12 this being the first main decision on the river
13 corridor, we can do better than this, and we have
14 to.

15 With that, I want to introduce Abigail
16 Cermak, who is our new Hanford coordinator, who's
17 going to point out some of the more specific issues
18 in this plan.

19 **MS. CERMAK:** Thank you, Dan.

20 So I'm going to try to keep this real
21 short so we can move on to questions.

22 I'm going to touch on a little bit more of
23 what Dan mentioned as well as point out some things
24 that Columbia Riverkeeper has of this plan.

25 One is how we're defining a reasonable

1 time frame. I think it's a little misleading of
2 Energy to say that the soil remediation and the S-2
3 alternative will be three to five years and that
4 even those institutional controls will be a few
5 decades.

6 If you notice on this that I took right out of
7 their report, there is an area -- 118-F:83 -- that
8 says it will have institutional controls for 264
9 years and also irrigation will be prohibited
10 indefinitely. And to me, that is not a sign of a
11 reasonable time frame.

12 Not to mention the groundwater remediation
13 plan at 150 years, or even 80 years, for natural
14 attenuation doesn't seem like a very reasonable time
15 frame when there are other alternatives that can
16 take care of these plumes much faster.

17 And now I want to speak to why a monitored
18 natural attenuation, or basically the wait-and-see
19 approach, is not the best alternative. I took this
20 information straight from guidance documents for
21 natural attenuation, which says it's not the best
22 sort of alternative for metals and radionuclides
23 since they do not react the same under natural
24 attenuation as do organics or inorganic chemicals.

25 Proof of that is that radionuclides like

1 the strontium-90 are based on half-lives for the
2 wait-and-see approach, and they do not react the
3 same -- no, excuse me, they're considered too slow
4 for a reasonable remedial time frame under natural
5 attenuation.

6 Furthermore, if there is co-contamination
7 in groundwater, it can compromise natural
8 attenuation. If you look on the slide, you can see
9 that several of these groundwater plumes and
10 chemicals are mixing together. That would be co-
11 contamination.

12 And, furthermore, natural attenuation
13 should not be used if there's a possibility of
14 migration. And I think Energy mentioned that these
15 plumes are moving to the south;
16 that would indicate migration.

17 And this is another snapshot of the
18 cleanup plan that I took that lists the alternatives
19 for groundwater. And I just want to point out, at
20 quick glance, you can see that the last alternative
21 is the best alternative, regardless of cost.

22 And one of the things that I think is
23 really glaring is that the chosen alternative is
24 Groundwater 2 -- I'm just going to jump up here real
25 quick -- long-term effectiveness is rated as

1 performing well against the criteria with no
2 apparent disadvantages or uncertainty. But then
3 here, the reduction of toxicity, it said expected to
4 perform less well. These two don't seem to match
5 up, but they're very interconnected.

6 And I do want to mention regarding cost,
7 you know, there's going to be increased costs due to
8 uncertainties if we rely on natural attenuation. So
9 it's just going to cost more to clean this up later
10 if their preferred alternative does not work.

11 And finally, I just want to mention that a
12 weak cleanup plan like this kind of sets precedence
13 for how other cleanup plans will be drafted and
14 implemented for other areas in Hanford. So that's
15 just something to keep in mind.

16 So in closing, I would like to ask our
17 regulatory agencies, EPA, the Department of Ecology,
18 to really hold Energy accountable for their
19 agreement to the public and to advocate for a more
20 aggressive cleanup plan because why are we, you
21 know, playing with one of our most prized natural
22 resources in our region?

23 Thank you.

24 **MR. BOHRMANN:** Okay. Thank you, Abigail.

25 Thank you, Dan.

1 QUESTION AND ANSWER SESSION

2 **MR. BOHRMANN:** Okay. We're going to open
3 the floor here to -- to your questions and, oh, I'll
4 take hands as best I can.

5 We'll go in order and -- and if you could
6 come up and use the microphone, I'd appreciate it.
7 There's two up here for the -- so we can make sure
8 to capture it on the transcript.

9 I also want to make sure to introduce
10 Chris Guzzetti. He's with the Environmental
11 Protection Agency, and the EPA is the lead
12 regulatory agency on this decision.

13 **MR. GUZZETTI:** I was just going to
14 introduce myself. That's all.

15 **MR. BOHRMANN:** So Chris with EPA and --
16 and Jim, again, with U.S. Department of Energy on
17 this obviously important decision of the Hanford
18 river shore.

19 So why don't we start with this gentleman
20 here. I saw his hand get up first, and...

21 If you would state your name before your -
22 - before your question, we'd appreciate that for the
23 transcript.

24 **MR. WOOD:** My name is John Wood, and I
25 just noticed that you'd mentioned one-and-a-half

1 million tons of contaminated soil, and after that
2 you mentioned another half a million.

3 And where do you put it? I mean, if
4 you're just shelving it, you know, they're still
5 going to be on Hanford Reservation, and it might be
6 that this area is cleaned up, but what happens to
7 the dumping ground?

8 **MR. HANSEN:** The materials removed was --
9 was transferred to the -- there's a central burial
10 ground called ERDF and ERDF stands for Environmental
11 Remediation, Restoration and Disposal Facility.
12 Something like that.

13 Okay. It -- it is a location in the
14 central plateau that is a -- a conforming burial
15 ground, and there's -- there's treatment -- or
16 there's not treatment, there's -- there's
17 infiltration water catch underneath it.

18 John, did you want to add to that?

19 **MR. NEATH:** I'm John Neath and I'm with
20 DOE as well.

21 Yeah, the ERDF that's been operating since
22 back in the first days when we first started
23 remediating back in the '90s, it's grown very large.
24 It is centralizing of the waste depository, but it
25 is a double-lined facility. It's got -- it's got

1 the natural wells up and down the gradient of it,
2 and as it was mentioned, the leachate is collected
3 from those -- between the liners to collect any
4 contamination that might be taken out.

5 A lot of the soils come in and have had
6 dust suppression put on them, so there's some water
7 that needs to be taken off, and that's taken off and
8 treated.

9 So this lined facility is -- is put in the
10 central part of the Hanford area, which is very high
11 above groundwater, so there's quite a lot of
12 distance between the groundwater and it's not
13 expected to leak anyway, so.

14 **MR. WOOD:** Is there a roof on it or
15 something for rain?

16 **MR. NEATH:** Yeah. Once -- once it's
17 closed, there will be a -- a barrier placed over the
18 top of it.

19 **MR. BOHRMANN:** Okay. Next question.

20 **MR. HESS:** I'm Jurgen Hess. I live in
21 Hood River.

22 My question is why 150 years? Is 150
23 years based on including economics? If economics
24 was not included, why couldn't strontium-90 be
25 cleaned up in less than 150 years? Say, 50 years,

1 30 years, whatever.

2 **MR. NEATH:** The 150 years is really based
3 on that half-life of strontium, the amount of
4 strontium that is there. It'll take -- the half-
5 life is 30 years, so it'll take that 150 years just
6 for that material to decay.

7 Now, we did look at several different
8 options, but -- for example, the MNA, which is watch
9 it in place while it decays. If we had done
10 something like the permeable reactive barrier, even
11 if it got caught in the barrier, it still takes that
12 150 years to decay.

13 And if we did the -- tried the pump-and-
14 treat alternative, which is Alternatives 3 and 4,
15 it's not very easy to get that out of the -- because
16 it tends to bind to the soil, we can't get the
17 strontium out it, out of the groundwater very well.

18 Once we get it to the surface, we can
19 treat it, but it still ends up taking that long
20 until you're done because it keeps going back to
21 just depending on the time frame for the decay of
22 the radioactive materials.

23 Did that answer it?

24 **MR. HESS:** Yes, thank you.

25 To follow up on that, some of the

1 contaminated soil and water is being put in these
2 glass walls through vitrification. Could that be
3 done with this material?

4 **MR. NEATH:** Well, if we had -- it's,
5 again, the problem of collecting that strontium
6 where it is. Once we manage to get it out of the
7 ground, there's several ways to treat it that would
8 work fairly well, like ion exchange or something
9 like that, and -- which, in fact, would probably be
10 easier than something like trying to vitrify or
11 anything like that.

12 **MR. BOHRMANN:** Okay, thank you. Next
13 question.

14 **MR. DEBRUIN:** My name is Greg Debruin
15 (phonetic). I guess I'm going to back up for a
16 minute. Twenty-five years ago, we started on this
17 road to get Hanford cleaned up, and we always knew
18 we'd get to a point in time, as Dan has said, where
19 the river shoreline, we're going to finally say
20 we're done.

21 I've been gone for eight years doing other
22 things in my life. Then I got a flyer from Columbia
23 Riverkeeper and from Heart of America Northwest, and
24 I looked at it and was kind of shocked that, one,
25 anybody can step forward and propose an ending.

1 When Nick Ceto left the EPA, that was his
2 little nest egg he left. There was MNA, monitored
3 natural attenuation, which he said: Do nothing.
4 Sit back and wait.

5 If you look at the responsibility that we have
6 and you look at a timeline going forward, it's hard
7 to imagine that somebody could honestly sit here and
8 say MNA is our solution to get you to say: Okay,
9 we're done. It's cleaned up.

10 If you're a tribal member, you couldn't agree
11 to that. There's no way in heck. Nobody could. If
12 you're a tribal member. So you take them and put
13 them over there and say: We don't care.

14 If you're a citizen of the state of Washington
15 and you're thinking of land use, you say: Wait a
16 second. Eighty years from now, DOE is still going
17 to be her monitoring the site. Fifty years from
18 now, DOE is still going to be here monitoring the
19 site.

20 And the population isn't going to grow.
21 And nobody in their right mind would ever want to
22 build a house, irrigate, grow crops, use 586 square
23 miles, or the whole shoreline of the Columbia River
24 in the future in 40 years. How can you come with
25 that assumption? You can't.

1 How can you say that monitored natural
2 attenuation is something that is acceptable not only
3 to the people sitting here, but acceptable to all
4 the future generations? You can't say that.

5 But then you go back to the law. And the
6 law says if you have a technology that could
7 remediate an existing problem, MNA is not
8 appropriate or applicable. It's very clear.

9 So for me, I'm sitting here saying: No. You
10 are trying to sell something that isn't based in
11 science, fact, and, isn't the final solution that
12 creates a remedy that solves the problem.

13 Now, if you look at what the problem is,
14 according to the limited document that I have here
15 because I haven't read the whole document because I
16 haven't been doing this for a long time, it's, what,
17 300 pages? And really, what it boils down to, is a
18 hundred and -- the cost is \$171 million. That's
19 what we're talking about, 198 million. Okay. \$198
20 million -- 194 million. That's what it's -- you're
21 talking about, \$200 million, to create a usage that
22 you might be able to use it, but you still couldn't
23 irrigate. So you haven't solved the problem.

24 So how do you expect the tribes, let alone the
25 taxpayers, let alone the people that live in the

1 northwest, let alone anybody that comes here in the
2 future, to come back and look at you in the past and
3 say: Oh, hey, that was a really good decision. We
4 can't use any of this land.

5 So, I'm sorry. I'm actually really
6 disappointed. I figured there would be something of
7 value, something that you could actually come back
8 and say: Here, we can justify this.

9 But then I ask the question; I want to see
10 a full cost analysis for 150 years out, how much
11 money you're going to spend when somebody challenges
12 the decision, when somebody comes back and finds out
13 that the plumes have moved. How much money is that?
14 Where is the cost analysis for that? For the whole
15 time that this hazardous material remains hazardous.
16 150 years. Where is it? Where is the cost
17 analysis? How does it compare with the 194 million
18 being spent in the next three, four, five years.
19 Where is it? I don't see it. It's not there.

20 So I think the agencies have gone short
21 and I think the policy being driven somewhere
22 internally at DOE says, hey, we don't need to worry
23 about this; let's do our homework and get this thing
24 out, and let's make a decision.

25 It's an uphill battle. We aren't doing

1 the work right. And kind of a sad state of affairs,
2 25 years later coming back and saying we're going to
3 leave the shoreline crapped up.

4 Oh, and the final thing is this one thing
5 the DOE has consistently ignored -- consistently
6 ignored -- is if you talk to the BPA, the Bonneville
7 Power Administration, their lifetime for a dam on
8 the Columbia River is 100 years. That's it. Their
9 assumption is that in 100 years, the dams will have
10 to be removed because of structural problems.

11 Everybody knows this at DOE because I've
12 been talking about this for a long, long time. But
13 yet, that's not in the analysis.

14 So your static analysis says that that
15 shoreline is going to stay the same no matter what
16 happens. Climatic change, no matter if a dam is
17 taken out, no matter what happens, that's going to
18 stay the same. So I would like to see the analysis
19 that looks at what you did to predict in your
20 modeling that shows that that river shoreline's
21 never going to change; the river is not going to
22 rise 50 feet, it's not going to rise 100 feet; and -
23 - and that material's going to stay there for your
24 predicted timeline.

25 And if you don't have that work, and if

1 you haven't done that work, then it needs to be
2 done. If you haven't done that work, you shouldn't
3 have come here and tried to present something that's
4 like this.

5 So, those are my comments. Thank you very
6 much.

7 **MR. BOHRMANN:** Thanks, Greg.

8 I guess, do you want to address that?

9 **MALE:** Is there a question? I didn't hear
10 a question.

11 **MR. BOHRMANN:** Was there a specific
12 question there, Greg, or just --

13 **MR. DEBRUIN:** There was a whole host of
14 them, so they can pick any one. I gave a whole
15 bunch of questions. There's a whole series of them,
16 and you can pick any one you want: Where's the
17 analysis; 150 years; the flood scenario; all these
18 cost analyses, where are they?

19 **MR. BOHRMANN:** I don't want to put words
20 in your mouth, but --

21 **MR DEBRUIN:** It's on tape, so -- you know
22 what I mean? Do you want me to go slowly or --

23 **MR BOHRMANN:** No, Greg. One of the main
24 things I heard was the question about monitored
25 natural attenuation. Maybe --

1 **MR. DEBRUIN:** There's justification for
2 using monitored natural attenuation where you have
3 existing technologies to remediate the problem. If
4 you have existing technologies that can remediate
5 the problem, MNA is not appropriate. If you go to
6 the metal side of the equation, it's not
7 appropriate. So how do you get there? How do you
8 get to that decision where we are today, where
9 you're taking the time of the public, the resources
10 of the department, eventually the taxpayers, and
11 laying that on the table and saying here's what
12 we're proposing? How do you do that? I don't
13 understand.

14 **MR. NEATH:** Well, to start off with, we
15 did look at the remedial technologies; we are
16 following the law. This is allowable.

17 **MR. DEBRUIN:** Say it again.

18 **MR. NEATH:** This is allowable under the
19 law. We have evaluated it to determine that
20 monitored natural attenuations is an allowable
21 alternative. We have -- we have compared the
22 alternatives to determine that -- that --

23 **MR. DEBRUIN:** Do you read -- do you read
24 the guidance that are --

25 **MR. NEATH:** Of course I do.

1 **MR. DEBRUIN:** Have you read the guidance?

2 **MR. NEATH:** Of course I do.

3 **MR. DEBRUIN:** Read back the guidance -- in
4 fact, the Columbia Riverkeeper just read a really
5 good excerpt of that. But the other part they
6 didn't say, if there's an applicable technology that
7 remediated in a much faster timeline, MNA is not
8 appropriate. Strontium-90 isn't appropriate when
9 you have salmon reaching spawning grounds. Chromium
10 is inappropriate when you have spawning grounds on
11 here. So where -- where -- show me -- tell me about
12 this -- this legal piece you're telling me right
13 now.

14 **MR. NEATH:** Right -- well, we have an
15 evaluation of monitoring with natural attenuation in
16 the RIFS. It's a full evaluation. It shows that it
17 is a viable alternative.

18 Secondly, Columbia Riverkeeper is not --
19 you're not exceeding water quality criteria in the
20 river. We have measurements out in the water and
21 the two are not exceeding water quality criteria.

22 **MR. DEBRUIN:** You're talking about
23 drinking water.

24 **MR. NEATH:** No, no. Aquatic standards.

25 **MR. DEBRUIN:** You said chromium didn't

1 exceed --

2 **MR. NEATH:** We are not exceeding chromium
3 standards in the river. Aquatic standards that
4 protect aquatic organisms.

5 **MR. DEBRUIN:** Even though you got
6 strontium-90 at nine picocuries per liter in the
7 river, you're going to let that stand.

8 **MR. NEATH:** The drinking water standard is
9 eight picocuries per liter. There is no aquatic
10 standard for strontium-90. There's a risk-based
11 calculation that we have calculated, the first --
12 the first level of ecological effect happens at 278
13 picocuries per liter for the protection of riparian
14 mammals and birds. The aquatic -- for fish, it's
15 much higher than that.

16 **MR. DEBRUIN:** So you're -- you're -- let
17 me back up.

18 **MALE:** Seven.

19 **MR. DEBRUIN:** Chromium -- chromium --

20 **MR. NEATH:** There's no effect of the
21 strontium-90 on the salmon RIFS from --

22 **MR. DEBRUIN:** Chromium?

23 **MR. NEATH:** Again, we don't have aquatic
24 standards for chromium in the river in that -- under
25 that.

1 **MR. BOHRMANN:** I just want to do a check
2 here, make sure we get everybody's questions and
3 comments. I know this conversation's probably to be
4 continued, but is there anyone else who has a
5 question, comment?

6 **MR. POLLET:** I'm Gerry Pollet. Sorry
7 about the disturbance. I had two people call me who
8 said they couldn't hear anything off the phone lines
9 on the webinar.

10 **MALE:** Speak into the mic, Gerry. I can't
11 hear you.

12 **MR. POLLET:** Oh. I'm not helping the
13 situation either.

14 **MALE:** There you go.

15 **MR. POLLET:** I said I'm Gerry Pollet, and
16 two people called and said they couldn't understand
17 what was happening on the phone line for the webinar
18 and we talked. But I apologize for that
19 disturbance. We wanted to try to get -- make sure
20 people could hear.

21 I have a couple of questions. I'll ask
22 them one at a time to make it easier. And I'd
23 appreciate if Riverkeeper, which gave an alternative
24 viewpoint, has an answer also, to hear their
25 response.

1 First off, just right off the bat, I'd
2 like to know if you have evaluated, in terms of the
3 total risk for the F area and cumulative risk for
4 Columbia River, the pending change in fish
5 consumption levels for Washington state, which, like
6 Oregon, would go up 25 times to -- from what it is
7 currently, and obviously is designed to protect the
8 health of people who are using the river and using
9 river resources for generations to come. Has that
10 been examined? I didn't see it in the RIFS
11 discussions.

12 **MR. HANSEN:** That -- that was not
13 specifically evaluated in area F, but in the
14 Columbia River component risk assessment for the
15 river, we evaluated a scenario called the adamant
16 angler and it had a consumption of very similar to
17 those levels.

18 **MR. POLLET:** How similar? As I recall,
19 there is great concern your angler was only on the
20 river a couple days a year for a few hours a year
21 and didn't eat anywhere near the level of fish
22 consumption that Native Americans are documented to
23 have along the river, from the Columbia River into
24 tribal fisheries, necessarily.

25 So how -- how many hours a day and a year

1 is your angler on in that and is that the basis for
2 determining this proposal, or is that a separate
3 document?

4 **MR. HANSEN:** We evaluated that in, like I
5 said, in the Columbia River component. It has a
6 similar consumption advisory. The tribal scenarios
7 were evaluated in both the 100-F and in the -- in
8 the Columbia River component.

9 The risk drivers for the risk for fish
10 consumption were broad-scale contaminants that are
11 found throughout the Columbia River, and we -- we
12 evaluated whether there was releases from that --
13 from Hanford driving that risk. If my memory serves
14 me correct, there was a -- carbon 14 was found in
15 fish mostly near 100-K, and that was identified as a
16 potential risk driver at that location. But there's
17 nothing -- nothing was apparent near 100-F.

18 **MR. POLLET:** My second question has to do
19 with groundwater. And in this proposal you proposed
20 to restrain anyone from using groundwater for how
21 many years, 150?

22 **MR. HANSEN:** A hundred and fifty.

23 **MR. POLLET:** Okay. So over and over
24 again, the proposals say that you are going to have
25 unrestricted use allowed as a cleanup standard,

1 meaning no restriction on use. The fine print:
2 Except we're not going to allow irrigation or
3 excavation.

4 If the area is open for, quote/unquote,
5 unrestricted use, how are you going to prevent use
6 of groundwater when it's illegal to withdraw the
7 water for any consumptive use or any use from the
8 Columbia River in Washington, but it is perfectly
9 legal, without any permission from anyone, to
10 install a groundwater monitoring well?

11 I looked through your documents and I've
12 seen nothing describing how you're going to
13 accomplish this. So, how are you going to do it?
14 Are you seeking a change in regulations? What are
15 you doing?

16 **MR. HANSEN:** The document clearly
17 identifies that DOE's anticipated future land use is
18 not residential, but we have agreed to clean up to
19 residential standards.

20 There is no anticipated residential
21 activity within -- within the foreseeable future out
22 there at the 100-F area.

23 **MR. POLLET:** You know, I'm glad you can
24 see 150 years into the future.

25 But you use the words "unrestricted use"

1 over and over again. Your land use plan is only
2 inoperable -- is only operable during the period of
3 time which DOE controls the area, and you don't
4 control, necessarily, the Hanford Reach National
5 Monument in the future and treaty rights which say
6 that Native Americans may live along and fish at
7 usual and accustomed fishing places.

8 So if we say it's safe to use it, I'd like
9 to know how you are going to prevent anyone from
10 actually using the groundwater when you say we've
11 ceded this area to Fish and Wildlife or someone
12 else, it's now available for unrestricted use, and
13 75 years from now someone says -- whether it's a
14 ranger station or a visitors' station or someone
15 living there temporarily or year-round, puts in a
16 groundwater well, how you're going to stop that?
17 What are you going to have in place to prevent it as
18 part of this plan today?

19 **MR. GUZZETTI:** Chris Guzzetti, BPA, again.

20 The institutional control is more like a
21 deed restriction. So in the event in the future if
22 DOE were to transfer land, that restriction would go
23 to whoever the new owner is.

24 **MR. POLLET:** You know --

25 **MR. GUZZETTI:** The new owner would --

1 **MR. POLLET:** There are no deed
2 restrictions in your federal land transferred to
3 another federal agency. You know that, right?

4 **MR. GUZZETTI:** Right. Well, but -- but --
5 but in the situation where they might -- where it
6 may become a residential type use, right, then you
7 have to probably be more of a local.

8 **MR. POLLET:** Again, not by inference. I
9 mean, it's a national monument area. I'm not
10 worried about it being transferred to, right along
11 the river, to Gerry Pollet Development, Inc. I'm
12 worried about someone saying: Oh, we have a tribal
13 right. We've been told by the federal government
14 it's safe, it's unrestricted use. We have a treaty
15 right to have a seasonal set of homes here. We have
16 a visitors' center, we have some other activities.
17 And how would you put in place a guarantee that no
18 one will use the groundwater?

19 **MR. HANSEN:** DOE is -- the federal
20 government's going to be here for a very long time.
21 There's -- the reactor's going to be there for 70
22 more years until the cores decay to the point where
23 we can remove them. The central plateau is going to
24 be there and actively managed for a very long time,
25 and I don't think --

1 **MR. POLLET:** You have a Tri-Party
2 Agreement that says you're going to get done
3 cleaning up, God bless you, and think you're really
4 going to live up to it by the end of the 2050
5 decade. We're talking about 150 years.

6 Clearly, it sounds as if you're not even
7 aware of the fact that we have no restrictions on
8 groundwater wells being installed in Washington. So
9 even if you had a deed restriction that was
10 transferred to private property, there would be no
11 way of enforcing that per groundwater well because
12 no one is going to check it and check the deed if
13 someone develops this area. And you haven't,
14 apparently, found out this. This is very
15 disturbing. It's not like it's the first time we've
16 raised this.

17 Finally, last question. There is the
18 liquid retention basin area with chrom VI under it.
19 In the plan it says that the chrom VI exceeds soil
20 levels -- contamination exceeds soil levels at a
21 level at which we would need -- let me rephrase
22 this.

23 It says chrom VI exceeds the level at
24 which the surface water of the river is actually
25 protected to flow from soil to groundwater and into

1 the river.

2 You're nodding your head.

3 So if that's the case, I'm concerned why we're
4 not excavating that chrom and why we're stopping at
5 15 feet. But my question is: How come that's not
6 presented clearly in your slides and in the fact
7 sheet, that you do have an area where chrom VI is
8 expected to reach the river and potentially exceed
9 the surface water level for protection?

10 **MR. NEATH:** Okay. The site was excavated
11 some years ago as a retention basin. It was a
12 liquid site, so the reactor coolant water was
13 actually disposed of to that site and there was a
14 leakage there outside the basin. There was also --
15 of course, the water eventually was diverted over to
16 the effluent pipeline to the river.

17 The excavation only went down to about 20
18 feet, I believe, and the cleanup levels that were
19 achieved at that time were evaluated against a
20 mobility calculation, a leach rate for those soils
21 that allowed the rate that was left there. It's
22 somewhere along the lines of about six parts per
23 billion. So that was considered at that time of the
24 excavation to be protective of the site, of both the
25 groundwater and the river.

1 Our next opportunity to calculate that was
2 utilizing a little more sophisticated software, and
3 we determined that the protectiveness of the site is
4 -- is protective if you don't irrigate that -- that
5 site, as you point out.

6 That is described pretty well in the
7 proposed plan, and the appendix of the -- the
8 appendix of the RIFS has quite the detailed
9 description of that.

10 So the normal use of this area that we're
11 expecting, as described earlier, is not an irrigated
12 site.

13 **MR. POLLET:** And for how long will you bar
14 irrigation on this site?

15 **MR. NEATH:** That's a good question. I
16 think we can probably expect that this hexavalent
17 chromium residual is not likely to be mobile, in our
18 estimation, in the first place.

19 But over time, you would expect that -- a
20 dispersion of that to occur, probably a very long
21 time period, and that that concentration would
22 likely disperse over a long period of time. It's
23 not likely to stay in one place. But it would be
24 very slow and not expected to be contaminating the
25 river over a long period of time.

1 **MR. POLLET:** So in answer to my question
2 how long, would you say you're actually proposing a
3 restriction longer than 150 years or less in that
4 second --

5 **MR. HANSEN:** Right now we've not put a
6 timeline on that. What we would do is if there was
7 a change in land use, if the -- if -- even though
8 it's not foreseeable, if for some reason the
9 government decided to transfer it out of -- out of
10 federal ownership -- which is not foreseen. It is
11 not anticipated. There is no expectations. There's
12 no plans.

13 But we, through our five-year review
14 process, because contamination is left in place and
15 any change in land use, we would be required to --
16 to evaluate those, we would likely go back and look
17 to see if -- what those concentrations are to see if
18 we needed to -- if that restriction would need to
19 remain.

20 And we, as seen in other locations across
21 the Hanford site, whether there's a residual in this
22 level of five or six parts per million in the soil,
23 we have not been able to find it because quite
24 likely a natural attenuation of that chromium
25 converting from hexavalent chromium to trivalent

1 chromium.

2 So we would -- we would check at that
3 condition where we would need to make a decision on
4 whether that actually would remain. Right now
5 there's no plans to -- to irrigate that area, and it
6 -- that would take a -- a change in land use, which
7 is not anticipated. If it were to change, we'd have
8 to reevaluate it.

9 **MR. SERRES:** What the --

10 **MR. BOHRMANN:** Hold on, Dan. Trying to --

11 **MR. SERRES:** All right.

12 **MR. BOHRMANN:** -- do a time check here.

13 So we're a little over 7:30. I want to make sure we
14 have enough time to get to the formal comment.

15 I want to go back to the webinar here. Is
16 there any questions from anyone on the Webinar?

17 No questions from the webinar.

18 Since you've already asked one question, I
19 just want to make sure if there's someone who hasn't
20 asked a question yet, and we'll get back to you
21 here.

22 Yes, sir.

23 And as Gerry pointed out, if there's folks
24 on the webinar that are having a hard time hearing,
25 let's make sure we -- I think you have to get kind

1 of close to these mics to have them project, so --
2 thank you.

3 **MR. ZORICH:** My name's Nathan Zorich, and
4 I had a question for the representative from
5 Department of Energy. And it's particular to one of
6 your slides, so if you could bring up slide 14 for
7 me.

8 Oh, I guess that wasn't 14. Sorry. Right
9 there.

10 Could you just point out for me on this
11 slide where the main stem Chinook spawning beds are
12 at?

13 Do you have a sense of that?

14 **MR. HANSEN:** There are various locations
15 along the Hanford Reach where Chinook spawn. The
16 main spawning areas, I believe, are upstream of
17 this. There are some downstream of this near
18 Ringold, but I could not tell you around here.

19 **MR. ZORICH:** Okay. My second question has
20 to do with the flood question, which I think is a
21 real important one.

22 Some of the slides that you showed during
23 the excavation, all the rock you guys were digging
24 up was all river rock. Right? This entire area is
25 just really a flood plain of the Columbia River,

1 which is why you have so much groundwater moving
2 through there.

3 Do you have a sense of what the hundred-
4 year flood looks like coming across the Hanford
5 Reach and how that -- in 150 years, we're likely to
6 see that? What impact would that then have on
7 moving the mobile on -- these contaminants into the
8 river?

9 **MR. HANSEN:** Was -- was the last couple
10 years considered like a 75-year?

11 I want to say, like, 400,000 cfs two years
12 ago, three years ago. And it was -- it was high,
13 but it was not -- it was -- in was in ending in
14 these area. This area through here becomes a flow-
15 through channel. But it's -- it would take a
16 majorly high flow to get up over the -- over the
17 embankment there.

18 **MR. ZORICH:** All right. Thank you.

19 **MR. BOHRMANN:** Thanks. We got one
20 question back here. Sir.

21 **MR. POSEY:** Okay. What role does the
22 rainwater --

23 **MALE:** Name?

24 **MR. POSEY:** My name's Jeremy Posey. I
25 live here in Hood River County. I want to know what

1 role rainwater takes in place of spreading the
2 contamination.

3 **MR. HANSEN:** In the calculation of -- of
4 infiltration down through the soil into the
5 groundwater, we -- we do have some long-term
6 monitoring stations looking at, with a certain
7 amount of rainfall, how much will get through the
8 soil into the -- in the groundwater, how much will
9 be used by plants, those sorts of things. And the
10 average around the site is about four millimeters
11 per year.

12 **MR. POSEY:** Okay. That doesn't seem like
13 a lot, but over 150 years, how much is that?

14 **MR. HANSEN:** Our modeling right now goes
15 out about a thousand years.

16 **MR. POSEY:** A thousand years. Okay.

17 So I see the nitrate is -- is what's, you
18 know, moving the fastest or, the most, you know,
19 readily. What is the cause of that?

20 **MR. HANSEN:** Well, different contaminants
21 have different mobility. The strontium-90 is very
22 immobile. Hexavalent chromium is highly mobile.
23 Nitrate is highly mobile.

24 And, Greg, you probably understand this a
25 little more about where that nitrate came from and

1 why it's moved south.

2 **MR. SINTON:** I think that the main thing
3 you're seeing with that nitrate plume is the -- the
4 size of the original source and how long it's been
5 going on. Plus, that was probably from the
6 Experimental Animal Farm that was up in the center
7 of the three -- of that F area there. And that was
8 operating up to about 1965, so that was quite --

9 **MR. POSEY:** So leave that to --

10 **MR. SINTON:** -- a while ago.

11 **MR. POSEY:** Okay. All right.

12 **MR. SINTON:** So way back then, there was a
13 lot of release and so it had the time to move to the
14 south as it has there. That's why that plume is so
15 large.

16 **MR. POSEY:** Okay. How much nuclear power
17 are we still using or creating radiation of if at
18 this time?

19 **MR. HANSEN:** At Hanford, none.

20 **MR. POSEY:** In -- in the U.S.

21 **MR. HANSEN:** I don't -- I need the
22 location.

23 **MR. POSEY:** You don't know. Okay. Is
24 there any end in sight of the use of nuclear power?

25 **MALE:** What did he say?

1 **MR. POSEY:** Was that -- that was a direct
2 no?

3 **MALE:** Would you please --

4 **MR. HANSEN:** I -- I don't know.

5 **MR. POSEY:** Would you please say what you
6 mean by at Hanford since there's a commercial
7 reactor on the Hanford Indian Reservation. Right?
8 But it's not --

9 **MR. HANSEN:** That's true, but that's not
10 operated by DOE.

11 **MR. POSEY:** Okay. But it's on the Hanford
12 Reach, right? So there's continual radiation being
13 created at the site or near the site.

14 **MR. HANSEN:** Sure.

15 **MR. POSEY:** Okay. And how is that
16 contamination being stopped from spreading when
17 there's multiple leaking dual-lined containers and
18 single-lined containers known to be leaking, 60, 70-
19 plus containers known to be leaking, and no end in
20 sight and we're adding to those containers
21 continually every day, day after day, with no end in
22 sight.

23 **MR. HANSEN:** All I can tell you is for the
24 operations at Hanford, we are doing everything we
25 can within the budget that Congress gives us to deal

1 with -- with this contamination.

2 **MR. POSEY:** All right. So is there any
3 way you can go to your boss and take it the next
4 step?

5 **MR. HANSEN:** I don't know what that step
6 would be.

7 **MR. POSEY:** When you go to the manager
8 above you and you raise a complaint because there's
9 something obviously -- there's an obvious problem.
10 Radiation kills people when -- you know,
11 in direct contact, and so to be continually creating
12 that problem when -- solar power can release all
13 those problems. And if the jobs -- any jobs lost in
14 radiation or nuclear power can be gained in solar,
15 wind, geothermal power.

16 **MR. BOHRMANN:** And thank you, sir. We
17 appreciate the concern. It's a little bit out of
18 scope for that discussion tonight, so...

19 **MR. POSEY:** All right.

20 **MR. BOHRMANN:** Anybody else before we go
21 to -- back to Jurgen.

22 **MR. HESS:** A couple of follow-up
23 questions. Jurgen Hess.

24 What is the position of Washington
25 Department of Ecology in this project? And also,

1 I'd like to know the position of the tribal nation,
2 particularly the Nez Perce.

3 **MR. BOHRMANN:** Nina, do you want to
4 address Ecology's role in this decision?

5 **MS. MINARD:** I could just say a few words
6 on it. I think the argument --

7 **MR. BOHRMANN:** Do you want to come up to
8 the mic real quick, or Jim's going to --

9 **MS. MINARD:** Thank you. I'm Nina Minard
10 with the Department of Ecology.

11 And our -- when there's an Ecology-led
12 operable unit with a proposed plan decision, is
13 Ecology reviews it and we make comments on the
14 proposed plan as to whether we agree or disagree in
15 a letter that is sent to EPA. We work through EPA
16 because EPA has the final approval. And we think
17 that this decision is consistent with Ecology
18 guidelines -- with Ecology guidelines -- with the
19 CERCLA guidelines, and we approve of it.

20 **MR HESS:** I'm not going to let you off the
21 hook that easy. In a way, that's a disservice to
22 the public because at that point -- we need to know
23 now so we can provide our input based on what your
24 feelings are. I mean, if you do it later, wait till
25 they make a decision, it's too late. So we need to

1 know now.

2 **MS. MINARD:** We have already reviewed the
3 proposed plan and it conforms with our state
4 regulations, and which MTCA is an AWAR (phonetic)
5 and that would be the state equivalent of some of
6 the CERCLA regulations. And in that point, we have
7 already reviewed it and one of the reasons why we're
8 here is to support the EPA and DOE in their
9 decision-making process.

10 Does that answer your question?

11 **MR. HESS:** I guess it's good enough. How
12 about the next phase?

13 **MR. BOHRMANN:** Can you restate that?

14 **MR. HESS:** Yeah.

15 **MR. BOHRMANN:** I'm not sure who would
16 address that.

17 **MR. HESS:** What is -- what is the position
18 on the -- on this project from the tribal nations,
19 particularly the Nez Perce?

20 **MR. SINTON:** The Nez Perce had sent us a
21 letter on the Draft A Proposed Plan, and they were
22 supportive of the proposed remedies. They did have
23 some other concerns with some of the particulars,
24 but they were supportive of the MNA, I think,
25 largely because it's least disruptive of the surface

1 use.

2 We've also received some comments from the
3 Yakama Nation and they are less supportive. They
4 favor Alternative Groundwater 4, which is pump and
5 treat.

6 **MR. BOHRMANN:** Okay. Greg, did you have
7 one more?

8 **MR. DEBRUIN:** Yeah. Just, you know, they
9 raised the question about water infiltration and
10 irrigation --

11 **MR. BOHRMANN:** Would you mind speaking in
12 the mic just for the folks on the webinar.

13 **MR. DEBRUIN:** The question again was
14 raised from irrigation, how are you going to
15 transfer groundwater, how are you going to keep the
16 restrictions in place for 100 years, 150 years, 80
17 years. It's clear that the agencies don't have the
18 answer. And so in order for somebody to come in and
19 say, well, we support this -- and I'm kind of
20 shocked to hear Ecology say: Oh, yeah, we're fine.
21 I'm kind of going, well, wait a second. How do you
22 resolve these issues? Well, we're fine, just move
23 ahead.

24 So if you go to WPPSS Power Plant and you
25 look at their worst-case scenario for a flood -- and

1 you can talk to Pam Brown, Harold Lecock (phonetic),
2 anybody from the Tri-Cities. They know a 50-foot
3 wall of water would come down the Columbia River.
4 Fifty foot. That's what "Whoops" uses. They've
5 talked to BPA about the dams; they will be removed.
6 In a hundred years, they're coming out.

7 Now, this is something that I've talked
8 about for years and years and years, and so it's in
9 every document we've ever -- all the risk
10 assessments, the original ones looking at the
11 comprehensive risks along the Columbia River, all of
12 those factors were supposed to be in there. But
13 yet, they don't exist.

14 For some reason, you sit there and
15 persuade people to believe that that environment is
16 going to stay static. Eight inches a year of rain,
17 maybe 11, may be worst case scenario. It's not
18 real.

19 So I don't know how you can sit here and
20 try to convince people that you've done your
21 homework. That you've evaluated the scenarios, that
22 you've evaluated the long-term costs, the potential
23 long-term impacts, and done the cost analysis
24 looking at all those other parameters. You haven't
25 done it. It's clear. It'd blow you out of the

1 water.

2 Go look at "Whoops's" scenario, the worst-
3 case scenario there is. Talk to BPA. You fail.
4 You get a 50-foot wall of water out here and your
5 containment and your scenarios and your things are
6 all gone. And yet you're sitting here trying to
7 convince somebody that in 150 years, everything's
8 going to stay the same. Or 100 years. Or 80 years.

9 And you say: Oh, well, that beats the
10 controls. A lot of good those will do if any of
11 those other scenarios change. And so if they do
12 change, worst-case scenario, what's your planning
13 and how do you prevent from worst-case scenario?
14 Where is that in your analysis? It's not there. I
15 guarantee it. You could throw stuff at me forever
16 and ever and ever, and I'll dig through it and I'll
17 find it doesn't exist. Doesn't exist.

18 So for me, I'm saying to convince somebody
19 to really come up and step up to the plate -- and
20 I'm not representing a tribal nation, but if I was,
21 whew, I'd be on you real fast just because of treaty
22 rights.

23 But I'm not. I'm just an individual sitting
24 here looking at the guys doing their jobs, and I'm
25 saying you need to convince the world that this is a

1 good decision by doing those analyses and come back
2 and say: Hey, we've listened to you, we've taken
3 this into consideration, and we've run these
4 scenarios. And, by the way, we might have to change
5 some things.

6 But to sit here and tell us that this
7 thing's going to remain static? I'm sorry, it's --
8 it's unbelievable. I can go to Disneyland, have
9 more fun, you know. It's like -- this is
10 ridiculous.

11 **MR. BOHRMANN:** Okay. Thank you. One more
12 check on the webinar.

13 No other questions on the webinar. Okay.
14 Anybody else have a last question before we move to
15 our third part of our meeting here?

16 Okay. Well, let's go ahead and move on to
17 the formal comment portion, then.

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19
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25

FORMAL PUBLIC COMMENT

1
2
3 **MR. BOHRMANN:** When you came in -- yes,
4 sir.

5 **MALE:** Oh, I've got a comment on this.

6 **MR. BOHRMANN:** Okay. When you came in,
7 you had an opportunity to sign in to provide public
8 comment. Even if you didn't, everybody will have an
9 opportunity to give public comment, and I think
10 we'll just go down the -- down the line in order
11 that you signed up.

12 And I'll just go ahead and call your name.
13 If you could state your name again for the record.
14 During this portion of the meeting, again, just as a
15 reminder, the agencies won't be able to respond.
16 But we will be responding -- or Department of Energy
17 and other regulatory agencies will be responding to
18 all formal comments after the end of the comment
19 period.

20 So our first commenter is Dan Serres.

21 And if you could limit your comments to
22 two, three minutes, roughly, and if we have time at
23 the end, we can go through again if you want to give
24 further comment.

25 **MR. SERRES:** Yeah. I've already had a

1 chance to speak, so I feel a little awkward going
2 first, so I'm happy to defer to other folks. But I
3 think we've got a small enough crowd, I'll just
4 start by saying a couple things.

5 One, I think the idea of having a no-
6 action alternative and then a one action
7 alternative, the soil remediation, kind of -- that's
8 clearly inadequate.

9 There probably are a range of things you
10 could do with digging deeper in some of these areas
11 and I think the plan lacks that full range of
12 alternatives that would normally be presented in
13 this type of analysis.

14 Secondly, I would just say that the idea
15 that 150 years is going to be a reasonable time
16 frame for dealing with strontium or other
17 contaminants, it just -- it doesn't pass the test of
18 -- kind of the laugh test for most folks.

19 A hundred fifty years is a long time and
20 none of us really believe that it's reasonable to
21 believe so much contamination of the soil or its
22 usual controls to mitigate or for MNA to, you know -
23 - for that process to decay it away.

24 So I guess what we would ask is that you
25 take a much more active approach and look at

1 Groundwater No. 4, that alternative, as something
2 that makes a lot more sense.

3 And then sort of ultimately on the
4 process, I think that -- the other thing that was
5 really glaring to me was the fact that you've got
6 almost a third of the Hanford site. I mean, it's a
7 huge swath of Hanford lumped into this one big
8 decision.

9 The issues that face the areas just right
10 near the reactor are very different than all the
11 inactive units that surround it, and so I would
12 suggest that these really should have been separate
13 decisions. It doesn't make sense to lump in, you
14 know, hundreds of -- you know, 150 square miles and
15 then this one reactor area that's very acutely
16 contaminated. Those things are so different, it
17 makes it very difficult for the public to address
18 the key issues in either one. And so I would
19 suggest, respectfully, that that -- that's maybe
20 something you should think about parsing out and
21 separating going forward.

22 Lastly, I would -- I would say that in the
23 F area, there's a real need to consult with federal
24 agencies when it comes to threatened and endangered
25 species. This is an incredibly critical area for

1 salmon recovery, and the lack of consultation on
2 this river corridor of decisions is something that
3 we think is a glaring flaw in -- in how we're moving
4 forward.

5 So, with that, thank you.

6 **MR. BOHRMANN:** Thank you. Abigail Cermak.

7 **MS. CERMAK:** Thank you. I'm Abigail
8 Cermak. Just like Dan, I also had an opportunity to
9 speak, but I do have a couple things to mention.

10 One's going back to the Groundwater 4
11 alternative and the fact that maybe when people look
12 at the price tag, it's sticker shock. But if we're
13 looking at the cost of that plan over the time
14 frame, it seems to be -- that we wouldn't be
15 spending very much money to implement that plan,
16 especially when you look at the fact that we're
17 spending \$2 billion a year total on Hanford? Two
18 hundred million seems like nothing, especially if
19 you stretch it over, you know, the time frame.

20 Secondly, I think it's odd -- and this
21 goes back to the groundwater alternatives. I think
22 it's odd that there's such a huge cost difference
23 between Groundwater 2 alternative, which is
24 preferred, and then the Groundwater 3 and
25 Groundwater 4. It seems like there's no middle

1 ground cost taken into consideration, and that with
2 the Groundwater 4, even with that remedy, we're not
3 addressing strontium-90 or suggesting anything other
4 than natural attenuation for the alternatives.

5 I believe that's about it. Thank you.

6 **MR. BOHRMANN:** Thank you. Next up, Robbie
7 Lapp?

8 **MALE:** He -- she left.

9 **MR. BOHRMANN:** Jurgen Hess.

10 **MR. HESS:** Thank you. Jurgen Hess, Hood
11 River.

12 What should the standards be for cleaning
13 up this area? I think it should be left the way it
14 was prior to the initial development in the 1940s.
15 That should be the standard. Anything else is
16 something kind of contrived.

17 And particularly the 150 years. I mean,
18 to me, with all these brains, the scientists that
19 you have, if you can't remediate strontium-90 in
20 less than 90 years, you've got to go back -- or 150
21 years, you've got to go back to the drawing board.
22 You've got to figure it out.

23 Your predecessors figured out how to use
24 this material to make nuclear bombs. You've got to
25 figure that out.

1 The water should be completely cleaned up
2 for unrestricted use using active cleanup, not MNA,
3 monitored attention. I particularly agree with --
4 with the position of the Yakama Nation on
5 Alternative 4, with that exception; 150 years, I
6 think, is unconscionable.

7 Consider permeable barriers like the 100-N
8 area. It was done there; why not here?

9 And I have to agree with Dan Serres that when I
10 looked at the map, I said: Here's the real
11 festering problem and yet, this huge area is so
12 different. I think we need to separate these out
13 and do two different kinds of things dealing with
14 the two different -- the nature of that. You have a
15 specific problem in one area, and the rest of it is
16 so completely different.

17 Thank you.

18 **MR. BOHRMANN:** Thank you. Next, John Wood
19 was a might be commenting. John, do you have
20 anything?

21 **MR. WOOD:** Yeah, I've got a little
22 something here. And I mean this in the best of
23 faith. I know you guys are doing your job and
24 there's a lot of constraints and everything else,
25 but, realistically, we've got to fix this.

1 And so kind of to put things in
2 perspective, I'm not a scientist, but I am a
3 realist. And, you know, what I see is that all this
4 pollution began indoors in buildings on the Hanford
5 site and it's steadily been spreading far and wide
6 and it's covering an enormous area.

7 The DOE and DEQ have been raking this
8 material leaked and dispersed back towards a central
9 leaky pothole that's much harder than the building -
10 - that's much larger than the buildings of its
11 origins.

12 And the cost of the most expensive options
13 discussed here are really not that big. They're
14 less than a fifth of the cost of one of the big
15 bombers that we've been buying whole fleets of, and
16 there's almost no objection over the cost of those.

17 So we don't really have another enemy at
18 the moment who needs to be nuked. So what we can
19 do, perhaps, is to clean up Hanford by appealing to
20 those who have the purse strings and use some of our
21 defense budget. Because what we need, as citizens
22 of America, all of us, is we need defense against a
23 bunch of stuff that isn't just AK-47s and homemade
24 bombs. We need defense against stuff like this,
25 radiation and -- well, heck, microbes and disease

1 organisms, all kinds of stuff.

2 The defense budget we've got is unlimited
3 and it's only applied towards, basically, bullets.
4 This is what we need defense against, and the future
5 needs defense against it as well.

6 So we spend a whole lot more than, I
7 think, the most expensive alternative here just to
8 monitor domestic citizen emails every year to find
9 out if there's going to be a dirty bomb. Well,
10 there's your dirty bomb, right there. And the DOE
11 seems to be the bomber who's trying to ensure that
12 we all get a dose of contamination through its
13 failure to act. Okay?

14 We've got to get going. We're supposed to
15 be -- we tell ourselves that we're the greatest
16 nation in the world, but we're trying to do the
17 worst possible job cleaning up the mess that was
18 made in good faith long ago.

19 That's all I have to say.

20 **MR. BOHRMANN:** Thank you. Brian Brown.

21 **MR. BROWN:** Yes. I'd just like to go on
22 the record saying that I'm not in favor of the DOE's
23 preferred alternative. Monitor natural attenuation
24 seems like a do-nothing approach, and this really
25 seems to me like there's too much at stake to take

1 the easy way out.

2 I think that I would be more in favor,
3 personally, of the Alternative 4 in that it seems to
4 take a more proactive approach. And my guess is
5 that if I were to look at this situation in 150
6 years, it would likely be the least costly because
7 it seems to me like, over the course of these 150
8 years, the cost of these plumes moving and then
9 having to contain the entire site instead of
10 individual leakages, the plumes.

11 And it really is the government's
12 responsibility to bring the site back somewhat close
13 to what it was beforehand. And I think that what
14 the citizens would like to see is for the reach of
15 the Columbia River through the Hanford Reservation
16 to be available for unrestricted use along the
17 corridor.

18 Thank you.

19 **MR. BOHRMANN:** Thank you. Nathan Zorich.

20 **MR. ZORICH:** My name's Nathan Zorich and,
21 as you can tell by my hat, I'm a proud graduate of
22 Richland High School.

23 Growing up in Richland, I learned a lot
24 about the history of the Hanford Nuclear Reservation
25 and what went on there. And I think there's a lot

1 to be proud about for a while. I think a lot of
2 shortcuts were taken during and before the war to
3 really kind of speed up production. It's after
4 that, that things really fell apart. And that's the
5 legacy that we really need to deal with.

6 When the federal government came in and
7 took that land from Washington State and its
8 citizens, it had to be a gold mine. I think the
9 state was behind that. Through time, we continue to
10 take shortcuts and do a slipshod job of containing
11 their work. And now I think it's the government's
12 responsibility to clean that up.

13 They saved a lot of money by taking
14 shortcuts; now it's time to spend some money to make
15 that right with the citizens of Washington and
16 people of the northwest and people that live up and
17 down the Columbia corridor.

18 I currently have six nieces and nephews
19 that still live in Richland. Richland pulls its
20 drinking water from the Columbia River. They've
21 grown up there, they've lived there most of their
22 lives, and I worry about them. I want them to be
23 healthy. And I think cleaning up strontium in this
24 region's important for their health, for the health
25 of fish and wildlife in the region.

1 Thank you.

2 **MR. BOHRMANN:** Thank you. The last person
3 I have signed up for comment is Gerry Pollet.

4 **MR. POLLET:** Gerry Pollet, speaking for
5 Heart of America Northwest and our 16,000 members in
6 Washington and Oregon.

7 The Energy Department says over and over
8 again that it is going to be done with cleanup along
9 the Columbia River by 2016. Oh, dream on. What a
10 great idea that would be.

11 And to do it, the Energy Department would
12 need to actually spend a little bit of money instead
13 of saying we can save 150 million and leave
14 contamination in place for 150 years.

15 When did you change the definition of the
16 word "done"? That's what I'd like to know. "Done"
17 does not mean leaving it behind. It means when you
18 cleaned it up to allow for unrestricted use.

19 When we say "unrestricted use," we don't
20 mean you can walk on it a few days a year, but don't
21 dream of effectively using the area for its highest
22 and most likely uses in the future along the
23 Columbia River.

24 The Energy Department is not the boss of
25 the world, it turns out, oddly enough, and it will

1 not determine what the future land uses will be of
2 the Hanford Reach and the Columbia River corridor
3 when it is, quote/unquote, done with cleanup.

4 Part of this decision will be made by Fish
5 and Wildlife Service for the Hanford Reach National
6 Monument. It will be made by many other entities,
7 but it is not something that is decided in the
8 Department of Energy's land use plan document, which
9 EPA and the state of Washington sent to the Energy
10 department when it was issued. You may not use this
11 in cleanup decision-making. It only governs your
12 land use decisions while you are operating the site.

13 And I have to say, it is shameful that
14 Washington state and EPA appear to have lost your
15 institutional memories. You need to go back into
16 your own records and say: We told you, you can't
17 use this as a decision-making document. Because
18 that is clearly what the Energy Department's doing
19 today, and you are sitting here and saying: This
20 plan is great. The Energy Department says the land
21 use is going to be conservation, the occasional
22 visitor.

23 Well, putting aside history, let's turn to
24 what the law says. The federal Superfund law,
25 CERCLA, says that we have to clean up so that the

1 additional cancer risks for the most exposed
2 individuals who are likely to use the site under
3 foreseeable circumstances, will be one additional
4 cancer for one in 10,000 people who use it. Ten
5 thousand people use it? Maximum number of cancer is
6 one. But the starting point, EPA's rules say, is no
7 more than one additional cancer for every million
8 people who use the site.

9 And federal law says Washington State's
10 cleanup standards apply as well. And when they are
11 more stringent, they must be followed. Washington
12 State's cleanup law, called MTCA, Model Toxics
13 Control Act, says that the additional cancer risk
14 rate may not be more than one additional cancer for
15 every million people exposed to each individual
16 contaminant and one additional cancer for every
17 100,000 people who are likely to be exposed in the
18 future.

19 Now, remember that. Federal law says you
20 can go down to one in 10,000; Washington State's law
21 is 10 times more protective. Washington State's law
22 very clearly includes radionuclides as carcinogens
23 because, guess what? They are carcinogenic. It's a
24 shocker, I know.

25 But yet the Energy Department's documents say:

1 We are only applying the Superfund surplus standard
2 to radionuclides for cancer risk, even though
3 Washington State law clearly advised we're only
4 going to apply Washington state cancer risk
5 standards to the non-radiological risks.

6 Where did they get this? They decided
7 that's the way they would have liked the law to be,
8 not the way the law is. And Washington State, you
9 need to speak up about this because it is your law.

10 And despite what you heard earlier
11 tonight, the Department of Energy's conservation
12 plan -- conservation land use, in other words -- we
13 visit occasionally the national monument. Well, the
14 national monument only extends for a short way
15 inland. What about the other sites?

16 Energy Department says it's all going to
17 be conservation, but they have no idea how it will
18 be enforced, as we heard earlier, nor have they ever
19 taken into account, nor has EPA or Ecology commented
20 on the fact that you have no legal regime under
21 which we can prevent the use of groundwater in the
22 future when the Energy Department is no longer
23 running the site unless Washington state changes its
24 laws.

25 Now, some of us would love to see

1 Washington State change its law to say when you
2 drill a well, you need a permit. But that isn't the
3 case. But Washington State does have a law that
4 says you can't withdraw any more water out of the
5 Columbia River.

6 So, ironically, the Energy Department says
7 we're going to have people who are using this area,
8 visiting it, we may have some campgrounds, we may
9 have a ranger residing here for the Reach National
10 Monument; where will they get their water? Energy
11 Department says out of the Columbia River. Well,
12 illegal. Where will they get their water? Well,
13 they'll probably dig a well.

14 Now, there is something else when we talk
15 about unrestricted land use. Who are the people who
16 are most likely to be using this area of the
17 Columbia River intensely because they have a legal
18 right to do so?

19 Now, there's a picture up on the screen
20 right now of a person kayaking along the river.
21 That person made camp and they use groundwater for
22 drinking water out of a well. They will -- if they
23 use tap water, let's look at what their risks may
24 be.

25 But we know that the people who are most

1 likely to be exposed, what we call the reasonable
2 maximum exposure scenario, are Native American
3 Nations with treaty rights to not only fish at our
4 usual and accustomed stations, which include this
5 entire stretch of the river, but to live along it
6 and fish and gather plants and resources as part of
7 that.

8 So what is the cancer risk under that
9 scenario? As reviewed by the River Corridor Base
10 Line Risk Assessment -- oh, I guess 2011, we're
11 talking about a tribal cancer risk where,
12 essentially, one out of every 1,000 tribal members
13 exercising their treaty rights dies of cancer.

14 Cancer risks. Approximately for every one
15 person who dies in the general population, you have
16 three additional cancers. Native Americans, sadly,
17 have a much higher fatal cancer risk rate. It's
18 one, two or worse.

19 So you're going to have twice that number,
20 perhaps three times that number, with cancer.
21 Children are, of course, three to ten times more
22 susceptible to cancer from the same carcinogenic
23 exposure as an adult.

24 So how does this jibe? The law says,
25 under federal Superfund, only one in 10,000 people

1 can get cancer. State law, one in 100,000. And the
2 River Corridor Baseline Risk Assessment says that if
3 we allow Native Americans to have unrestricted use,
4 as guaranteed by treaty rights -- and Washington
5 State EPA, and U.S. DOE are all committed to
6 ensuring that those treaty rights are respected and
7 that they are allowed to return and use these lands
8 and river resources -- the cancer risk under the
9 scenario run by the agency's, you know, baseline
10 risk assessment is a one in 1,000 cancer risk level.

11 That's not only unacceptable and immoral,
12 if you say to people it's unrestricted, come on
13 back, it's not any different than handing tribes a
14 smallpox-infested blanket as we've done a century
15 ago, is it? Come on back; your cancer risk, we're
16 going to tell you in fine print, is much, much
17 higher than is acceptable for the general public.

18 Furthermore, there's been no analysis of how
19 this action complies with the Federal Civil Rights
20 Act and our environmental justice standards,
21 including Title VII, and puts at risk, for instance,
22 state agency funding because you have a very clear
23 disparate impact on the foreseeable population
24 exposed, the Native American tribes, when you have -
25 - would otherwise say, well, to the general, non-

1 minority public: You have a cancer risk that's
2 acceptable.

3 Washington State's cancer risk law needs
4 to be applied here and reversely so, and includes
5 both radionuclides and the non-rad, and they have to
6 be summed together and then we have to take actions
7 based on cleaning up to meet that level from
8 restricted use.

9 And that includes, where we know we have the
10 ability to do so, taking action on the strontium-90
11 as we are doing elsewhere along Hanford Reach.

12 Ironically, here the Energy Department says: Nah,
13 we're not interested in doing it. But at N area,
14 the 300 area, the Energy Department says: We have
15 technologies that we're going to try. We're going
16 to rely on them there.

17 We're concerned about relying on them
18 without them being proven, ironically; here they're
19 saying we're not going to try at all. That's wrong.
20 They need to be tried, and we cannot allow a claim
21 that we're going to prevent public use of the -- any
22 area of the Hanford Reach for 150 years or even an
23 additional 50 years.

24 Let's get the Hanford Reach cleaned up so
25 that it is safe for public and tribal use in the

1 next decade and a half, which is accomplishable for
2 the groundwater, and we can accomplish that for the
3 soil sites by cleaning up the deeper contamination,
4 going to 40 feet where necessary instead of 15 for
5 the soil sites, and cleaning up the groundwater and
6 using technologies to do so.

7 And then we can actually all say together how
8 proud we are that we cleaned up the Columbia River
9 and we're done, not saying that we changed the
10 definition of what we mean by when we say we're
11 done: You can use the site, we're done. Come on
12 in. Fine print: Your children will have an
13 unacceptably high cancer risk.

14 Thank you.

15 **MR. BOHRMANN:** Okay. So that concludes
16 the people that have -- on our list that have signed
17 up. So is there anybody else you would like to --
18 oh, Greg?

19 **MR. DEBRUIN:** Since nothing I said was
20 recorded, so I'll go back and start again. Thank
21 you.

22 My name is Greg Debruin, and these are my
23 formal comments.

24 Thank you, Gerry, very much for hitting
25 the nail on the head.

1 Admiral Watkins, when the Hanford group signed
2 in 1989, said to the tribes, said to the state of
3 Washington and the state of Oregon: We're going to
4 clean up Hanford, return the land back to the way it
5 was. Okay? It was a simple statement. It was a
6 commitment. John Wagner, a good friend of mine,
7 came back and said: We have a problem here.

8 We've got a big problem. We've got an
9 agency that doesn't want to talk about risk, that
10 doesn't want to talk about how contaminated the site
11 is, who at Congress wants to cut our funding off,
12 and somehow we have to justify the work we're doing.

13 So we have an agency that wanted to hide
14 everything for a long, long time. And the sad part
15 is, 25 years later, we're playing games. The risks
16 are real. The commitments are real.

17 Think of just one group, the Native Americans.
18 It's their land. Their usual and custom places.
19 They get to come back here and fish, live, and live
20 happily. But then think of the white folks just
21 downstream and then all the other people of color
22 that live off the Columbia River. The Tri-Cities.
23 Your home. And you say: Oh, it's going to be fine.
24 No, it's not fine.

25 You don't check the duckweed every 14 days

1 for the contaminants that are flowing downriver.
2 You haven't done that in forever. Never have, never
3 will. If you'd do it on a bridge because they can
4 tell you the daily flux and load of all the
5 contaminants coming in.

6 So what we have here is we have a commitment.
7 When Keith Klein came in from Rocky Flats, we had a
8 vision. His vision was that by 2011 -- or '10, I
9 think it was, we're going to release the sites along
10 the Columbia River. This is the goal. Then it
11 changed to 2015. So I'm really shocked that the
12 state of Washington is sitting here saying, and EPA
13 is sitting here saying: Oh, yeah, we're fine with
14 this.

15 Well, great. Okay. So DOE's taking our
16 land. They aren't giving it back to us. They're
17 saying you can have it in 150 years. Maybe. But if
18 you're on there and you're exposed, the risk is too
19 high. But we don't want to look at that part of the
20 law. We only want to look at the part of law that
21 we're applying, but it doesn't apply to the other
22 people that could be using it.

23 The state of Washington says, well, wait.
24 Our land's being taken. Oh, but the state of
25 Washington shouldn't be saying another thing. Oh,

1 but you're taking our groundwater. Wait, you can't
2 take our groundwater. You can't take it over the
3 200 area, you can't take it anywhere. You can't
4 take that resource from it. If you do, there's huge
5 damages to pay.

6 But yet you're taking it from us. But yet
7 Ecology's sitting here saying we're perfectly fine
8 with the situation. And EPA's saying it. I'm
9 saying: Excuse me? You're taking our water. And
10 yet we can't use the Columbia River anymore because
11 we can't draw out of there anymore. And yet, this
12 is a good decision. Hmm. Interesting.

13 The other thing we're saying in this
14 document is the money; 194 million is too much
15 money. There's really no justification for \$194
16 million. You can probably take 30 million off the
17 top and still get it done. It's just the way the
18 game works.

19 But we're sitting here trying to tell the
20 public that this is the best that we can do. We
21 don't talk about strontium-90 and the fact that pump
22 and treat worked for how many years in the N area.
23 Did a great job until finally there was a push back,
24 says: Oh, we aren't getting the best bang for the
25 buck. Let's turn it off, even though it was still

1 capturing strontium-90. Then we used kitty litter.
2 Sure. But here? Oh, we got strontium-90, don't
3 worry about it. We got nitrate. Nah, don't worry
4 about it. We've got these contaminants sitting
5 right at the edge of the river; don't worry about
6 it.

7 So how is it that you can actually say
8 this when there's so many points that have been
9 brought up tonight that there's gaps, there's
10 assumptions, there's false promises, there's
11 violations of treaty rights, there's violation of
12 state law.

13 And yet will Congress come up here and sit
14 down and say -- and I understand this is -- believe
15 me, 25 years of my life looking at how the federal
16 agency runs, and it's -- you guys are driven to do a
17 job. You're being paid to do your analysis, to get
18 a decision on paper, to move forward because your
19 boss is upstairs that wants the decision.

20 But the problem is, it's not integrated.
21 The problem is we aren't really creating solutions
22 that is a win-win for everybody. We talk about
23 money, but yet Hanford takes \$2 billion out of the
24 federal coffers, more than EM has, over half of what
25 EM has, and yet we're producing this as a result?

1 You know, for me, it's kind of an insult
2 to the management because we aren't creating
3 solutions that are getting the deliverables that are
4 required under law and under treaty rights and none
5 of our expectations of future generations and to the
6 people that live here in the future. We
7 can do that. But the system you work in right now
8 doesn't want that. They want to play this malleable
9 game where we create a solution over here and hope
10 we can slide it off so we can clean it up and maybe
11 call it clean and then move on.

12 So you came to this meeting tonight and now you
13 realize it doesn't work. You know. Unfortunately,
14 you have to go back to somebody that's upstairs and
15 say to somebody: You know, we've got some issues
16 here we need to resolve.

17 And to keep it really focused, really focused,
18 you can't take our groundwater. Period. You can't
19 do it. The state of Washington should be just
20 absolutely livid, saying: Excuse me? You're taking
21 our groundwater? Hey, (whistles). No. We'll see
22 you in court.

23 But I know why, 25 years of fighting this
24 battle, it's the Tri-Party Agreement. No, it's not.
25 It's three agencies who are best friends sitting

1 around trying to figure out the easiest way to move
2 down this thing while we still all get paid, we
3 eventually retire, and then we're done and somebody
4 else can pick up this ball and try to move it
5 forward.

6 No. No. I'm sorry. It's time to get the job
7 done. It's time to come in and put together a plan
8 that is real, meaningful, and meets the requirements
9 of the people that are sitting here and the people
10 that aren't sitting here. We have the technologies.
11 We have the money. We don't have the agencies
12 that's willing to go ahead and say: Oh, we've got to
13 go to -- you know, Dan, it might cost us \$220
14 million because we've got to do a little extra work
15 because of all these things we've pointed out. So
16 big deal. We do it. But then in five years, or
17 seven years, or eight years, whatever the number is,
18 it's done. It's clean. Everybody goes, yep, we did
19 that one.

20 But for some reason, there's some bean
21 counter somewhere -- and I've never found one.
22 Believe me, I've been to headquarters and all over
23 looking for the magical bean counter when it's full.

24 There is no magic number. When we first
25 started that cleanup, it was like \$700 million, and

1 Tom Grogan said it was a train wreck of money. And
2 I looked at him and said, baloney. Here we are at
3 1.2 billion at that time. I said: You get over \$2
4 billion a year. They did. And they stayed at \$2
5 billion a year forever.

6 The problem is the machine isn't doing the
7 work, isn't efficient. And it's not creating
8 solutions. It's creating excuses to create more
9 jobs to continue the process.

10 So I say: No, shut this thing down. Go back
11 to the drawing boards. Come up with solutions that
12 give the people the deliverables that meet the
13 requirements under law. And if you can't do it,
14 then find a different job and find somebody else
15 that'll come in and do it for you. Because you
16 didn't do it. It didn't pass.

17 Thank you. And thank you for your work
18 and I'm sorry that you're trapped on this morph, but
19 that's the way it is. Good night.

20 **MR. BOHRMANN:** Thank you. We're just
21 getting close to 8:30 here, but is there anyone else
22 who would like to provide a comment or elaborate on
23 their earlier comments?

24 **MALE:** Is there anyone who wants this
25 plume to get worse? Come on. Sorry. Already in

1 evidence.

2 **FEMALE:** Is there -- how is the webinar
3 working in terms of people commenting?

4 **MR. BOHRMANN:** People in the webinar
5 weren't able to provide formal comment through an
6 audio system, so they'll be able to write a comment
7 through a written or email until August 11th.

8 **MR. POLLET:** You know, I -- I have to tell
9 you that was not said in the -- so we encouraged
10 people who couldn't be here tonight, that they would
11 fully participate, and that makes this a real
12 problem in terms of failing because but we did not
13 have them fully participate in the comments.

14 **MR. BOHRMANN:** So that's, you know,
15 something we'll consider and take back and see if
16 there's, you know, a way we can improve that
17 process.

18 How many people do we have on the webinar?

19 **MALE:** Right about ten. And we asked for
20 comments, questions throughout all the comment
21 period and question period and didn't get them.

22 **MR. BOHRMANN:** Well, I want to thank
23 everybody for coming out tonight, taking some time
24 out of your evening to come talk to us.

25 Again, this comment period's open until

1 August 11th, so please, in addition to your comments
2 this evening, you have an opportunity over the next
3 few weeks to email or to mail the agencies, any
4 further thoughts you have on this decision.

5 So, thank you very much, and have a good
6 night.

7 **(Whereupon, the Public Hearing was**
8 **concluded.)**

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1 CERTIFICATE

2
3 I, Donald Polen, Notary Public, certify that
4 the foregoing was reported by stenographic and/or
5 means, that same was reduced to written form; that the
6 transcript prepared by me, or under my direction, is a
7 and accurate record of same to the best of my knowledge
8 ability; that there is no relation nor employment by any
9 attorney or counsel employed by the parties hereto, nor
10 financial or otherwise interest in the action filed or
11 outcome.

12
13 IN WITNESS HEREOF, I have hereunto set my hand
14 this 11th day of August, 2014.

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22 /s/ Donald Polen
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