

## Part 3: Responsiveness Summary

### STAKEHOLDER COMMENTS AND DEPARTMENT OF ENERGY RESPONSES

The public comment period for the WAG 5 Proposed Plan (DOE-ID 1999b) began May 10 and ended June 9 for the receipt of written and oral comments. Public meetings on the WAG 5 Proposed Plan were conducted in Idaho Falls on May 17, Boise on May 18, and Lewiston on May 19, 1999. Oral comments were submitted by those attending the meetings. The written comments and the meeting transcripts are available in three INEEL information repositories in the Administrative Record for the WAG 5 Comprehensive RI/FS. The information repositories are located in the INEEL Technical Library in Idaho Falls, the Albertson Library on the campus of Boise State University, and the University of Idaho Library in Moscow.

Typically, comments received from stakeholders pertaining to a proposed plan are compiled and comments that are similar in meaning are summarized and consolidated. However, because only 25 comments were submitted, each comment is presented below in its entirety. The oral comments are reproduced with minimal editing for clarity. The written comments, with the exception of corrected spelling and punctuation and extremely rare instances of editing for clarity, are presented verbatim. In addition, letters within brackets have been added to some comments to indicate multiple parts. A complete response to each comment is provided. An index to the comments on the WAG 5 Proposed Plan is provided in Table 37 below.

**Table 37.** Oral and written comments on the WAG 5 Proposed Plan.

Name	Affiliation	Comment No.
<b>Oral</b>		
Beatrice Brailsford	Snake River Alliance Idaho Falls, Idaho	1, 2, and 3
Beverly Carlyle	Concerned citizen Idaho Falls, Idaho	4
Ted Carpenter	Shoshone-Bannock Tribes Fort Hall, Idaho	5
Pam Allister	Snake River Alliance Boise, Idaho	6
Chuck Broschious	Environmental Defense Institute Troy, Idaho	7, 8, 9, and 10
<b>Written</b>		
Chuck Broschious	Environmental Defense Institute Troy, Idaho	11, 12, and 13
Chuck Rice	Citizens Advisory Board Idaho Falls, Idaho	14, 15, 16, 17, and 18
Steve Hopkins	Snake River Alliance Boise, Idaho	19, 20, 21, 22, 23, 24, and 25

## Oral Comments Presented at the Public Meetings and DOE Responses

### Idaho Falls Public Meeting

**Comment 1** [a] The Snake River Alliance's fundamental concern remains, how does this fit together with the other cleanup actions? The notion that some caps won't last as long as other caps is something that we need to keep examining. [b] I would like to note that this might be the first cleanup plan where we've seen the INEEL say that it's cheaper to clean it up than continue to monitor it until the end of time. That's probably a real good stride forward.

**Response:** [a] Cleanup actions from the other WAGs were used where possible to develop cost estimates, basic assumptions, implementability, current worker exposures, different contaminant transport properties, and so forth. Each site has different contaminants with different design requirements, so a one-size-fits-all solution is not possible. Before the actual design development, the design requirements specific to the problem are identified. For instance, in some cases with short-lived radionuclides, a native soil cover may be the preferred alternative. A site requiring a 400-year design life such as SL-1 required a layered gravel and rock cap to be effective against erosion and intrusion. [b] For the site in question, PBF-16, site characterization is the cost issue, not monitoring. Monitoring may be a reasonable alternative for other sites even if long-term costs are high. Site-specific characteristics and applicable alternatives must be considered, and cost is only one of several criteria used to develop the comparative analysis of alternatives. For this particular site, it is more cost-effective to remediate to protect ecological receptors than it is to conduct additional studies or characterization.

**Comment 2** In this plan, we have to remove the tanks so that we can clean up the soil. And in WAG 3, I asked specifically, don't you have to remove the tanks to clean up the soil? And the answer was no.

**Response:** Commenting on tanks in WAG 3 is outside the scope of this project, except to note that the situations in the two WAGs differ significantly. Waste Area Group 5 has one small buried tank at a shallow depth with a very small amount of soil contaminated with one constituent, and a small volume of mixed waste in the tank. Waste Area Group 3 must address several large tanks at greater depths with multiple contaminants in the soil and comparatively large waste volumes in the tanks. An interim action (DOE-ID 1999a) has been selected to seal the surface to reduce infiltration while further analysis of alternatives for the tanks is conducted. It is not surprising that different remedies would be appropriate. For WAG 5, removing the tank to remediate the soil is the most efficient and effective approach.

**Comment 3** There's got to be a fair amount of public involvement when we're developing the waste acceptance criteria for the soil dump. People are edgy about that to begin with and they are not going to get more relaxed if they don't know how we're going to decide what to put in it.

**Response:** The comment is noted and was forwarded to the WAG 3 project team.

**Comment 4** We always go 100 years down the road. It would be real nice to know what is going on today because INEEL will take care of this and that, and everything will be great in 100 years. Today is the day. Are you going to be here in 100 years?

**Response:** For the purposes of risk assessment and cost development, it is assumed that the INEEL will be under the active stewardship of the Department of Energy or another federal agency to ensure that risks are controlled for the next 100 years. The INEEL Land Use Plan (DOE-ID 1996a)

indicates that a minimum of 100 years of institutional controls for the INEEL will be enforced. The DOE Radioactive Waste Management Manual also specifies 100 years of institutional controls (DOE M 435.1-1). Because management controls limit the potential effects of contaminants on workers and residential land use is precluded by institutional controls, the baseline risk assessment evaluates a residential scenario 100 years in the future.

**Comment 5** [a] To the Shoshone-Bannocks, the animals and plants out there, the native species, are part of the tribal heritage. As you know, I really don't see that need for that 48—58 acres to have all of the native ecosystem be removed. [b] Also, of course, I want to remind you that you're really not disposing of anything. You're storing it. [c] And I do hope that if the land ever reverts from DOE possession, that it is returned to the Shoshone-Bannock Tribes to be preserved as an ecological preserve, an environmental preserve.

**Response:** [a] The large surface soil area cited in the comment, Site ARA-23, is contaminated with Cs-137. Unfortunately, removing the vegetation and scraping the soil is the only way to remove the contamination. Phytoremediation, a technology that uses plants to collect radioactive contamination, is not a viable option for ARA-23 because of the particulate nature of the contamination. The no action alternative consisting of leaving the contaminated soil in place does not meet the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC 9601 et seq.) threshold criteria for protection of human health and the environment and compliance with regulations. All other possible alternatives for remediating ARA-23, including capping, require removing the plants and soil. However, the site will be restored following remediation by vegetating the excavated areas with a mixture of plant species. [b] Radioactivity cannot be destroyed. Natural radioactive decay over time is the only mechanism for reducing radiotoxicity. Therefore, storing the contaminated media in a managed disposal facility was selected to protect human health and the environment. [c] Land-use projections (DOE-ID 1996a) indicate that industrial land use will continue far into the future at the INEEL. However, as evidenced by the recent establishment of the 74,000-acre INEEL Sagebrush Steppe Ecosystem Reserve, DOE can transfer portions of the Site to other entities. Anticipating that it will maintain its cooperative relationship with the Shoshone-Bannock Tribes, DOE will continue to consult with tribal representatives about cultural resources and land use.

### **Boise Public Meeting**

**Comment 6** The Snake River Alliance requests full participation in the developing of the waste acceptance criteria for the soil repository, any soil repository in Idaho.

**Response:** The comment is noted and was forwarded to the WAG 3 project team.

### **Lewiston Public Meeting**

**Comment 7** The comments that I have on this proposed plan revolve around questions of what the waste category for the radioactive waste tank actually is. There seem to be some different data sets—one data set says it's a mixed transuranic waste, the other data set says that it's not.

**Response:** The data sets are in disagreement. According to the 1997 analytical results (see Table 27 of this ROD), which are the most accurate representation of the tank contents, the tank contents are not classifiable as transuranic (TRU) waste. Significant questions were raised concerning the data quality for the analysis of the samples collected in 1994 (DOE-ID 1997). Though analytical results indicated TRU waste, the 1994 data were never validated. Because of the uncertainties associated with these data, the waste characteristics were identified as a data gap in the WAG 5 RI/FS Work Plan (DOE-ID 1997), and samples of the tank waste were collected and analyzed for all possible contaminants.

However, regardless of the ultimate classification of the waste as TRU or not TRU, the waste will be collected from the tank, treated, and characterized to satisfy the disposal facility waste acceptance criteria.

**Comment 8** I submitted for the record copies of the Final Work Plan for Waste Area Group 5, Operable Unit 5-12, Comprehensive Remedial Investigation/Feasibility Study [showing] that the concentration levels easily make the criteria of a hundred nanocuries per gram of transuranic waste. So as far as this document is concerned, it should be listed as transuranic waste. If that is the case, then the alternatives for the particular waste site, this is ARA-16, a number of the alternatives listed as utilizing in situ vitrification would not be legal, because there is no place on the INEEL site that would qualify as a transuranic—permanent transuranic waste disposal facility. Matter of fact, there is only one in the country and that's in New Mexico. I have gained commitments from various officials here that they will send copies of other sampling data that they claim say that it's mixed low-level waste. So I'm anxiously awaiting that.

**Response:** Different analytical data indicate different classification (see response to Comment 7). The contents of the ARA-16 tank may or may not be classifiable as TRU, depending on the data set that is used. Regardless, disposal of TRU at the INEEL is not precluded by statute. The requirements are embedded in DOE Order 435.1, "Radioactive Waste Management," (DOE O 435.1) and are to be considered, but are not what are termed applicable or relevant and appropriate requirements (ARARs); therefore, DOE has the discretion to approve treatment that would leave the tank waste in place. In situ vitrification has the potential to satisfy legal requirements, though an ARAR waiver based on demonstration that the treatment is effective could be required to meet the substantive requirements of the Resource Conservation and Recovery Act (RCRA) (42 USC 6901 et seq.). Therefore, in situ vitrification was a viable alternative for the ARA-16 tank.

**Comment 9** There was a lot of discussion earlier in the meeting unofficially about where the preliminary remedial goals that are listed in the plan come from. There is some acknowledgment here on page 12 that they are EPA-approved screening levels. But as far as I could tell, in downloading the EPA preliminary remediation goals, they don't match. There doesn't seem to be any documentation on how those preliminary remediation goals are derived and what basis they're arrived at. I think if you're going to use those numbers, then you have to indicate where they came from and what justification there is for them.

**Response:** The EPA screening level on page 12 of the Proposed Plan is relevant only to lead. The preliminary remediation goals for other contaminants are based on risk or background concentrations. Tables 16, 22, and 28 in the Decision Summary (Part 2 of this ROD) show the basis for the remediation goals established for WAG 5 cleanup activities.

**Comment 10** There is a lot of reliance on the eventual construction of the ICDF—INEEL CERCLA Disposal Facility. The siting of that particular disposal facility needs to be a very public process where the public can have an opportunity to be involved with that decision-making process. It should not be done in any other closed door manner where our concerns about the flood zone areas—as far as we're concerned—should be excluded, or exclusionary parts of the site where new disposal facilities will not be allowed to be constructed.

**Response:** The comment is noted and was forwarded to the WAG 3 project team.

## Written Comments and DOE Responses

**Comment 11** At first glance the proposed Power Burst Facility/Auxiliary Reactor Area (PBF/ARA) cleanup plan appears to offer the type of information needed by the public in order to make an informed decision on whether the plan's preferred alternatives are the appropriate actions to take. Tables showing maximum concentration levels of the contaminants and "preliminary remediation goals" can offer just this kind of essential information. Unfortunately, the preliminary remediation goals listed in the plan bear no resemblance to the published Environmental Protection Agency's reference guide of risk values and preliminary remediation goals for radionuclide's concentration in soil that generates a one in a million (1E-6) lifetime cancer risk. The preliminary remediation goals that DOE is using are a thousand times higher than the EPA's preliminary remediation goals, yet the plan states that "the lead preliminary remediation goal is the EPA approved screening level" (page 12). If DOE has developed its own preliminary remediation goals independent of EPA or other regulatory agencies, then this fact must be noted and an explanation of how these preliminary remediation goals are derived and what specific assumptions were employed in the development.

**Response:** All remedial actions at CERCLA sites must be protective of human health and the environment and comply with ARARs. The EPA screening levels for carcinogens are typically set at a risk of 1E-07, but EPA supports use of a 10<sup>-4</sup> order of magnitude risk in making risk management decisions for the INEEL. Remediation goals based on risk of 1E-04 would be approximately 1,000 times higher than the screening levels. However, site-specific remediation levels based on risk assessment vary depending on site-specific conditions. Site-specific risk assessment can be used to establish cleanup levels for response actions under CERCLA. For WAG 5, the preliminary remediation goals presented in the feasibility study and Proposed Plan were developed using risk-based or background concentrations, except for lead. Risk could not be estimated for lead because the necessary toxicity data were not available. Therefore, a risk-based remediation goal could not be developed. The 400 mg/kg lead remediation goal given on page 12 of the Proposed Plan was taken from EPA guidance (EPA 1994). Tables 16, 22, and 28 in the Decision Summary (Part 2 of this ROD) present the derivation of the remediation goals.

**Comment 12** [a] The PBF/ARA Proposed Plan offers maximum contaminant levels on some less contaminated sites yet on the more serious contaminated sites the DOE refuses to offer maximum contaminant levels. For instance, for the 1,000 gal. hot waste tank at the Auxiliary Reactor Area I Operable Unit ARA-16, DOE fails to list the maximum contaminant levels. The table lists only contaminants of concern without concentration levels. DOE also fails to acknowledge that the waste is mixed transuranic (MTRU) in an apparent attempt to sidestep regulatory requirements for this class of radioactive waste. [b] DOE's own 1997 Track II Remedial Investigation Feasibility Study (RI/FS) acknowledged this waste is "F-listed transuranic (TRU) waste." The legal criterion for transuranic waste is it must contain greater than 100 nanocuries per gram of transuranic radionuclides. This RI/FS lists the following TRU contaminant levels in (ARA-16):

Americium-241	0.45 microcuries/gram = (450 nanocuries/gram)
Plutonium-238	0.33 microcuries/gram = (330 nanocuries/gram)
Plutonium-239	0.29 microcuries/gram (290 nanocuries/gram)
1,1,1-Trichloroethane	10,300 µg/L
Trichloroethene	4,800 µg/L (DOE/ID-10555, pages A-8 & D-17]

At a hearing on May 19, DOE officials noted that another sample of the ARA-16 hot tank contents indicated that the waste was "mixed low-level." When there are only two data sets, DOE cannot arbitrarily choose one over the other without some credible justification that so far is absent. In other words, if DOE had a dozen samples of the tank waste, and eleven indicated mixed low-level and one

indicated mixed TRU, then one may conclude that the preponderance of evidence points to mixed low-level. Another discrepancy between the plan and the RI/FS is the volume of tank contents, which according to the RI/FS the contents are greater than three times the volume noted in the plan.

[c] The plan considers the ARA-16 tank itself as low-level waste without offering any sampling data to substantiate this waste classification. Since the tank held mixed transuranic waste for nearly fifty years, the only reasonable assumption is to consider the tank itself as MTRU until sampling data demonstrate otherwise. Therefore, the plan's preferred alternative to bury the tank onsite would not meet regulatory requirements because DOE has no EPA-permitted disposal sites at INEEL for MTRU.

[d] The Proposed Plan offered an ARA-16 hot tank contents remedial Alternative-3 (in-situ vitrification) of onsite disposal of the tank and its contents, which again would be in violation of the statutes because the agency cannot legally dispose of TRU on the INEEL Site. Although Alternative 3 is not the preferred alternative, DOE has an obligation to offer cleanup alternatives that meet regulatory requirements, which is clearly not occurring. Misinformation of this type undermines the credibility of the process and reduces the public's confidence in the state and federal regulatory agencies.

**Response:** [a] The Proposed Plan (DOE-ID 1999b) lists concentrations only for contaminants of concern. Because a release has not occurred from the tank, the contents are not identified as contaminants of concern. The list of constituents detected in the waste given in Table 13 of the Proposed Plan was included to support a decision to remediate the tank contents, the only principle threat waste in WAG 5, even though a release has not occurred. The soil at the ARA-16 site is not contaminated at the levels detected in the tank waste. Analytical results for samples collected from the tank waste in 1997 are provided in Table 27 of the Decision Summary (Part 2 of this ROD).

[b] It is assumed that the comment that cites a Track 2 RI/FS actually refers to the WAG 5 Work Plan (DOE-ID 1997) that was developed to guide the sampling, analysis, and development of the RI/FS for the WAG 5 comprehensive investigation. The concentrations of the radionuclides and chemicals cited in the comment are found in Appendix D, the Field Sampling Plan, of the Work Plan. The concentrations reported in the Work Plan were not confirmed by the samples collected in 1997 (see Table 27 of the Decision Summary). Differences between the 1994 and the 1997 sample concentrations were probably caused by the amount of sludge available for sampling and the total volume of the waste. The highest concentrations would be present in the sludge phase, with lesser concentrations in the liquid phase of the tank contents. During both the 1994 and the 1997 sampling, the liquid level could be measured with conventional methods (i.e., by inserting a stick), but the thickness of the sludge could be estimated only. Sludge samples were successfully collected in 1994. However, during the 1997 sampling, all of the planned sludge samples could not be collected, even by scraping the bottom of the tank, because sufficient volume was not available. Another factor could be the locations in the tank from which the samples were taken. The sludge is probably not homogeneous. Either the waste will be treated to satisfy classification requirements as TRU for disposal at the Waste Isolation Pilot Plant or non-TRU for disposal at a mixed waste disposal facility (e.g., the INEEL CERCLA Disposal Facility [ICDF]). The development of the alternative anticipates that the residual will be disposed of as TRU waste. The selected alternative specifies treatment at the Advanced Mixed Waste Treatment Facility or the ATG, Inc. Richland facility (ATG) in Richland, Washington. All treatment residuals from the AMWTF will be disposed of at the Waste Isolation Pilot Plant. Treatment residuals from ATG, Inc. can be either TRU, which would be sent to the Waste Isolation Pilot Plant, or non TRU. The classification of the residuals as TRU or non TRU is dependent on the process controls applied during treatment. Additional analysis of the waste will be conducted when the site is remediated to provide the waste characterization data and certification required by most disposal facilities. The results of this additional sampling will resolve any doubt about the appropriate classification for the waste.

Evidence indicates that the volume of waste in the tank has fluctuated, probably because of a manhole seal that leaked. The seal was repaired in 1997. Recent measurements indicate that the tank contains a very small amount of sludge, approximately 4.5 gal, and about 312 gal of liquid waste (Coveleskie 1999).

[c] The preferred alternative presented in the Proposed Plan (DOE-ID 1999b) was excavation not onsite burial of the tank. The tank is constructed of stainless steel. Successful decontamination of stainless steel has been achieved many times. However, if the stainless steel tank cannot be sufficiently decontaminated to comply with waste acceptance criteria for burial, disposal will be implemented in accordance with the requirements appropriate for its waste classification.

[d] Disposal of TRU waste at the INEEL is not precluded by statute. The requirements are contained in DOE Order 435.1 and are to be considered but are not ARARs. The U.S. Department of Energy has the discretion to approve treatment that would leave this waste in place. In situ vitrification has the potential to satisfy legal requirements, though an ARAR waiver based on demonstration that the treatment is effective could be required to meet the substantive requirements of RCRA. Therefore, in situ vitrification is a viable alternative for the ARA-16 tank.

**Comment 13** The proposed plan offers the public access to INEEL Administrative Record through DOE's Internet website. Having personally attempted numerous times to utilize this site, I can categorically say it is ventrally unusable, presumably, because the documents are scanned in as a graphic rather than in text mode. Unless a person has a super fast computer and modem, it would take years to browse through a single RI/FS.

**Response:** This comment has been conveyed to the manager of the Administrative Record. Hard copies of Administrative Record documents can be requested from the Community Relations Plan Office at (208) 526-4700.

**Comment 14** We were pleased to see that the document was visibly improved from a prior version, which was reviewed by the INEEL CAB's Environmental Restoration Committee. The comments submitted by that Committee were obviously taken to heart and incorporated to a great extent. In addition, it is evident that the document preparers were largely successful in their attempts to prepare a document that will support public review. It is well organized and formatted, easing review and enhancing comprehension. The rationale for selection of the preferred alternatives is well presented. We conclude that the preferred alternatives are indeed appropriate. We await the issuance of the Record of Decision.

**Response:** Thank you. Many of the improvements were a result of comments from the INEEL CAB's Environmental Restoration Committee and input from a citizens' focus group generated during reviews of two earlier proposed plans for other waste area groups.

**Comment 15** The INEEL CAB recommends that the three agencies proceed expeditiously so that cleanup activities at WAG 5 can begin shortly.

**Response:** As required by CERCLA, remedial action must begin no later than 15 months following the signing of this Record of Decision.

**Comment 16** Review of the Proposed Plan generated questions about the likely schedules that would apply under each of the remedial alternatives. While such information is not typically presented in Proposed Plans, we think that the public may be interested in learning about expected implementation schedules for each remedial alternative to support informed comparisons among alternatives. We

acknowledge that detailed schedules may only become available as a result of negotiations with the regulators that culminate with the issuance of a Record of Decision. **The INEEL CAB recommends that DOE include a detailed implementation schedule in the Record of Decision for WAG 5. In addition, we recommend that DOE include rough implementation schedules for each remedial alternative in future Proposed Plans.**

**Response:** As mentioned in the comment, remedial design/remedial action schedules depend on the date of issuance of a record of decision. Therefore, detailed implementation schedules cannot be developed and included in records of decision. Though proposed plans can present estimates of the duration of actions, even rough implementation schedules cannot be included. The Federal Facility Agreement and Consent Order (FFA/CO) (DOE-ID 1991) requires that a scope of work for remedial design/remedial action activities be delivered to the agencies 21 days after a record of decision is signed. The scope of work will provide the schedule for developing the remedial design and remedial action work plans. Implementation schedules will be included in these work plans. The FFA/CO also requires the commencement of substantial continuous physical remedial action onsite within 15 months of the issuance of a record of decision.

**Comment 17** Use of the term “Future Residential Scenario Cancer Risk” in Tables 3, 5, 6, 10, and 12 creates confusion for the reader. Explanations to the committee and subsequently to the Board by knowledgeable staff allowed an understanding of what was meant by the term. **The INEEL CAB recommends changing the term or adding appropriate explanations in future Proposed Plans and in the Record of Decision for WAG 5.**

**Response:** The term “Future Residential Scenario Cancer Risk” refers to the additional risk of developing cancer above the baseline risk of developing cancer over a 70-year life span as a result of a 30-year exposure of a contaminant left at a site. This risk would be to a human who became a resident at that site at the end of the simulated 100-year institutional control period. Sidebars were included to define many terms in the WAG 5 Proposed Plan to enhance the readers’ understanding. “Future Residential Scenario Cancer Risk” was discussed in several locations, including in an “Info” sidebar, but not presented as a definition. The Community Relations Program has been made aware of this comment so that future proposed plans will provide a clearer definition.

**Comment 18** The explanation of the numbering of the alternatives evaluated for the contaminated soil sites (page 14) was inadequate. It did not allow the reader to develop a full understanding of why only Alternatives 1, 3b, 5a and 5b are presented. We recognize the need for consistency between a proposed plan and the related remedial investigation/feasibility study documentation. We nonetheless suggest that this Proposed Plan could have provided a better numbering mechanism that would generate less confusion for the reader. **The INEEL CAB recommends that future Proposed Plans use clearer numbering schemes.**

**Response:** The CERCLA guidance outlines the recommended format for developing Superfund remedial investigation/feasibility studies, proposed plans, and other documents (EPA 1999, 1988). The need for continuity with the feasibility study is one reason for preserving the numbering scheme. However, the numbering in the feasibility study was used because variations of the same alternative, such as Alternatives 3a and 3b for the contaminated soil sites, cannot be assigned individual numbers and analyzed in the feasibility study or proposed plan as independent alternatives. The WAG 5 Proposed Plan is a communication tool, and it is our desire to communicate clearly and concisely. Only the alternatives that satisfy the threshold criteria are presented in the Proposed Plan, other than the “No Action” alternative, which always is included for baseline comparison purposes. The Community Relations Program has been made aware of this comment so that future proposed plans will provide a clearer explanation of the numbering.

**Comment 19** Page 8. In the contaminated soil sites summary it would be more helpful to have the contaminants of concern ordered by concern rather than in alphabetical order.

**Response:** There are several reasons why lists of contaminants are presented alphabetically:

Consistency in presentation is desirable. Though lists of contaminants in order of descending risk would be readable for WAG 5 because there are few contaminants of concern, other WAGs, such as WAG 3 (the Idaho Nuclear Technology and Engineering Center) and WAG 7 (the Radioactive Waste Management Complex), have much lengthier lists. These lists would be more difficult to use and extremely awkward to maintain during document development if contaminants were ordered by risk.

More than one risk number is associated with each contaminant, and the order may vary depending on which risk number the contaminant is being sorted on. Consider the following: there are three risk scenarios (current and future occupational, and future residential), numerous exposure pathways (e.g., external exposure and inhalation of dust), and three different risk indicators (i.e., carcinogenic risk and noncarcinogenic hazard indices for human health, and hazard quotients for ecological receptors).

Quantified risk estimates typically have a level of uncertainty that may or may not have been quantified. For risk estimates that are similar in magnitude, ranking contaminants of concern could be problematic.

In most (perhaps all) of the supporting information for the Proposed Plan, including Track 1 and Track 2 documents, analytical results, risk assessment tables in the RI/FS, and other references, contaminants are presented in alphabetic sequence.

**Comment 20** Page 11. Regarding the description of the ARA-23 site you refer to past sampling showing contamination limited to the top 4 inches of soil. Several of these sampling efforts and instances of "particle picking" were discussed in the SL-1 and BORAX burial grounds ROD (January 1996). These efforts revealed contamination below 3 inches with some particles that were not "picked" emitting radiation up to 250 mR/hour. Are we now to believe that the remaining contamination is isolated between the top 3 and 4 inches of soil?

**Response:** Two different risk estimates were developed for the future residential scenario for the ARA-23 site. First, analytical results from soil samples were used to develop risk estimates using standard risk assessment techniques. The contaminated soil was assumed to be 2 ft thick. Data from the surface survey were used to develop the second estimate. Both estimates justify remedial action. Section 3.1.23 of the WAG 5 Comprehensive Remedial Investigation/Feasibility Study report (Holdren et al. 1999) provides a summary of the ARA-23 data. Though evidence indicates that most of the contamination is limited to the top 1 in., the issue is not significant to the design of the remedial action. The site consists of undulating terrain characterized by basalt outcrops and isolated pockets of thin surface soil. Limiting the removal to the top 1 in. of soil cannot be accomplished with heavy equipment, especially over many acres. The remediation goal likely will be achieved with the first pass of the equipment. If not, removal will continue until the remediation goal is achieved or basalt is encountered.

**Comment 21** Page 13. In the discussion of the SPERT-II Leach Pond it is stated discharges are still occurring to the pond. Even if the discharge is "clean water," any discharge would seem to push the contaminants deeper into the sediment. This concern on our behalf was compounded at the Idaho Falls meeting when an official responded that "mercury does not move."

**Response:** Unfortunately, the allusion to water being discharged to the pond has been cited in every document since the Track 2 assessment was written in 1994. However, recent inquiry found that

the compressor was removed in 1994 and no water has been discharged to the SPERT-II Leach Pond (PBF-16) for several years (Gerber 1999). The potential movement of mercury through the vadose zone and to the underlying aquifer was examined in the Track 2 evaluation of this site (Hillman-Mason et al. 1994). The maximum projected groundwater concentration 100 years in the future was only  $8.6E-08 \text{ mg/m}^3$ . This information supports the conclusion that migration of mercury associated with the PBF-16 site is not significant.

**Comment 22** Page 18. Concerning the table of alternatives for soil contamination sites, of the three possibilities under Alternative 5 for the contaminated soil, 0% volume reduction or no sorting clearly seems the best. On page 16, in the discussion of the various Alternative 5 outcomes it is stated: "If sorting does not substantially reduce disposal costs, ex situ sorting techniques will not be implemented." Well, under the Alternative 5 analysis of costs on the page 18 table, this question has already been answered—0% volume reduction or no sorting is the least expensive. Even under a best case scenario of 90% reduction, it would still be more expensive than no reduction; and if only 50% reduction is achieved it would cost nearly \$6 million more. Furthermore, more processing of the waste would result in more worker exposure.

Frankly, there are no demonstrated benefits of soil sorting. It appears like another instance of a technology in search of a mission. You expect the public to accept an alternative that is more costly with no demonstrated benefit, which could in fact impose an additional health risk. In fact, when examining your table the reader can conclude one of two things from your analysis of threshold and balancing criteria under Alternative 5a: a. There is no difference between the three outcomes: 0%, 50%, 90%; or b. you have chosen not to analyze them. Please don't dink with the waste any more than is necessary.

**Response** Soil sorting would be cost-effective for onsite disposal only with the achievement of a volume reduction of greater than 90%. If onsite disposal were not available, offsite disposal would be required and would be much more expensive. In this case, the likelihood is higher that soil sorting would reduce disposal costs and would be cost-effective at a volume reduction of 50% or greater. However, the soil sorting treatability study has been completed and the segmented gate system was not able to achieve the sorting efficiency required to justify sorting. Therefore, the selected remedy for the soil sites is Alternative 4a, excavation and disposal at the ICDF.

**Comment 23** Page 22. Concerning Alternative 4, in situ stabilization and encapsulation, the statement that "contaminant mobility would be reduced by more than 90%" was a little alarming considering this was what was essentially done to the old waste calciner—the most contaminated structure on the Site. How did you arrive at the 90% estimate? And what is your confidence interval for this estimate? This also calls into question your previous statement that "contamination would be contained" under this alternative.

**Response** The grout would be specifically formulated to chemically bind with the contaminants in the sludge so that they would not leach when exposed to water. A significant amount of research has been performed by INEEL scientists as well as other independent scientists on the development and testing of grout formulas to prevent contaminants from leaching into the environment. The 90% reduction in mobility is a very conservative estimate of the reduction in mobility that can be achieved. Testing performed recently at the INEEL on the grouting of a portion of the RWMC Acid Pit indicated that contaminant mobility was reduced by more than 99%. Samples of the sludge would be used to test grout formulas before use in the field for remediation, and remediation objectives would specify that the mixture of grout and waste would have to achieve a performance standard of greater than 90% reduction in mobility by conducting leach tests. Grouting to stabilize the waste would proceed only after testing proved that the performance standard could be met. Hence, confidence would be very high (nearly 100%) that this degree of reduction in mobility would be achieved. Because the sludge occupies

only a small volume of the seepage pit, there would be some void space after stabilization. This void space would be filled with grout. The grout material would be durable and highly resistant to weathering, and so would provide extra protection to the stabilized sludge. This extra layer of grout around the stabilized sludge would encapsulate most or all of the sludge.

**Comment 24** Page 26. We are pleased that Alternative 3b1 was not selected. Digging up the tank, moving it to Test Area North, burying it and then vitrifying it calls into question why you would move the tank to a different location to treat it the same way it could be treated in place. This would involve a great deal of extra work, and result in more worker exposure and additional cost for no added benefit. This obviously calls into question your statement on page 27 that “long-term effectiveness would be high, because the waste would be removed from the site.” A benefit perhaps for that particular piece of earth, but not so beneficial for the new burial site.

**Response** In situ vitrification will not be implemented at Test Area North. The selected remedy is Alternative 4, which offers high long-term effectiveness. Alternatives 3b1 and 3b2 were developed during a time when in situ vitrification of the V-tanks at Test Area North was considered the most viable option for treating the V-tank waste, which has characteristics similar to the ARA-16 tank waste. The V-tanks contain more than 10,000 gal collectively. The advantage of transferring the ARA-16 tank to the V-tank site for treatment would be to save costs for treatment because the in situ vitrification equipment would have to be mobilized to, and operated at, only one site. The long-term costs also would be reduced because one waste site would have to be capped, monitored, and maintained instead of two. Because the ARA-16 tank is small and the waste volume also is small, the impact at the V-tank site of adding the ARA-16 tank prior to in situ vitrification would be minimal.

**Comment 25** Page 30. Concerning Table 16, “Sites requiring institutional controls and 5-year reviews,” readers are referred to the updated fact sheet for more information, and there are contradictions. In the updated fact sheet, 22 of 29 of the sites identified in Table 16 are listed in the no action or no further action categories. Specifically, the fact sheet under no further action states these sites do not require site controls, which contradicts the title of Table 16. Furthermore, institutional controls have traditionally been a limited action alternative—somewhere between remediation and no action. From examining the information provided on this page, it is not clear that the term “institutional controls” is being used in a way consistent with past CERCLA decisions. If it is true that the use of the term here does not mean institutional controls as they are implemented under the limited action alternative, what type of “institutional controls” are planned for these sites?

In addition, we support the decision to better contain the contamination at the ARA-I, ARA-III, ARA-626, and PBF-16 sites over long-term monitoring especially since it is considered to be less expensive and achieves a more significant reduction in threat to human health and the environment. It does make us wonder, however, how many other sites in other waste area groups could have been handled similarly. The Snake River Alliance has always been and will continue to be Idaho’s most consistent voice in calling for cleanup at the INEEL.

**Response:** The EPA Region 10 recently issued a new policy (EPA 1999) that specifies requirements for institutional controls that was not available for the development of the Update Fact Sheet (LMITCO 1999) or for the Proposed Plan (DOE-ID 1999b). This ROD was developed in compliance with the new policy. The institutional control plan for WAG 5 will be developed as a component of the remedial design. The Decision Summary (Part 2 of this ROD) contains revised information about institutional controls and indicates which sites are classified differently from the tables presented in the Proposed Plan. Generally, institutional controls are not required for no action sites while controls may be implemented for no further action and limited action sites. The types of institutional control are presented in Tables 32 and 33.

## TECHNICAL AND LEGAL ISSUES

All currently identified technical and legal issues associated with the WAG 5 selected remedies have been addressed as described in the Decision Summary (Part 2 of this ROD). If other issues are identified at a later time, such as during the development of the remedial design or the implementation of the remedial actions, resolution will be achieved through the process defined in the Federal Facility Agreement and Consent Order (DOE-ID 1991).

### RESPONSIVENESS SUMMARY REFERENCES

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