

**Interim  
Record of Decision (ROD) Amendment,  
Upper Basin of the Coeur d'Alene River**

**Bunker Hill Mining  
and Metallurgical Complex  
Superfund Site**

**Part 3 Section 4.0  
Responses to Individual Comments**

United States  
Environmental Protection  
Agency Region 10

August 2012

# Responses to Individual Comments

This section presents EPA's responses to individual comments received on the Proposed Plan. EPA received comments in various forms including letters, emails, and oral testimony at community meetings. The comments and EPA's responses are organized into the following attachments (the attachments are provided in electronic format):

- **Attachment A:** Index of Commenters and Responses
- **Attachment B:** Master Comment List
- **Attachment C:** Responses to Federal Agency Comments
- **Attachment D:** Responses to State Agency Comments
- **Attachment E:** Responses to Native American Tribe Comments
- **Attachment F:** Responses to Local Jurisdiction Comments
- **Attachment G:** Responses to Local Community/Special Interest Organization Comments
- **Attachment H:** Responses to Business Comments
- **Attachment I:** Responses to Individual Comments

Attachment A presents an Index of all comments sorted in two methods. First, all commenters are listed alphabetically by the last name of the person or the organization providing the comments. It provides the locations (Attachment and page number) of the comments and EPA's responses. Second, all comment are listed alphabetically/numerically by the comment number, along with the locations of the comments and responses.

Many comments address similar issues. In these cases, the response for a given issue is provided once. Responses to later comments on the same issue refer to the master comment list where this response is provided. These responses are referred to as "master comment responses" and are found in Attachment B. When using Attachment B, the user may find that the referenced response addresses more issues than he or she raised. In these cases, it is expected that the user will be able to identify those parts of the referenced response that apply. In other cases, a comment may raise multiple issues. In such cases, the user may be referred to several master comment responses for a complete response to all issues raised. An overview of the issues raised and EPA's responses is provided in Part 3, Section 3.0, Responsiveness Summary.

In Attachments C through I, the comments and responses are sorted alphabetically by the last name of the commenter. Each comment letter, email, and oral testimony comment was assigned a unique identification number (e.g., 1365213). Each comment was assigned a unique comment number (e.g., LJ36-1). Many commenters submitted more than one comment letter. In these cases, a separate identification number and comment number were assigned for each set of comments. This approach helped EPA ensure that all comments were addressed.

In Attachments C through I, an image of the original comment is shown on the left side of the page and includes EPA's delineation. The right side of the page presents EPA's response to that comment.

A number of commenters' names were illegible, and these commenters are listed as "Unknown." EPA has included their comments in Attachment I and has responded to the comments where possible.

As provided in the CERCLA statute, Section 117(b), EPA is only responsible for providing responses to each of the "significant" comments, criticisms, and new data. Comments not meeting this statutory criterion have nonetheless been recorded in this section, and responses have been provided to the extent possible.

ATTACHMENT D

## **Responses to State Agency Comments**

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*No comments*

## Idaho Dept. of Environmental Quality (IDEQ), SA4, Letter 617547



STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

1410 North Hillon • Boise, Idaho 83706 • (208) 373-0502

C.L. "Butch" Otter, Governor  
Toni Hardesty, Director

November 26, 2010

Dennis McLerran  
Administrator  
USEPA Region X  
1200 Sixth Avenue  
Seattle, WA

Subject: State of Idaho Comments Regarding the Proposed Plan for the Upper Basin of the Coeur d'Alene River, Bunker Hill Superfund Site (BHSS), July 12, 2010

Dear Mr. McLerran:

By this letter, the Idaho Department of Environmental Quality provides the comments of the State of Idaho regarding the United States Environmental Protection Agency's (EPA) July 12, 2010 Proposed Plan, referenced above. These comments include input, as attached, from the Idaho Department of Water Resources (IDWR) concerning Idaho water rights and flood risk, the Idaho Bureau of Homeland Security (IBHS) concerning flood control and Idaho Department of Fish and Game (IDFG) concerning the importance of improving fisheries.

These comments rely and build upon DEQ's March 15, 2010 comments (attached for convenience) to Dan Opalski regarding the Focused Feasibility Study (FFS) which preceded the present Proposed Plan. DEQ certainly agrees that further cleanup actions are necessary in the BHSS to adequately protect human health and the environment. DEQ's March 15, 2010 comments listed and applied our overarching goals for participating in EPA processes for selection of further cleanup actions via amendment of existing BHSS Records of Decision (RODs). These goals include, in part, protecting existing human health remedial actions, obtaining tangible environmental results at a reasonable cost, ensuring community support and taking into account factors such as cash flow, low operation and maintenance (O&M) costs and adaptive management. DEQ has continued to apply these goals in evaluating the technical details and justifications of the current Proposed Plan and in considering the comments and concerns of many Silver Valley residents and various entities regarding the Plan.

As you are aware, significant public concern has been expressed regarding the possible loss of mining jobs, the need for flood control to protect existing and future remedies and communities, the high cost of the proposed cleanup actions given limited funding and uncertain economic times, the 90 year time frame for cleanup, the cost-benefit of collecting and treating water to possibly meet zinc water quality standards more than a century from now, the impacts of massive floodplain sediment removal along the South Fork of the Coeur d'Alene River (SFCR), the cleanup of mine and mill sites that do not impact water quality or are part of active mining operations, water rights and other issues. While many of these concerns bear on the goals we have established, DEQ believes EPA can satisfactorily address these concerns and others through a ROD Amendment which adopts a cleanup plan which significantly modifies the Proposed Plan. DEQ is prepared to meet with EPA in the coming months regarding state concurrence on such a ROD amendment.



617547

Based on DEQ's review of the Proposed Plan, the input of IDWR, IDFG and IBHS, public comments provided to date, and in light of the goals we have pursued throughout this process, DEQ makes the following additional comments on behalf of the State of Idaho.

#### Remedy Protection

- SA4-1 DEQ remains supportive of the remedy protection work in the Proposed Plan. The proposed work is well-defined, cost effective and critical to the long term success of the Human Health cleanup. This proposed work to protect remedies from localized flooding and EPA's plan to address damaged roads represent important steps toward ensuring the continued effectiveness of existing and pending remedial actions which provide critical human health protection. Concerns about local flooding and damaged roads have been lingering unanswered for years. They are now being meaningfully addressed and EPA's attention and action is commended. Representatives of local government have commented that the remedy protection projects should be designed for the 100 year flood as opposed to the 50 year flood. To address the threat of catastrophic flooding, IDWR recommends even more protective flood design parameters. In designing specific remedial actions, we recommend that EPA perform cost/benefit analyses which consider a broad range of flood year intervals in order to provide remedies which are both cost effective and protective.
- SA4-2
- SA4-3 The ROD amendment should also include actions to evaluate the need for and, where appropriate, provide similar protections from local flooding events for any environmental remedies implemented under the upcoming ROD Amendment. Additionally, as DEQ has addressed in previous comments, identifying and implementing major flood control projects for the South Fork of the Coeur d'Alene River (SFCDR) and Pine Creek is critical to protecting not only the human health remedy but also proposed future environmental remedies. Though significant flooding of the SFCDR and Pine Creek appears to threaten hundreds of millions of dollars of completed or proposed cleanup work, DEQ recognizes that major flood control projects on these waters are also necessary for the overall protection of human life and property in adjoining communities. DEQ and EPA need to identify concrete actions that can be included in the ROD Amendment to partner with and significantly advance the efforts of local communities and other state and federal agencies to adequately address this common threat.
- SA4-4
- The attached comments from IDWR and IBHS more specifically address flood risk concerns and needed actions.

#### Mine and Mill Site

- SA4-5 With the caveats discussed below, DEQ continues to support source control work at mine and mill sites as a priority. Source control at such sites is the logical first step to addressing human health issues and water quality concerns and was the first step taken in the BHSS "Box." However, the current list of sites needs to be carefully evaluated and pared down prior to inclusion in the ROD Amendment. We are encouraged that EPA is holding a meeting December 7 in Kellogg to review the sites to discuss those that may be questionable. Sites which are part of active mining facilities should be eliminated. Examples of such sites include tailings ponds in the Mullan and Big Creek areas.
- SA4-6 Likewise, sites that pose little or no threat to human health or water quality should not be included in the upcoming ROD Amendment. DEQ has not performed a detailed evaluation of each of the over 300 sites listed in the Proposed Plan to identify those where remediation is unnecessary to address any threat. However, as examples of such sites, based on review of readily available data, DEQ believes work proposed in the Big Creek drainage and above Mullan is unnecessary as summarized below.

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#### **Response to comment SA4-1**

The Selected Remedy in the ROD Amendment includes the remedy protection actions as described in the Proposed Plan. EPA appreciates IDEQ's efforts in collaborating on the analysis of remedy protection issues. EPA plans to continue collaboration with IDEQ for analysis of remedy protection actions in the side gulches (community areas outside the eight primary communities in the Upper Basin) and for implementation of remedy protection actions in the Selected Remedy.

#### **Response to comment SA4-2**

The scope of the remedy protection analysis was limited to determining the risk posed to existing protective barriers from relatively frequent high precipitation events. Therefore, for the purposes of remedy protection EPA and IDEQ modeled the expected effects from 5-, 25-, and 50-year storm events. These storm events were selected to provide insight regarding the range of risk as a function of large (50-year event), medium (25-year event), and small (5-year event) scenarios. The 50-year event was used as the basis for developing remedy protection actions and estimating costs to remain consistent with, and in some cases more protective than, design engineering standards developed for the Bunker Hill Superfund Site (Welch, Comer & Associates, Inc., March 2, 1994, *Bunker Hill Superfund Site, Stormwater Management Plan, Criteria and Engineering Standards. Final Draft*), the State of Idaho Transportation Department (Idaho Transportation Department, 2009, *Idaho Design Manual*), and the Washington State Department of Transportation (Washington State Department of Transportation, 2008, *Highway Runoff Manual*). It is important to note that the remedy protection actions included in the Selected Remedy are not final designs. Additional design and analysis will be completed prior to implementation, and the protectiveness of each remedy protection action will be determined based on design engineering standards.

#### **Response to comment SA4-3**

In the Focused Feasibility Study Report and Proposed Plan, EPA clearly stated that the scope of remedy protection (as defined in these documents) was limited to maintaining or increasing the long-term effectiveness and permanence of the soil portion of the Selected Human Health Remedies from the risk posed to existing protective barriers from relatively frequent high precipitation events.



IDEQ's comment relates to implementation of future remedial actions conducted at source sites (e.g., source control at mine or mill sites.). EPA is committed to implementing the Selected Remedies in a manner that emphasizes the long-term effectiveness and permanence of the remedy. As stated in the Proposed Plan, during site characterization and remedial design of remedy protection, source control, and water quality projects, EPA will continue to coordinate with local communities and flood control authorities, the Basin Commission, the U.S. Army Corp of Engineers, and the Federal Emergency Management Agency.

**Response to comment SA4-4**

Comprehensive flood control is a complex multi-jurisdictional issue that exceeds the expertise and regulatory authority of EPA's CERCLA cleanup program. EPA is eager to ensure the long-term performance of the Selected Human Health Remedies and understands that local communities are concerned about flood insurance requirements and development restrictions associated with updated Flood Insurance Rate Maps (FIRMs). EPA is therefore committed to working with local, state, and federal entities with an interest in SFCDR flood issues and, consistent with EPA's authority, to help craft solutions. EPA can and will contribute to efforts to understand SFCDR flooding and, if these efforts identify actions that will meet Superfund remedy requirements, EPA will consider such activities for future remedial decisions. CERCLA requires that EPA's contribution to flood control work must have a direct connection to the CERCLA remedy. The inclusion of remedy protection projects in the Upper Basin Selected Remedy is an example of EPA and IDEQ working with local communities to identify flood control projects directly tied to the existing Selected Human Health Remedies for OUs 1, 2, and 3.

**Response to comment SA4-5**

Due in part to extensive public concern about the duration and cost of cleanup, EPA has decided to significantly reduce the scope of the Selected Remedy by prioritizing the remedial actions that were presented as EPA's Preferred Alternative in the Proposed Plan. The Upper Basin Selected Remedy is an interim remedy which identifies the priority remedial actions that are expected to provide the greatest reduction of contamination in the SFCDR and its tributaries and protection of in-place human health barriers in local communities. EPA reduced the scope of Alternative 3+ in the Preferred Alternative for OU 3 from 345 to 145 mine and mill sites included in the Selected Remedy. The total estimated cost of the Selected Remedy as presented in the ROD Amendment is \$635 million, a significant reduction from the \$1.3 billion estimate for the Preferred Alternative identified

in the Proposed Plan. With help from stakeholders and community members involved in the Basin Commission's Upper Basin Project Focus Team (PFT), EPA has developed a logical and transparent prioritization process over the past 2 years. EPA used this prioritization process to reduce the scope of the Selected Remedy as compared to the Preferred Alternative. A site-by-site review was conducted to identify the highest priority sites for remedial action and, thus, those that are included in the Selected Remedy. The Upper Basin PFT provided input to assist EPA in prioritizing actions to include in the Selected Remedy. This site-by-site review is described in detail in the FFS Report (EPA, August 2012, *Final Focused Feasibility Study Report, Upper Basin of the Coeur d'Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site*). Key considerations for this review included (1) prior remedial actions and effectiveness of those actions; (2) active land uses; (3) potential human health risks; (4) downstream water quality; (5) site-specific data such as location, contaminant concentrations, riparian acreage, and erosion potential; and (6) access road requirements.

**Response to comment SA4-6**

See response to Comment No. SA4-5 above regarding the reduced scope of the Selected Remedy as compared to the Preferred Alternative identified in the Proposed Plan. The comment suggests that the Preferred Alternative identified in the Proposed Plan includes actions in Big Creek and the SFCDR upstream from Mullan that are unnecessary. The Selected Remedy includes significantly less remedial actions at mine and mill sites in Big Creek and the SFCDR upstream from Mullan. While the selected remedy still includes some water collection actions above Mullan, these sources will be further evaluated over time in order to quantify the relative effectiveness and priority for these identified actions.



Surface water quality samples have been collected in the lowermost reach of Big Creek since December 2001. Review of available data indicates Big Creek zinc concentrations average 3.6 micrograms per liter (ug/l), with the highest reported concentration of 7.3 ug/l. This average discounts the 9 out of 25 sampling events where zinc is below the method reporting limits. The reported Big Creek zinc concentrations are about a tenth of the Idaho State Water Quality Standard of 88 ug/l (assuming a hardness of 30 milligrams per liter CaCO<sub>3</sub> equivalent). These data suggest that dissolved zinc originating in the Big Creek drainage is not a significant environmental impairment to Big Creek or the SFCDR.

Coupled with the Big Creek surface water quality data are data collected from the SFCDR above and below Big Creek valley. This data pair presumably indicates the effect of groundwater discharge to the river from the Big Creek alluvial materials. Although surface water in the river clearly exceeds the 88 ug/l threshold, data from 10 of 12 sampling events since 2007 at the up- and downstream sampling locations show decreasing dissolved zinc concentrations through the Big Creek gaining reach. These data suggest that Big Creek groundwater does not have a significant impact to the river water quality.

SA4-6 According to information in Table D-37 of the FFS, remedial action work in excess of \$45 million is scheduled for the next 30 years in the Big Creek drainage. In light of the referenced water quality data, inclusion of sites in the Big Creek drainage for remediation does not appear justified.

Additionally, Figure D-8 of the Proposed Plan illustrates the pipeline network in the Mullan area; Table 6-6 of the Focused FFS details the proposed remedial actions in the Mullan area. Table 6.6 indicates that groundwater and adit discharge capture and piping is proposed at a number of locations that do not exceed the minimum cleanup criteria of the FFS (88 ug/l dissolved zinc), including the following:

Site No.	Name	Dissolved Zn (ug/l)	Source
MUL020	Lucky Friday No. 2	0	groundwater
MUL058	Lucky Friday No. 1	0	groundwater
LOK088	Idaho Silver No.2	0	surface water
LOK011	Snowstorm No. 3	12	surface water

The pipeline to these sites would be approximately 3.6 miles long. The overall cost for this pipeline will incorporate at least five factors: (1) right-of-way due diligence and acquisition; (2) design; (3) construction; (4) operations and maintenance; and (5) water treatment at the CTP. Based on information presented in the FFS, there is insufficient rationale for this expenditure.

DEQ believes that further review of available data will result in similar conclusions regarding other sites currently included in the list of 300+ proposed for remediation.

SA4-7 An additional significant concern regarding mine and mill site source control and removals is the clear need to avoid the construction of large regional repositories in the SFCDR valley. The public has identified preservation of development potential as one of their highest priorities in the cleanup process. During the 20-month Upper Basin Repository siting effort, public input received from citizens and elected officials strongly endorsed development of upland waste consolidation areas in order to minimize the number and size of repositories needed in the more densely populated SFCDR valley. In response to this widespread public concern, EPA and DEQ have publicly stated that the disposal of wastes generated in upland areas will utilize waste consolidation areas located near the mine and mill site sources, distant from the SFCDR valley.

This position or intention is not evident in the Proposed Plan. For example in the Ninemile Creek drainage alone over 460,000 cubic yards (cy) of waste material is earmarked for disposal in regional

### **Response to comment SA4-7**

EPA intends to explore all opportunities to reduce the amount of contaminated material slated for disposal in regional repositories by making use of waste consolidation areas within upstream drainages where practicable. For example, work conducted by EPA and the Coeur d'Alene Work Trust during the 2011 field season has identified several areas that have the potential to become waste consolidation areas in the Ninemile Creek drainage. The potential waste consolidation areas identified in Ninemile Creek will have sufficient capacity to contain all contaminated material estimated to be generated from source control and removal actions in the Ninemile Creek drainage and alleviate the need for the approximately 460,000 cubic yards of disposal space in regional repositories currently identified. The Selected Remedy has modified typical conceptual designs for remedial actions in Ninemile Creek to disposal of material in waste consolidation areas versus repositories. EPA is committed to continuing to seek out and develop additional upstream drainage waste consolidation areas to reduce volumes of material that will need to be placed in regional repositories in other areas of the Upper Basin. The use of upstream drainage waste consolidation areas presents a cost savings opportunity for the implementation of the Selected Remedy, as well as alleviates potential burden on downstream communities associated with trucking of contaminated materials and locating regional repositories in the main SFCDR valley.

SA4-7	<p>repositories (Figure D-3, Proposed Plan). For residents living along the haul route in Nine Mile Canyon and Wallace, this represents the passing of 92,000 trucks, assuming each truck hauls 10 cy and makes two trips, up-canyon empty and down-canyon full.</p> <p>Accordingly, the upcoming ROD should not commit to large regional repositories for mine and mill sites. Implementation of large scale removal action should be preceded by a thorough review of disposal alternatives, including on-site consolidation areas. Adopting the disposal strategy of the Proposed Plan is inconsistent with the efforts and progress of the agencies and citizens in addressing repository issues over the past several years.</p>
SA4-8	<p>Finally, EPA has indicated that specific language is needed in RODs to allow work to occur. EPA should ensure that the ROD Amendment provides for the remediation of any significant additional mine and mill sites sources that may be identified or discovered.</p> <p><b><u>Water Collection and Treatment above the Box</u></b></p> <p>There is no dispute that surface water in many reaches of the SFCDR and tributaries is impaired as a result of mining impacts. DEQ understands EPA's effort to propose comprehensive remedial actions is intended, to the extent possible over many decades, to restore surface water quality in the upper Basin. It is, however, DEQ's firm position that selection of the proposal to collect and convey water to the Central Treatment Plant for active treatment is unnecessary and premature at this time. As indicated in the attached March 15, 2010 comments and supplemented below, DEQ believes that source control should be completed and its water quality benefits assessed prior to implementation of active water treatment. Likewise, water quality improvements related to natural attenuation/source depletion need to be further quantified, evaluated and enhanced prior to embarking on costly, never ending active water treatment.</p> <p>EPA illustrates the extent of mining related water quality impacts with box and scatter plots in Figure 4 of the Proposed Plan. The plots demonstrate the widespread extent of dissolved zinc in the SFCDR and emphasize the contribution that Ninemile and Canyon creeks have to the overall SFCDR zinc load. The data also indicates a trend of decreasing zinc concentrations over a relatively short time span, approximately 20 years for the purpose of discussion. A comparison of the median values from Ninemile and Canyon creeks in Figure 4 show a reduction of approximately 30 percent over the monitoring period.</p> <p>Supplemental data over a slightly longer time period is available from a sampling point on the SFCDR above Osburn. This data point is below the confluence of both Ninemile and Canyon creeks, reflecting zinc loading to the SFCDR from both creeks. The attached Figure 1 shows the point data and a linear regression trend line. The trend line indicates a 55% reduction in zinc concentrations during the period from 1978 to 2009. Extrapolation of the 1978 to 2009 trend line indicates the 88 ug/l ambient water quality will be met in about 15 years, or by 2025. Although this is an overly simplistic approach, it does illustrate marked water quality improvement over the monitoring period, corroborating the trend reflected in Figure 4 of the Proposed Plan.</p> <p>Both Figure 4 of the Proposed Plan and attached Figure 1 appear to reflect the role of source depletion as a critical factor in attaining water quality improvements. Despite the availability of data indicating the existence of this process, source depletion is not fully considered as a component of long-term water quality trend prediction in Proposed Plan. Ignoring or failing to factor in these continuing water quality improvements could result in an overestimate of the work needed and waste precious dollars.</p> <p>The thrust of this information is that selection of active water treatment remedies in the upper Basin is inappropriate prior to completion of source control actions and analysis of post-remediation water quality improvements from such actions and from natural source depletion. Given the finite financial resources</p>
SA4-10	

### ***Response to comment SA4-8***

EPA is in agreement with IDEQ that the ROD Amendment needs to be flexible enough to provide for remediation of additional mine and mill sites that may be discovered. Specific language regarding this point is included in the ROD Amendment, Part 2, Sections 12.1 and 12.3. The Selected Remedy does include 15 one-acre "placeholder" actions, where Typical Conceptual Design (TCD) HH-2 would be used. TCD HH-2 consists of an upland waste pile soil cover. These actions are placeholders because there are no known sites at this time where they would be applied, although it is assumed that additional sites will be identified and will require remedial action. Therefore, an effort was made to account for this potential additional cost within the Selected Remedy. In addition, EPA acknowledges that adaptive management is a critical component of the Selected Remedy because it is not possible for physical and chemical conditions to be fully defined and known for this large and complex area. Adaptive management considers uncertainty, monitors and evaluates the effectiveness of the remedial actions and cleanup technologies, and then incorporates the "lessons learned" such that uncertainty is reduced for future actions as the cleanup work progresses towards achievement of the overall cleanup goals. Uncertainty is unavoidable, and the Selected Remedy must be managed and put into action taking this uncertainty into account. There may be situations in the future where the lessons learned from the adaptive management process may reveal the need to adjust a particular technology or cleanup action. Where changes to the Selected Remedy are significant, EPA will provide opportunities for public participation consistent with the requirements of Section 113(k) of CERCLA and 40 Code of Federal Regulations Section 300.435(c). Depending on the significance of the changes in cleanup approach, there may be additional opportunities for public input.

### ***Response to comment SA4-9***

Since the Proposed Plan was issued, EPA has conducted a statistical evaluation of surface water data collected from selected monitoring stations in the Upper and Lower Basins. The methodology and results of this evaluation are documented in the *Draft Basin Environmental Monitoring Plan/Environmental Monitoring Plan (BEMP/EMP) Surface Water Statistical Evaluation* (CH2M HILL, 2011). The evaluation sought to determine whether statistically significant trends in surface water quality are occurring. The evaluation examined station-specific trends over



both the full period of the sampling record and the sampling period subsequent to 2002. A total of 33 stations, 26 stations in the Upper Basin, were evaluated. Both measured variables (metals and nutrient concentrations) and calculated variables (ambient water quality criterion [AWQC], AWQC ratios, and loads) were included in the evaluation. Results from the evaluation indicate that metals concentrations, AWQC ratios, and metals loads show generally decreasing trends at most stations over the full period of the sampling record. However, results from the evaluation of post-2002 trends indicated the following:

- The majority of stations exhibit no significant post-2002 trends, suggesting that conditions are unchanging, based on what the post-2002 data can detect.
- The majority of stations have median post-2002 AWQC ratios that exceed 1, with five stations exceeding the dissolved zinc AWQC by more than 20 times and eight stations exceeding the dissolved cadmium AWQC by more than 20 times.

The evaluation concluded that unchanging trends, coupled with AWQC ratios significantly exceeding 1, suggest that conditions at the stations with the AWQC exceedances will likely continue to exceed AWQC without significant additional cleanup actions that target improvements in water quality. Basically this evaluation concludes that water quality in the Upper Basin is significantly impacted by mining-related contamination and that condition is expected to persist without additional cleanup actions. EPA is committed to continue monitoring and analysis of water quality trends through the Basin monitoring program as specified in the BEMP/EMP. EPA will conduct additional monitoring of surface water quality and other parameters (i.e., ecological) as remedial actions are implemented to assess the effectiveness of these cleanup actions, as well as water quality trends in watersheds where remedial actions are not being implemented so that water quality trends related to source depletion can be evaluated. The selected remedy includes both source control actions and water treatment. EPA believes that with the large amounts of inaccessible contamination underlying community areas and infrastructure, source control actions alone will not provide the necessary improvements to meet water quality standards. Collection and treatment of groundwater in selected areas will provide the fastest and most efficient mechanism to make significant progress towards achievement of these goals.

#### ***Response to comment SA4-10***

Based on the evaluation presented in response to Comment No. SA4-9 above, natural source depletion processes are not expected to provide significant improvements in Upper Basin water quality. Water treatment will be needed to address contaminated adit

discharges and contaminated groundwater that cannot be addressed through source control actions:

- For adit drainages where water diversion is not feasible. Prior to implementation of adit drainage collection and treatment, each adit will be studied to determine if there are feasible options for water diversion away from the adit--“keeping clean water clean.” Where feasible opportunities are identified, they will be implemented in lieu of water collection and treatment.
- For contaminated groundwater located beneath communities and infrastructure. Contaminated groundwater is present in the Upper Basin where groundwater comes into contact with contaminated soils and sediments.

In many areas, it is possible to remove the contaminated materials, which will eventually result in improved groundwater and surface water quality. In other areas, contaminated soil and sediment removals are not feasible due to the presence of communities and infrastructure. This occurs in two specific areas in the Upper Basin, Woodland Park and Osburn, where groundwater will be collected and treated. Groundwater collection in these two areas allows for significant improvements in water quality without the relocation of communities and infrastructure. Without water treatment, a significant source of metals loading to the SFCDR would continue unabated. Active treatment will only be used where it is expected to be the lowest cost treatment alternative, only in the Osburn area and Woodland Park in Canyon Creek. Onsite, semi-passive treatment options are also expected to provide sufficient effectiveness and will be used where they are the lowest cost treatment option, which generally applies to more remote sites. As part of the adaptive management process, EPA will evaluate future monitoring data throughout remedy implementation to determine remedial effectiveness and assess the need for additional actions. If water treatment actions are not required in some cases to achieve remedial action objectives, they will not be implemented.

SA4-10	available for remedial action, the ROD Amendment should select prioritized source control actions based on individual site evaluations or at a minimum <i>clearly</i> outline a pathway for developing the prioritization of sites. The outcome would eliminate some sites from further remedial consideration and rank the remainder by risk level. EPA should also initiate work to better understand source depletion mechanisms and further assess remedial action effectiveness monitoring to calculate the decline of zinc concentrations and periodically re-evaluate the need for active water treatment. Statutorily required 5 year remedy reviews can be utilized to accomplish such evaluations.
SA4-11	There is no doubt that meeting water quality standards in the SFCDR is a monumental challenge. We are fortunate in that the risks associated with zinc in the river do not pose a human health risk since the solutions to date as outlined in the Proposed Plan are costly, uncertain and would take over a century to achieve existing water quality standards. The bottom line, based on the pervasive nature of the zinc sources impacting ground and surface waters, is that an ARAR waiver based on Technical Impracticability may ultimately be warranted for <b>both</b> groundwater and surface water quality standards.
SA4-12	Finally, if and when active water treatment actions which require collection and diversion are pursued, EPA must comply with Idaho water law and address any potential for injury to existing water users as outlined by IDWR. These concerns are particular critical given the large quantity of water proposed to be diverted and significant public concern that Idaho water rights be fully protected. IDWR is also concerned that the plan contains very little detail on the scope of the diversion projects. IDWR expects EPA to comply with Idaho water law and seek water rights prior to the diversion of water.
	<b><u>Fishery Improvements</u></b>
SA4-13	As detailed in the attached comments of IDFG, a high value is placed on improving the fishery in the SFCDR and its tributaries. Data indicates that while fish do exist in the SFCDR, habitat is a critical limiting factor. Fishery improvements will require habitat improvement and adequate stream flow in addition to water quality improvements. Improving the fishery in the SFCDR will require coordination among the Natural Resource Trustees and entities implementing cleanup remedies. Efforts to improve the fishery must be balanced with the need for flood protection and limitations created by existing adjacent urban development. We believe EPA should continue to use goals based on measurable fishery benchmarks rather than numerical standards and criteria.
	<b><u>Water Collection and Treatment in the Box</u></b>
SA4-14	DEQ recognizes that the Box is a significant source of zinc to the SFCDR and that source control measures have already been taken to improve water quality. We also believe that a better understanding of natural source depletion is a necessary prerequisite to treatment of Box water. DEQ agrees that a better case for water treatment can be made for the Box than the Upper Basin. The implementation of such a measure in the Box could also provide valuable experience and information to evaluate the practicality and effectiveness of collecting water for treatment in the broader Upper Basin. However, no funding is currently available to implement this measure and, unless settlement funds can be used, none appears likely within the foreseeable future. As a result, DEQ supports the inclusion of Box water collection and treatment in the ROD Amendment with the recognition that implementation depends on the identification of available funding followed by pilot tests to determine if the proposed remedy will function as anticipated. The efficacy and long term practicality of collecting groundwater should be the focus of such pilot tests. Implementation of the Box water quality work would also require careful cooperation with land owners to ensure current and potential land uses are protected.

### ***Response to comment SA4-11***

EPA is required by CERCLA to carry out the cleanup to meet applicable or relevant and appropriate requirements (ARARs) unless these are waived. An ARAR can only be waived if the waiver results in a cleanup that is protective of human health and the environment. In the case of the Upper Basin cleanup, water quality standards have been identified as ARARs to protect aquatic life. The ARARs for protection of the environment in the Upper Basin are the site-specific surface water quality standards for cadmium, lead, and zinc developed by the State of Idaho (Idaho Administrative Procedures Act [IDAPA] 58.01.02.285). The site-specific criteria for lead and zinc are higher than the federal and state-wide criteria for protection of aquatic life, although they have been demonstrated to provide a comparable level of protectiveness within the SFCDR Watershed. The site-specific cadmium criterion is lower than the federal and state criteria. As described in Sections 4.0 and 12.0 in Part 2 of the ROD Amendment, EPA has decided to reduce the scope of its Preferred Alternative (identified in the Proposed Plan) in the Upper Basin Selected Remedy. The Selected Remedy is an interim, not a final, remedy for the Upper Basin. The Selected Remedy will result in significant improvements to surface water quality in the Upper Basin and may achieve ambient water quality criteria (AWQC) ARARs under the Clean Water Act in many locations following periods of natural recovery; however, it may not achieve these ARARs in all locations. The Selected Remedy satisfies CERCLA's protectiveness criteria as applied to an interim remedy. The level of protectiveness provided by an interim remedy is evaluated by the scope of its actions. Accordingly, the Selected Remedy, by its nature, need not be as protective as the final remedy is required to be under the statute. The level of protection that the Selected Remedy will provide is commensurate to the scope of the remedy, and the Selected Remedy will be adequately protective in the context of its scope, even though it does not, by itself, meet the statutory protectiveness standard that a final remedy would meet. Subsequent actions may need to be taken for the overall remedy for the Upper Basin to be considered final. Consistent with 40 Code of Federal Regulations (CFR) 300.430(a)(i)(B) and 40 CFR 300.430(f)(1)(ii)(C)(1), this interim remedy is neither inconsistent with nor precludes implementation of a final remedy that will attain ARARs. The final remedy will be identified in the subsequent decision document(s). In EPA's experience at complex sites such as the Upper Basin, it is

reasonable to expect that considerable time will be necessary to achieve cleanup. Considerable uncertainty is associated with predicting cleanup times at such sites. For complex sites like these, EPA typically examines the magnitude and extent of contamination, selects and implements remedies, and then collects empirical data over time to assess the effectiveness of the remedies. EPA uses ecological response metrics and ongoing monitoring to assess aquatic life. If EPA determines that aquatic life is being protected by cleanup criteria higher than the water quality standards, an ARAR waiver can be proposed. Although it is possible that future data may indicate that ARAR waivers are appropriate in the Upper Basin, it is not appropriate to attempt to invoke them now before any substantive cleanup has taken place. Benefits to aquatic life will begin much sooner than when AWQC are finally met. As cleanup actions move forward, reducing metals concentrations, aquatic conditions will improve and benefits will accrue as concentrations drop further over time. Such benefits will occur much sooner with more aggressive cleanup actions. Although the results of early cleanup actions will likely not achieve AWQC or fully support aquatic life, the reduced dissolved metals concentrations will bring a substantial improvement to the health of the fisheries and the overall ecosystem. The populations and species diversity of fish and aquatic organisms will continue to improve as cleanup progresses in the Upper Basin.

#### ***Response to comment SA4-12***

The State of Idaho has legislated law concerning the use of water belonging to the state. The Idaho state water law is an ARAR for the selected remedy. EPA will comply with the Idaho state water law as an ARAR and in accordance with CERCLA. As part of the Selected Remedy, groundwater will be collected from the Woodland Park area of Canyon Creek, and along the SFCDR near Osburn and in Kellogg (in the Bunker Hill Box). The groundwater collection in Kellogg will have no net impact on stream flows because the collected water will be treated and discharged at nearly the same location. Groundwater collected from Canyon Creek and Osburn will result in a minor reduction in stream flow in both Canyon Creek and the SFCDR between Wallace and Kellogg. As discussed in Section 3.7.3 of the ROD Amendment, the estimated reduction from these actions under even extreme low-flow conditions is minimal. For this reason, EPA does not anticipate that the groundwater collection and treatment actions will impact existing water rights holders.

In Canyon Creek, the total volume of water that is associated with either water right licenses or statutory claims (surface water and groundwater) in the lower reach, where groundwater extraction would occur, is less than 2 cubic feet per second (cfs). During low-

flow conditions, Canyon Creek flows at between 9 and 17 cfs. This means that between 80 and 90 percent of the stream flow remains unallocated (i.e., is not used to meet any water rights). In the case of Canyon Creek, “low-flow conditions” refer to the base flow that occurs in the fall dry season on the high end (17 cfs, as measured in 2006) and the 7Q10 flow on the low end (9 cfs), which represents the lowest 7-day average flow that occurs on average only once every 10 years. The estimated stream flow reduction for Canyon Creek due to groundwater collection under 7Q10 conditions is 10 percent. Because of this, water rights holders in Canyon Creek likely will not be impacted by the collection of contaminated groundwater under low-flow conditions.

Similarly, in the SFCDR, 65 percent of the river flow is unallocated to water rights holders under 7Q10 conditions and 80 percent is unallocated under base-flow conditions. This, compared with the estimated reduction in river flow under low-flow conditions of 16 percent discussed above, indicates that water rights holders would not be impacted by the collection of contaminated groundwater and adit discharges under the Selected Remedy.

The Idaho Department of Water Resources (IDWR) has not approved the diversion of contaminated groundwater for treatment. EPA anticipates that withdrawal and treatment of contaminated water at the Central Treatment Plant (CTP) will be supported by IDWR. All withdrawn water will be returned to the South Fork after it is treated. The withdrawal and treatment will improve water quality and benefit aquatic life. In addition, EPA believes that withdrawal of contaminated water will not interfere with existing water rights that are downstream from the points of withdrawal but upstream from the CTP. Lastly, EPA intends to work with the IDWR to ensure that implementation of the groundwater treatment component of the Selected Remedy does not conflict with Idaho water law.

#### ***Response to comment SA4-13***

In response to comments, EPA has worked with Federal Natural Resource Trustees (such as USFWS and U.S. Forest Service) and the Upper Basin Project Focus Team to develop “ecological response metrics.” Ecological response metrics are ways to measure ecological cleanup progress during the cleanup. The aquatic ecological response metrics are refined in part from the fishery tiers

included in the 2002 ROD for OU 3 (EPA, 2002; [www.epa.gov/superfund/sites/rods/fulltext/r1002032.pdf](http://www.epa.gov/superfund/sites/rods/fulltext/r1002032.pdf)), and reflect the current understanding of the river system. Identification of measurable ecological response metrics provides EPA with a means to evaluate, predict, and report on environmental improvements associated with the Upper Basin cleanup. These metrics will inform EPA on the responses of environmental receptors following implementation of remedial actions. This information will provide EPA with the tools to measure the effectiveness of remedial actions and modify (or refine) future remedial approaches to ultimately meet remedial action objectives (RAOs) and cleanup levels. The metrics will give EPA and the public:

- Tools to estimate potential environmental and ecological improvements that could result from specific remedial actions;
- Target receptors to evaluate environmental recovery; and
- A means for measuring environmental recovery and progress toward cleanup goals following the implementation of remedial actions.

***Response to comment SA4-14***

EPA agrees that the Box is a significant source of loading to the SFCDR. As noted in the Proposed Plan and Focused Feasibility Study (FFS), it will be necessary to evaluate the exact technology to be employed to address groundwater that is loading the SFCDR as it passes through the Bunker Hill Box during remedial design. In particular, EPA will collect additional data during the pre-design phase of the project and conduct additional evaluations as appropriate for the design identified in the FFS and Selected Remedy. EPA is sensitive to IDEQ's availability of funds concerns and set up a mechanism to potentially address them as part of the recent settlement with Hecla. EPA looks forward to successfully negotiating this mechanism with the State of Idaho and moving forward on implementing the additional water collection and treatment in the Box.



**Future Mining**

SA4-15 One of the early principles of the cleanup at the BHSS, particularly concerning residential yard cleanups, was that the remedy should allow people in the Silver Valley to continue conducting their lives and business with minimal interference or restrictions. This principle should be followed concerning ongoing and future mining activities. DEQ understands that mining interests will suggest reasonable approaches or protocols to EPA that can ensure the coexistence of mining activities and necessary remedial actions. In general, remedial actions should not be initiated at sites with ongoing mining activities that are otherwise regulated and posing no particular threat. Similarly, future mining activities in areas where remedial actions have been taken should not be hindered so long as the protectiveness of the remedial measures will be maintained or replaced. DEQ believes there is an opportunity to develop communication and reasonable approaches among stakeholders with interests in this arena. DEQ is interested in participating with EPA and mining interests in developing such approaches.

**Large Scale Floodplain Removals**

SA4-16 DEQ generally supports source control, including floodplain removals. The proposed removals have raised significant questions and concerns by the public and have the potential to dramatically impact local residents and businesses. The large scope of these removals could also create large disturbances in hydrologic systems that are in need of evaluation for the design and construction of significant flood control projects. The design and construction of remedial actions in such areas will require careful coordination with local communities to fully consider and provide any necessary flood control components. The comments of IDWR more fully outline these concerns.

DEQ supports early focused action to address floodplain and bedload removals. As indicated, planning, design, and construction of this work must be integrated with and complement flood control planning, design, and construction. As previously suggested, the planned Osburn Ponds Repository should not be used for upland removals and should be reserved for floodplain removals to avoid construction of large regional repositories on the Valley floor.

**Scope of ROD Amendment**

SA4-17 DEQ’s comments indicate that the scope of the remedial action selected by the upcoming ROD Amendment should be considerably reduced from the scope of the Proposed Plan. The ROD Amendment should not include active water treatment in the area above the Box or removals from mine and mill site and other source areas that are active mine facilities or are clearly insignificant contaminant sources based on readily available public knowledge. The ROD should not include unnecessary new repositories along the main valley floor and should, instead, maximize on-site consolidation of materials from mine and mill site removals. Beyond those significant changes, DEQ believes that the overall scope of the upcoming ROD Amendment should be limited to prioritized remedies which can be designed and implemented within a reasonably foreseeable period of time such as 10 to 15 years. A ROD which selects a buffet of broadly described remedies for implementation over nearly a century would not assure important public review and input. Nor would it account for future changes in environmental conditions or standards or the development of new remedial technologies or approaches. A ROD of the scope proposed would be inconsistent with the experience provided by past RODs at the BHSS. Likewise the massive cost of such a ROD could financially preclude the selection and implementation of remedies necessary to address other significant public health and environmental concerns at the BHSS, particularly those in the Lower Basin.

SA4-18 Many other commenters have concluded that a ROD of the scope set out by the Proposed Plan would side-step the public input process provided by statute and EPA regulation. DEQ agrees with this

***Response to comment SA4-15***

EPA is confident that cleanup and mining can coexist. The Upper Basin cleanup will address historical contamination from mining activities that began in the 1880s. Historical mine waste disposal practices were much different than they are today. For example, until 1968, significant amounts of mine wastes were discharged directly into creeks and rivers. This widespread contamination from past mining and smelting activities led to the necessity of CERCLA cleanup actions. Today, ongoing mining activities are regulated by state and federal laws other than CERCLA. In response to public comments and concerns, the Upper Basin ROD Amendment clarifies the decision process for whether CERCLA cleanup actions will be conducted at “Active Facilities” (i.e., mining facilities among others). This process was developed through cooperation between EPA, IDEQ, and the community members and stakeholders involved in the Basin Environmental Improvement Project Commission’s Upper Basin Project Focus Team. For the purposes of the ROD Amendment, an Active Facility is defined as a property where the owner is actively managing the risk of a release, or potential release, of a hazardous substance through regulatory mechanisms outside CERCLA that enforce compliance to protect human health and the environment. Active Facilities will continue to operate under those governing regulations and will be required to address the release of hazardous substances, as necessary, under those governing regulations. CERCLA cleanup actions will be conducted if data indicate that a release of hazardous substances has occurred or is occurring from a facility that poses risks to human health or the environment, and that this release is not being satisfactorily managed or addressed by the facility under an existing regulatory program. EPA is confident that cleanup and mining can continue together in the Upper Basin. Where cleanup of historical contamination from past mining activities is planned in areas that are being currently mined, developed, or expanded, EPA will coordinate investigation, design, and cleanup work with the property owners. This approach will minimize disruption to Active Facilities. One of the provisions of the Consent Decree between Hecla and EPA is for both parties to attend an annual planning meeting to coordinate the cleanup with ongoing exploration or development by Hecla. EPA is willing to coordinate with other mining companies in the Basin in a similar way, and welcomes further discussions with them. Cleanup is not expected to restrict future mining and exploration in the Silver Valley. EPA is aware that mining has been an important



part of the history and economy of the Silver Valley and will continue to be in the future. EPA also understands that mining companies need certainty for planning and investing, and is committed to completing cleanup actions in ways that allow mining operations to continue in compliance with environmental regulations.

***Response to comment SA4-16***

Upon consideration of comments received on the Proposed Plan, EPA has reduced the scope of floodplain removals in the Selected Remedy. EPA is eager to ensure the long-term performance of the Selected Remedy and agrees that the planned floodplain sediment removals will require careful planning, design, and coordination. EPA is committed to working with local, state, and federal entities with an interest in SFCDR flood issues and, consistent with EPA's authority, to help craft solutions. EPA can and will contribute to certain work to understand SFCDR flooding and, if these efforts identify flood control actions that would meet Superfund remedy requirements, EPA will consider such activities for future remedial decisions.

***Response to comment SA4-17***

Due in part to extensive public concern about the duration of cleanup, EPA has decided to reduce the scope of the Selected Remedy by prioritizing the remedial actions that were identified as EPA's Preferred Alternative in the Proposed Plan. This resulted in a reduction in estimated cost from \$1.3 billion to \$635 million. The Upper Basin Selected Remedy is an interim remedy which identifies the priority remedial actions that are expected to provide the greatest reduction of contamination in the SFCDR and its tributaries and protection of in-place human health barriers in local communities. EPA's goal is to complete cleanup in the Upper Basin as quickly as possible and with minimum disruption. Most of the cleanup work will be in the areas of greatest contamination, which are generally in less populated areas higher in stream drainages. Implementation of the Selected Remedy is expected to take about 30 years. As noted in the response to Comment No. I828-10, EPA has reduced the scope of the water collection and treatment component of the remedy. Nevertheless, EPA believes that the collection and treatment of contaminated waters upstream from the Box is essential to achieving the water quality goals of the Selected Remedy. How long it takes to implement the Selected Remedy will ultimately depend upon the annual funding rate, the ability to work in multiple areas simultaneously, the overall pace of cleanup, and how well the environmental system responds to cleanup actions. As the cleanup progresses, EPA will routinely look for opportunities to speed up cleanup activities while identifying locations where no further or more limited action is required. Using the

adaptive management process, EPA will also continually evaluate the effectiveness of the cleanup actions, as well as the need for additional actions. EPA is committed to addressing contaminated mine waste in the Lower Basin. As noted in Section 4.3.1 of the ROD Amendment, EPA is currently evaluating environmental conditions in the Lower Basin to provide decision-makers with information sufficient to evaluate remedial alternatives. EPA intends to manage settlement recoveries such that it will be able to address the Lower Basin; however, EPA recognizes that it may take additional resources and require additional federal and state funding.

***Response to comment SA4-18***

EPA has been, and will continue to be, committed to meaningful community participation throughout the Superfund process in the Coeur d'Alene Basin. A long-term Selected Remedy does not mean an end to public involvement; the public will have continuing opportunities to comment on how the cleanup is being implemented. EPA has committed to implement remedial actions in the Upper Basin through the Basin Commission process. This includes developing implementation plans for specific remedial actions, field investigations, monitoring, and other activities associated with the Selected Remedy. EPA will work with the Basin Commission to develop those implementation plans, and the public will have opportunities to comment and provide input on those plans. In addition, EPA will continue to conduct Five-Year Reviews, as required by CERCLA, and the public will be invited to comment on those. EPA cannot and will not change the Selected Remedy without meaningful public participation. In fact, if EPA determines in the future that significant changes to the remedy are necessary, then EPA is legally obligated by CERCLA to address these changes through either an Explanation of Significant Differences or another ROD Amendment.

SA4-18	<p>conclusion despite EPA's good faith intention to provide for public input through the proposed implementation process. The public input processes related to the development and selection of RODs at the BHHS over the past 20 years have no doubt been highly contentious and have utilized considerable governmental resources. Nevertheless, DEQ has to conclude that ease and efficiency is not the highest goal in establishing public policy.</p> <p>EPA has described the Proposed Plan as a valuable "roadmap" for guiding Upper Basin remedial actions long into the future. Indeed, EPA has made a commendable attempt to develop a single, final comprehensive plan to address the Upper Basin portion of the BHHS. However, a roadmap developed today, no matter how complete or detailed, cannot account for changes that will occur over very long periods of time. Just as actual roadmaps pertaining to road systems cannot account for changes in geography, roads or transport devices and advancements that will occur over the next century, neither can a remedy roadmap account for environmental conditions or standards or cleanup technologies that will exist or be available in the Silver Valley many decades from now.</p>
SA4-19	<p>Three major RODs (1991, 1992 and 2001) have been issued over the past 20 years for the BHHS. We know from experience and from the fact of formal amendments, Explanations of Significant Differences and the need (such as now) for new RODs-- that RODs at this site have limited temporal application and have required frequent update or replacement. The existing BHHS RODs that have functioned best are those that are well defined and limited in scope (comparing for instance the 1991 and 1992 RODs to the 2001 ROD). This experience should be applied to the current concerns about the vast scope of the Proposed Plan. In the past, EPA has itself argued that comprehensive RODs to address the BHHS are not feasible.</p>
SA4-20	<p>Finally, the cost of the Proposed Plan to address contamination in just the Upper Basin far exceed any reasonable level of funding that will likely be available for the BHHS. Selection of the Proposed Plan may effectively preclude any real consideration or selection of remedies for the rest of the Site, particularly the Lower Basin. Consideration of the relative need and merits of remedial actions that are important for the Upper Lower Basin should not be precluded by default.</p> <p><b>Additional Matters</b></p>
SA4-21	<p>In addition to the foregoing comments regarding the Proposed Plan, brief comment is necessary regarding work and issues that are not directly discussed in the Proposed Plan but are critical to successful remediation at the BHHS. First, the fundamental premise of the remedial strategy at the BHSS is that successful cleanup is ultimately dependent upon a healthy community and a strong local economy. It is imperative that work protecting human health remain the highest priority even as EPA is proposing new work to address ecological concerns. Accordingly, EPA should make every effort to conclude work under the Basin Property Remediation Program and initiate work to repair damaged roads that serve as barriers to contamination. It is also important that cleanup work continue to employ local contractors and workers and use local vendors to the greatest extent possible. Work in the past has helped create jobs and supported a local economy that continues to experience extreme challenges.</p>
SA4-22	<p>The remedial dollars available for this Site are ultimately a finite resource. As indicated by the estimates in the Proposed Plan, the Asarco Trust will not be adequate to fund all of the work that may be selected in the upcoming or future RODs. It is therefore imperative to begin planning to ensure adequate O&amp;M funds are established and maintained for any remedies implemented with settlement or Trust funds. Reserved funds must be adequate to address unforeseen future threats that may arise. One example of a threat that was unforeseen is the challenge faced by local governments in maintaining roads as barriers. As EPA and DEQ work with communities to fix the roads in the near term, we need to be aware that this issue and others like it could re-occur or arise to threaten the protectiveness of the human health remedy.</p>

#### **Response to comment SA4-19**

As discussed in response to Comment No. SA4-17 above, EPA has reduced the scope of the Selected Remedy and it is an interim remedy. The cleanup activities in the Selected Remedy primarily focus on remedial actions in Canyon Creek, Ninemile Creek, along the SFCDR between Wallace and Elizabeth Park, and the Bunker Hill Box and remedy protection actions identified throughout the Upper Basin.

#### **Response to comment SA4-20**

EPA agrees that \$1.3 billion is a considerable amount of money and has significantly reduced the scope of the Selected Remedy so that the total estimated cost is decreased by about half to \$635 million. This includes capital costs as well as long-term operation and maintenance costs. EPA's implementation planning process will also ensure that money is spent wisely to protect human health and the environment. Under the Superfund law, EPA has a responsibility and the authority to take actions to ensure that the contamination in the Coeur d'Alene Basin is cleaned up to protect human health and the environment, and to communicate this cleanup to the public. The Preferred Alternative as identified in the Proposed Plan provided an overall vision of the required cleanup in the Upper Basin. Upon consideration of comments received on the Proposed Plan, EPA decided to reduce the scope of the ROD Amendment. The Selected Remedy is an interim remedy which identifies the priority remedial actions that are expected to provide the greatest reduction of contamination in the SFCDR and its tributaries and protection of in-place human health barriers in local communities. The Selected Remedy will make substantial progress toward the overall cleanup goals. EPA will ensure that settlement monies are spent wisely and will maximize the cleanup completed using these funds so that work in both the Upper and Lower Basins can be completed over the full course of time. This will be accomplished by rigorous implementation planning and pacing cleanup over time, allowing interest to accrue on the settlement monies.

#### **Response to comment SA4-21**

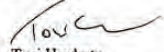
EPA will continue to prioritize the protection of human health in the Basin. EPA agrees with IDEQ that concluding the work under the Basin Property

SA4-22

Provision and resources must be made available to address such issues in a timely manner. EPA should also ensure that adequate language exists in the existing RODs and the pending ROD Amendment to timely implement the road work currently being developed by EPA and DEQ.

We appreciate the challenges of developing a comprehensive Proposed Plan for this enormous and complicated site and the long, hard work EPA has put into this effort. On behalf of the State of Idaho, DEQ appreciates this opportunity to provide comments and looks forward to meeting with EPA over the coming months to address our common interest in enhancing the protection of human health and improving environmental conditions within the BHHS.

Sincerely,



Toni Hardesty  
Director

Attachments:

- March 15, 2010 Letter to Dan Opalski
- November 5, 2010 Letter from Bureau of Homeland Security to Toni Hardesty
- Proposed Plan Upper Basin of the Coeur d'Alene River comments submitted by Idaho Department of Water Resources
- November 10, 2010 Letter from Idaho Department of Fish and Game to Toni Hardesty
- Figure 1. Surface Water Zinc Concentrations  
This is the graph that Bill Rust put together showing declines in zinc concentrations.

Remediation Program is a priority. EPA and IDEQ are currently working together along with local communities members to develop a strategy to address damaged roads that are serving as protective barriers.

**Response to comment SA4-22**

During the planning for remedial action implementation, the consideration of adequate funding for operation and maintenance (O&M) of remedial actions is critical. A preference for implementation of low O&M remedial actions, where practicable, will be included in the implementation planning process. As noted above, some settlement monies can potentially fund O&M costs, particularly for actions conducted by the Coeur d'Alene Work Trust. EPA will continue to work with the state and local jurisdictions to ensure that adequate O&M commitments are available prior to proceeding with cleanup actions. In regards to road work, EPA is working with the state and local jurisdictions on a policy for implementation of road repairs as barriers. This work is being conducted under previous decision documents.





STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706 • (208) 373-0502

C.L. "Butch" Otter, Governor  
Toni Hardesty, Director

March 15, 2010

Daniel Opalski, Director  
Office of Environmental Cleanup  
U.S. Environmental Protection Agency  
1200 Sixth Avenue Suite 900 (MS ECL-117)  
Seattle, WA 98101

Dear Mr. Opalski:

This letter provides Idaho DEQ's overarching technical review of the Focused Feasibility Study for the Upper Coeur d'Alene Basin at the Bunker Hill Superfund Site. This review does not address ROD concurrence or State Superfund Contract issues. Our comments on the proposed ROD Amendment for the Bunker Hill Site are consistent with the goals that we set at the beginning of the process. Our goals are listed below.

Protecting the existing remedy is DEQ's first priority.

Cleanup must result in tangible environmental improvements at a reasonable cost.

The ROD must provide for use of innovative methods; examples are the re-processing of contaminated waste to offset cleanup costs and hydro-power generation associated with side drainage remedies.

The implementation plan must take into account factors such as cash flow, low operating and maintenance (O&M) costs, and adaptive management.

Provide clarity and certainty for re-use and recycling of contaminated soil and other wastes under the ICP so that local residents know how to safely manage and utilize these materials.

The ROD must have active community support.

We provided these goals to EPA Region 10 and have participated in the development of the Focused Feasibility Study with these goals as our guiding principles.

Idaho's first two goals are the most germane to the questions before the NRRB. Our technical comments on the FFS are discussed below.

#### Remedy Protection

Idaho DEQ supports the Remedy Protection (RP) work outlined in Alternative 2. We believe this work is critical to maintaining the human health remedy. Without RP actions, the long-term

#### **Response to comment SA4-23**

Comment noted. EPA has similar goals and believes the Selected Remedy makes significant progress toward accomplishing these goals. Regarding community support, see response to Comment No. I295-2.

#### **Response to comment SA4-24**

Thank you for your comment.

SA4-23

SA4-24

**No comments**

Daniel Opalski  
March 15, 2010  
Page 2 of 4

sustainability of the cleanup is questionable. The proposed RP work takes a significant step in addressing a conclusion reached by the National Research Council (NRC). In Superfund and Mining Megsites (2005) the NRC noted that none of the remedies at Bunker Hill are permanent (p. 398).

The human health remedy for the Site relies on clean barriers to isolate underlying contaminated materials. The remedy removed the top 6 to 12 inches of contaminated soils based on contamination depth and property use and replaced that material with clean soil or gravel. This created the clean barrier between contaminated materials and human receptors.

The communities in the site are located in narrow mountain valleys with typical surface drainage issues associated with this setting. Local flow conditions during high precipitation events are characterized as steep gradient, high energy environments. Floodwaters may erode or bury the clean soil barriers, rendering the remedy ineffective. In watersheds with upgradient mine and mill site waste piles direct erosion of these piles and deposition of contaminated materials can also occur. The FFS demonstrates the case for Alternative 2 using the EPA evaluation criteria.

The RP work is consistent with DEQ's first goal to protect the human health remedy. However, additional work is needed to maintain the human health remedy. Two examples of additional remedy protection issues of concern for the State are: (1) local paved roads that fail as barriers due to normal wear and tear and expose the underlying contaminated road base materials; and (2) flood threats from the South Fork of the Coeur d'Alene River and Pine Creek. The roads issue will be addressed under existing RODs. DEQ and EPA are working with the Basin Environmental Improvement Project Commission to bring agencies with flood control jurisdiction together to develop a flood control project. Draft language for the ROD Amendment being reviewed by community leaders to address the flooding issues states the following:

"During EPA's Five Year Reviews of the completed portions of the Superfund cleanup, EPA evaluated risks of flooding and related threats to the remedy and recommended follow-up actions, resulting in the selection of remedy protection projects in this Amendment. EPA will continue to evaluate such risks to the Superfund cleanup in future Five Year reviews. However, comprehensive flood control is a complex multi-jurisdictional issue that exceeds the expertise and regulatory authority of EPA's and IDEQ's cleanup programs, and the local communities.

Therefore, the Basin Environmental Improvement Project Commission (BEIPC), consistent with its authority, agreed in November 2009 to take a leadership role in evaluating flooding issues associated with the South Fork and Pine Creek. Flooding is a large, system-wide concern for which a comprehensive review and plan are required to ensure that work with the greatest flood protection potential is ultimately implemented. The BEIPC has engaged a range of entities with the combined required expertise and regulatory jurisdiction. These entities include the Corps of Engineers (COE), Federal Emergency Management Agency (FEMA), Idaho Bureau of Homeland Security (IBHS), EPA, and IDEQ. EPA and IDEQ are committed to assisting the BEIPC led activities to evaluate and plan actions relative to dealing with South Fork and Pine Creek flooding issues. A funding source for the BEIPC led activities will need to be established. If these efforts identify actions that would meet Superfund remedy requirements, EPA could define and select these activities in future decision documents (e.g., ROD amendment)."



SA4-24	<p>Daniel Opalski March 15, 2010 Page 3 of 4</p>
	<p>DEQ is currently working with EPA to identify potential funding to support the BEIPC efforts.</p>
SA4-25	<p><b>Mine and Mill Site Remediation</b>                      DEQ supports the mine and mill site remediation work in the FFS. This work will not only reduce risks associated with recreational use at these sites, it will help to improve water quality. As work progresses on mine and mill sites, each site will need to be further evaluated as to its contribution to water contamination and the risks it poses to recreationalists. This work will produce tangible environmental benefits at reasonable costs and should be prioritized over active water quality treatment.</p>
	<p><b>Water Quality Remediation</b>                      Idaho DEQ supports cost effective and achievable surface and ground water quality improvement at the Bunker Hill Site. It is consistent with our mission. The biggest challenge of addressing water quality at this site is the pervasive nature of contaminant sources from mine wastes. There is no single geographic source of contamination impacting the surface water system. Due to the widespread distribution of contaminated soils in direct contact with groundwater, the surface water contaminant sources are more typically identified with large-volume alluvial deposits. Remediating these wide-spread sources as proposed in Alternative 2 is problematic, costly, and represents an open-ended commitment to active water treatment.</p> <p>Observed metal levels have generally declined over time in surface- and groundwater at the site. This is believed to be due to previous source removal actions and natural attenuation. DEQ and its contractors have considered action that could harness one of the natural attenuation mechanisms to gain water quality improvements. These considerations were based on the observation that lower zinc concentrations in groundwater were associated with water that had slightly higher pH. This is believed to be due in part to the greater amount of precipitation of ferric hydrous oxides in the higher pH geochemical environment.</p>
SA4-26	<p>A preliminary alternative was developed that called for a permeable reactive barrier (PRB) using limestone to increase pH. DEQ and EPA ultimately agreed this approach needed more work and that it was premature to be part of the preferred alternative because of unknowns related to cost and effectiveness compared to conventional treatment. As indicated in the NRRB package the PRB may be further evaluated and may have particular application at specific areas. The State encourages further evaluation to understand the potential applicability of a PRB and other alternative treatment approaches.</p> <p>DEQ's interest in exploring action which could take advantage of natural attenuation is not limited to simply addressing the high cost of conventional treatment. It also relates to the pervasive nature of the problem and the insufficiency of technical solutions available today to comprehensively address the problem.</p> <p>The preferred alternative, Alt 3+, collects large amounts of water for treatment that will continue for the foreseeable future. There is no way to accurately predict how long it would take to meet water quality standards after implementation of the remedy. The Predictive Analysis Tool is useful to compare alternatives, but is not particularly useful in predicting when water quality standards will be</p>

#### **Response to comment SA4-25**

See response to Comment No. I58-1. The Selected Remedy includes a combination of source control and water treatment actions that will be prioritized based on their overall effectiveness. Collection and treatment of contaminated groundwater is a priority in that it can provide substantial improvement of water quality in a relatively short period of time. It will take a significant number of source control actions over an extended period of time to achieve the same results.

#### **Response to comment SA4-26**

Comment noted. EPA shares IDEQ's goal "to provide tangible environmental improvements at a reasonable cost" and believes the Selected Remedy will accomplish this. See also responses to Comment Nos. I58-1 and I899-7. Regarding changes in water quality over time, since the Proposed Plan was issued, EPA has conducted a statistical evaluation of surface water data collected from selected monitoring stations in the Upper and Lower Basins. The methodology and results of this evaluation are documented in the *Draft Basin Environmental Monitoring Plan/ Environmental Monitoring Plan (BEMP/EMP) Surface Water Statistical Evaluation* (CH2M HILL, 2011). The evaluation sought to determine whether statistically significant trends in surface water quality are occurring. The evaluation examined station-specific trends over both the full period of the sampling record and the sampling period subsequent to 2002. A total of 33 stations, 26 stations in the Upper Basin, were evaluated. Both measured variables (metals and nutrient concentrations) and calculated variables (ambient water quality criteria [AWQC], AWQC ratios, and loads) were included in the evaluation. Results from the evaluation indicate that metals concentrations, AWQC ratios, and metals loads show generally decreasing trends at most stations over the full period of the sampling record. However, results from the evaluation of post-2002 trends indicated the following:

- The majority of stations exhibit no significant post-2002 trends, suggesting that conditions are unchanging, based on what the post-2002 data can detect.

- The majority of stations have median post-2002 AWQC ratios that exceed 1, with five stations exceeding the dissolved zinc AWQC by more than 20 times and eight stations exceeding the dissolved cadmium AWQC by more than 20 times.

The evaluation concluded that unchanging trends, coupled with AWQC ratios significantly exceeding 1, suggest that conditions at the stations with the AWQC exceedances will likely continue to exceed AWQC without significant additional cleanup actions that target improvements in water quality.



Daniel Opalski  
March 15, 2010  
Page 4 of 4

met. What we do know is that it will likely take several decades at a minimum to meet water quality standards at a very high cost.

SA4-26

As listed at the beginning of this letter, DEQ's second goal is to provide tangible environmental improvements at a reasonable cost. The water quality alternatives in the FS push hard against this objective. DEQ does not oppose the water quality alternatives in the FFS. However, we believe the selected remedy from the FFS should be implemented in a deliberative and iterative manner to ensure that the proposed remedies will function as expected. Treatability studies that test the Typical Conceptual Designs should also focus on better understanding of the geochemical and groundwater system to evaluate whether better alternatives are available to improve water quality. As discussed above, we support the prioritization of source control actions related to mine and mill sites over implementation of the water quality treatment remedy. During the period of mine and mill site cleanup, the cleanup project should continue to monitor water quality and evaluate the timing and sequencing of the water quality remedy.


Summary

DEQ supports EPA's technical work in the FFS. Our recommendations would be to prioritize work that protects the investment already made to protect human health. Secondly, we would prioritize the mine and mill site work that will produce tangible results to protect human health and water quality. Finally, we share EPA's concern and mission to meet water quality standards. However, the pervasiveness of the sources creates a complexity that will cost hundreds of millions of dollars and take many decades to meet those standards. There is a risk that scarce dollars could be lost on work that makes little progress in improving water quality. Thus, we encourage a deliberative and measured approach to implementing the remedy associated with water collection and treatment.

SA4-27

Finally, I would like to recognize that this FFS reflects a solid effort to meet EPA's obligation to develop a clean up plan that protects human health and the environment which includes meeting water quality standards. This is a difficult if not almost impossible task at this site. I also appreciate EPA's role in creating an open and constructive working relationship between EPA and DEQ. My intent is to keep working collaboratively to create a cleanup plan that will help make the Silver Valley whole for the benefit of its current and future residents.

Sincerely,



Toni Hardesty  
Director

TH:ra

**Response to comment SA4-27**

Comment noted and appreciated. EPA believes the Selected Remedy will accomplish our shared goals that you have articulated, and looks forward to continuing to work with IDEQ in a collaborative manner on this challenging endeavor.



C.L. "BUTCH" OTTER  
GOVERNOR

STATE OF IDAHO  
**BUREAU OF HOMELAND SECURITY**  
4040 W. GUARD STREET, BLDG. 600  
BOISE, IDAHO 83705-5004



Maj Gen GARY L. SAYLER  
ADJUTANT GENERAL

Brig Gen BJLL SHAWVER  
DIRECTOR

November 5, 2010

Ms. Toni Hardesty, Director  
Idaho Division of Environmental Quality  
1410 N. Hilton  
Boise, ID 83706



RE: Environmental Protection Agency Proposed Records of Decision (ROD) Amendment

Dear Ms. Hardesty:

The Bureau of Homeland Security (BHS) would like to take the opportunity to comment on the Records of Decision (ROD) Amendment proposed by the U.S. Environmental Protection Agency (EPA) pertaining to projects proposed for the Superfund site located in Shoshone County. In particular, because the risk exposure from flooding in Shoshone County is great and the mitigation of flood risk is most effective when considered during the design phase of projects occurring in flood-prone areas, BHS would like to bring to the attention of DEQ some important points to consider in regards to the area's flood risk and floodplain management as DEQ formulates the State's comments on the proposed ROD Amendment.

Over the last several decades, flooding continues to be the primary natural hazard impacting Shoshone County. The most obvious impact from flooding is the damage to life and property. Further, the deposit of contaminated materials from old mine and mill sites throughout Shoshone County's floodplain resulting from flood events exacerbate the cost of recovery and increase the population's risk of exposure to the health hazards associated with those contaminants. As a result, there has been a significant impact on the economic and physical well-being of Shoshone County's residents.

Each flood event presents a significant risk of recontamination to the remediated properties. With that in mind, BHS fully support's EPA's goal to protect existing remediation from the effects of localized flooding. Significant investment has been made by taxpayers to remediate contaminated properties to protect the health of citizens and the environment, and these investments should be protected. These properties and remediation projects represent a substantial risk of exposure to flood damage for Shoshone County and its communities, as well as for the State of Idaho. The protection of past remediation efforts from recontamination means protecting from further damage and unnecessary expense the investment of time, money, and effort that Idahoans have made to protect Shoshone County and its communities.

SA4-28

2010AD4216

Phone: (208) 422-3040 • Fax: (208) 422-3044 • 24-Hour Emergency Notification: (208) 846-7610

### **Response to comment SA4-28**

Comments noted and appreciated. EPA shares your interest in the protection of human health and the environment, and looks forward to collaboratively working with the Bureau of Homeland Security along with other local, state and federal flood control authorities on the cleanup. Regarding the issue of flooding, see response to Comment No. LJ36-3.

**No comments**

Ms. Toni Hardesty  
November 5, 2010  
Page 2

It is the position of BHS that in order to be most effective, future remediation efforts by EPA must take into consideration the risk of flooding and its potential ramifications. We would like to express our concern over the need for close coordination between appropriate state and federal agencies and the flood plain management officials from the local jurisdictions for any remedy action that takes place within a designated special flood hazard zone.

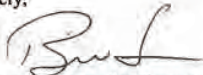
The effort for coordinated input from key stakeholders such as the U.S. Army Corps of Engineers, Federal Emergency Management Agency, Idaho Department of Water Resources, local Floodplain Administrators, and the Idaho Bureau of Homeland Security is important to ensure decisions are made in a risk-informed manner with respect to all remedy projects. Given that the long-term maintenance of remediation projects in Shoshone County falls to the State of Idaho, it is important that Idaho's taxpayers are protected as much as possible from any future duplication of past efforts and expenditure that may occur as a result of a failure to plan appropriately. We believe that a collaborative and comprehensive basin-wide flood study involving multiple state and federal partners will best accomplish this.

SA 4-28

In addition, any development in the floodplain impacts floodplain management and the ability of Shoshone County and its communities to remain in compliance with the requirements of the National Flood Insurance Program (NFIP). For Shoshone County and its residents, access to NFIP allows for federally-backed mortgages and business loans that are critical to the economic engine of Shoshone County. Participation in the NFIP also provides a mechanism to mitigate economic losses from flooding in the area and hinges on the remediation of flood risk. It is important that the risk of flooding and further deposition of contaminants not be exacerbated, with the result that these communities fall out of compliance with NFIP and lose the ability to obtain flood insurance. Therefore, the need to maintain NFIP compliance and protect homes, businesses, and public property necessitates the coordination of remediation with local floodplain administrators.

BHS wants to ensure that any projects undertaken in the Superfund site by EPA considers flood risk so that the State's responsibility to maintain remedies will be feasible. We also hope that EPA's remedies will go far in protecting the people of Shoshone County from further harm and enhance their quality of life. We appreciate the opportunity to comment and ask that DEQ considers our points in the State's formal comments to EPA on this proposed ROD Amendment.

Sincerely,



Bill Shawver, Brigadier General  
Director, Idaho Bureau of Homeland Security

BS/amc



Proposed Plan  
Upper Basin of the Coeur d'Alene River,  
Bunker Hill Mining and Metallurgical Complex  
Superfund Site

Comments submitted by  
Idaho Department of Water Resources

Comment Related to Water Rights:

The Preferred Remedial Alternative ("PRA") for the Upper Basin, Alternative 3+(d), includes extensive remedial actions along the South Fork of the Coeur d'Alene River (SFCDR) and its primary tributaries (Canyon Creek, Ninemile Creek, Big Creek, Moon Creek, and Pine Creek). Specifically, the PRA calls for the interception and diversion of an estimated average of 12,800 gpm (nearly 29 cfs) of surface and ground water.<sup>1</sup> The PRA then calls for treatment of the diverted water, piping some of the water as far as 15 miles to the Central Treatment Plant in Kellogg, Idaho. The Idaho Department of Water Resources ("IDWR") is concerned that the Proposed Plan lacks any discussion regarding water rights and the potential for injury to existing water users under the proposed action. This is especially critical given the large quantity of water proposed to be diverted and transported through the basin. IDWR is also concerned that the plan contains very little detail on the scope of the diversion projects. IDWR expects the EPA to comply with Idaho water law and seek water rights prior to diverting water as proposed in the PRA.

Comments Related To Flood Risk:

A statement in the first paragraph of the plan summary is the critical idea on which these comments are based. The sentence says, "The changes to the cleanup plan will result in a more complete cleanup of the Basin, will protect human health for the long-term and will also ensure better protection for water quality, wildlife and habitat."

The site is the entire basin of the SFCDR. By adopting a basin or watershed approach, it implies the characteristics of the watershed will be analyzed or discussed. There is no evidence in the plan of a watershed inventory or analysis. Hydrology and hydraulics, where mentioned, are for site-specific project areas. The hydrology and hydraulic characteristics of the watershed, or basin, are critical to understanding all of the risks to humans, their health, their property, and to water quality, wildlife and habitat. The plan is totally focused on the health effects of contamination from historical mining-related waste and consequently it misses the interaction between the risks posed by the contaminants and the increased risks of recontamination posed by natural hazards such as flooding, landslides, wildfire and earth quake. As presented in the

<sup>1</sup> The Proposed Plan states that an estimated average flow of 12,800 gpm of water will be treated. Proposed Plan at p. 7-6. It is assumed that the estimated average flow of water treated equals the estimated average amount of water diverted.

**Response to comment SA4-29**

Regarding the reduced scope of the Selected Remedy, water rights and anticipated flow reductions, see responses to Comment Nos. I58-1, SA4-12, and I54-8.

**Response to comment SA4-30**

Comments noted. EPA looks forward to collaboratively working with your department on this endeavor. Regarding the issues of flooding, ecological protection, and anticipated reductions in flow, see responses to Comment Nos. LJ36-3, LC33-10, and I54-8, respectively. With regard to potential damage caused by catastrophic floods, it should be noted that such floods may damage property, buildings, roads, and other community infrastructure unrelated to implemented cleanup actions. Consequently, efforts to mitigate the effects of such potentially large-scale floods are within the responsibility of several entities, including local, state, and federal.

***No comments***

plan, there is no environmental or geomorphological context of local conditions, which makes it impossible to evaluate the range of effects of the actions in the proposed alternative.

Before a preferred alternative is selected, a basin-wide study of the interaction between remediation activities and flooding should be conducted. When the potential effects of the proposed actions on hydrology, flooding and stormwater are known, then appropriate actions can be identified and a preferred alternative selected with the confidence that a comprehensive, integrated analysis exists for public and technical review.

Flooding of the main stem SFCDR and its tributaries is common. A history of flooding in the plan would impart the need for protection of remediated sites. One of the few direct references to flooding was in Chapter 3, where the breaching of dams impounding mining waste was identified as a significant factor in the distribution of mining wastes across the valley.

Currently there are about 825 National Flood Insurance policies insuring properties (structures and contents) for more than \$1.126 billion. There may be other insurance policies underwritten by private companies. There have been 93 paid losses since 1978. This highlights the awareness and value residents of the Silver Valley place on protecting their properties from flooding – a common occurrence.

Flood risk is identified on Flood Information Rate Maps (FIRMs) that have been available for the SFCDR and some tributaries at least since 1979. There is no evidence that these were consulted during development of the plan or previous remediation activities. Although the FIRM is a limited approach to defining flood risk, it is a tool the communities in the National Flood Insurance Program (NFIP) use to regulate floodplain development activities. Shoshone County, Mullan, Wallace, Osburn, Wardner, Kellogg, Smelterville and Pinehurst all are in good standing in the NFIP. Each community has an ordinance that adopts the FIRM and the Flood Insurance Study (FIS), which provides the technical information used to develop the FIRM. Where there are detailed studies, the FIS includes stream profiles based on surveyed cross sections of the water course and Base Flood Elevations (the 1% annual chance event formerly known as the 100-year flood event) derived from hydraulic modeling.

Development in the watershed may affect the hydrology and hydraulics on which the FIRMs are based. Development in the mapped flood hazard area must be permitted by the NFIP communities. If the development (which by regulation includes construction, grading, drilling, mining, etc.) causes changes in the mapped flood hazard area, technical information documenting the change to the hydrology and/or hydraulics and therefore the FIRM, must be submitted to the Federal Emergency Management Agency for review and approval.

Will the remediation activities in the alternatives be documented in the FEMA map revision process? If not, the changes may affect the flood risk to properties and these changes will not be documented. In some cases, the changes may reduce the flood risk, and in others increase flood risk. Either way, property owners, lenders, and the communities need to know, otherwise some property owners may over-insure their buildings and others may under-insure against

SA4-30



***No comments***

flood damage, and new development may be permitted in areas that have been made more at risk of flooding due to remediation actions. The location and nature of flooding may be altered and the safety of people, their property and remediated sites affected without review or notification. The concern expressed in the plan is that remediated sites may be damaged in flooding. In reality, inundation of homes, businesses and other buildings would result in contamination. This would pose an additional risk to human health that should be considered along with other potential sources of exposure to contamination.

Several proposed actions in the preferred alternative disconnect ground and surface water. The hydrological effects need to be evaluated. An unintended consequence of these actions could be alteration of riparian vegetation and ecology if the hydrologic regime were altered. Wildlife and habitat may be negatively affected rather than protected. Another negative aspect of breaking the connection between surface and ground water is reducing the attenuation of flooding provided by an intact floodplain. Putting flood and storm water in a lined channel moves the water quickly, but may result in faster downstream flooding of greater magnitude. Communities in the NFIP and the Community Rating System are encouraged to protect the natural and beneficial functions of floodplains in realization of the ecological services they provide to reduce flooding.

A catastrophic flood event is likely to affect the entire basin. Remedies should be designed to offer protection to at least the .2% chance event (500-year) to effectively protect human health, property and the investment of public funds.

Chapter 7 includes mention of hydrology and hydraulic studies. Storm frequencies are identified. Storm and flood frequencies are not the same. Storm frequencies are important for storm water impacts and site specific run off calculations, but flood frequencies are necessary to evaluate flood risk and flood mitigation activities.

In Chapter 4 the plan says that "Potential damage to a large portion of the remedies from major flooding has not been addressed at this time...Flood control projects will be done by others." A holistic approach to remediation would integrate the flood risk and flood mitigation activities into the preferred alternative for remediation of contaminated soils and water. Flooding is such an integral part of the natural processes in the basin, it needs to be included in all future actions, whether remediation or community growth and development. Flood control is an impossible target. The goal should be mitigating the impacts of flooding. The best approach would be moving forward with an integrated plan for remediation and flood mitigation in a process involving experts in all areas of hazards and risk reduction.



IDAHO DEPARTMENT OF FISH AND GAME  
PANHANDLE REGION  
2885 West Kathleen Avenue  
Coeur d'Alene, Idaho 83815

C.L. "Butch" Otter/Governor  
Cal Groen/Director  
November 10, 2010

Ms. Toni Hardesty, Director  
Idaho Dept. of Environmental Quality  
1410 N. Hilton  
Boise, ID 83706

Dear Toni:

RE: IDFG Comments on the Proposed Upper Basin Cleanup Plan

We have reviewed the Environmental Protection Agency's proposed plan to cleanup historical mining-related contamination in the upper basin of the Coeur d'Alene River (Upper Basin). The proposed plan focuses on contaminated areas along the South Fork of the Coeur d'Alene River, its tributaries downstream to one mile west of the confluence of the South and North Forks of the river, and the Bunker Hill "Box."

The Upper Basin is the principal area of historical mining activities and is the primary source of heavy metals contamination downstream from the town of Wallace. Proposed changes to the current cleanup plan are intended to take a "holistic approach" resulting in a more complete cleanup of the Basin, and better protection of public health for the long-term. Additionally, to address recommendations from the National Academy of Sciences<sup>1</sup> (from the 2002 ROD), this effort is also intended, in part, to provide better protection for water quality, wildlife, and habitat.

The Preferred Alternative is Alternative 3+(d) and RP-2.

Alternatives 3 and 4 are Operable Unit 3 (Upper Basin outside the Box) Remedial Alternatives (same as Ecological Alternatives from the 2001 Feasibility Study). Alternatives (a) through (e) involve Operable Unit 2 (inside the Bunker Hill Box) Remedial Alternatives. Alternative 3+ and 4+ are the updated and expanded remedial alternatives – the difference being the number of sites that have changed from no proposed action to proposed action(s). Also included in the Preferred Alternative is Remedy Protection Alternative RP-2. Alternative RP-2 consists of combinations of actions expected to protect existing remedies (from previous decision documents) against tributary flooding and high precipitation events up to the 50-year storm. (Alternative RP-1: No Further Action)

<sup>1</sup> "Though EPA's decisions about human health risks were generally sound, the committee found some serious blind spots in the agency's plan for cleaning up the environment and protecting fish and wildlife" (The National Academies INFOCUS, Fall 2005 Vol. 5 No.3).

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### **Response to comment SA4-31**

Comments noted and appreciated. EPA shares your interest in the protection of human health and the environment and the use of adaptive management in implementing the cleanup, and looks forward to collaboratively working with Idaho Department of Fish and Game on this endeavor.

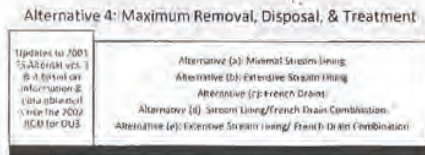
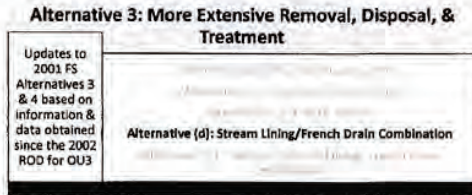
SA4-31



*No comments*

Coeur d'Alene Basin Team  
 November 10, 2010

Upper Basin Plan- Page 2 of 5



SA4-31

"The Preferred Alternative for the Upper Basin would represent a final remedy for:

- Human health protection for surface water used for drinking purposes;
- Ecological protection for surface water; and
- Human health and ecological protection for soil, sediments, and source materials at locations where remedial actions are taken."

These goals are expected to be accomplished by extensive excavation of waste rock, tailings, and floodplain sediments; capping, re-grading, and re-vegetating of waste rock areas; and isolating contaminated groundwater (using French drains and stream liners) from existing tailings impoundment facilities to reduce flows into surface water.

Also included as part of Alternative 3+ are stream and riparian cleanup actions in every major watershed within the Upper Basin. The objective is to improve bank and stream stability by reducing erosion and sediment loading in the stream. No stream restoration activities are included in these objectives.

Recent efforts have reduced the amount of heavy metals entering the Upper Basin river system, reducing risks to human health, fish, and other aquatic species that live in and near the river. The further reduction of heavy metals entering the Coeur d'Alene River system will enhance water quality, and improve conditions for numerous fish and wildlife species.

The streams and rivers were not only impacted by the heavy metals leaching into them, but also by removal of all of the trees along the stream course, and by the tailings and waste rock that was deposited in and along the banks of the stream, altering the natural channel. Channelization for

**No comments**

Coeur d'Alene Basin Team  
November 10, 2010

Upper Basin Plan- Page 3 of 5

development of transportation infrastructure (railroads and highways) and flood control have also significantly impacted the ability of Upper Basin streams to support beneficial uses.

Prior to the mining boom in the Silver Valley beaver dams were abundant along the South Fork Coeur d'Alene River. They supported a variety of fish and wildlife and helped stabilize water levels during high runoff periods. The banks of the stream were well vegetated with willow and alder and cottonwood trees arched over the water providing shade for the abundant fish inhabiting the stream (Rabe and Flaherty 1974). Dense western red cedar groves were also reported in the journals of Captain John Mullan (circa 1858).

Although human health is of primary importance, the benefits of improving aquatic and riparian habitat are important as well. Section 102 (a) of the Clean Water Act states:

The Administrator shall, after careful investigation, and in cooperation with other Federal agencies, State water pollution control agencies, interstate agencies, and the municipalities and industries involved, prepare or develop comprehensive programs for preventing, reducing, or eliminating the pollution of the navigable waters and ground waters and improving the sanitary condition of surface and underground waters. In the development of such comprehensive programs due regard shall be given to the improvements which are necessary to conserve such waters for the protection and propagation of fish and aquatic life and wildlife, recreational purposes, and the withdrawal of such waters for public water supply, agricultural, industrial, and other purposes. For the purpose of this section, the Administrator is authorized to make joint investigations with any such agencies of the condition of any waters in any State or States, and of the discharges of any sewage, industrial wastes, or substance which may adversely affect such waters.

SA4-31 — The fish species in the Coeur d'Alene River system represent a valuable resource, not only for the local population, but also for Idaho residents and the numerous nonresidents that come to Idaho to enjoy substantial recreational opportunities including fishing. Fish species in the basin not only have value from a sport fishing perspective, but also for ecological and conservation purposes. Westslope cutthroat trout and bull trout were both reported from Upper Basin streams in the late 1800s/early 1900s; westslope cutthroat are still found in the Upper Basin.

Information on sport fishing values is available as a result of a 2003 Idaho Department of Fish and Game mail survey of Idaho fishing license holders. Completed survey responses were used to develop statewide economic information about fishing in Idaho. Shoshone County ranked 16<sup>th</sup> out of the 44 counties in Idaho for spending by anglers on fishing trips. Anglers fished 100,784 days on 75,237 trips to Shoshone County spending an average of \$112 per trip. Angler spending on fishing with destinations in Shoshone County was \$8,439,539 in 2003. Anglers spent an additional \$118,791 on fishing licenses and permits purchased in Shoshone County.

- \$2,921,441 was spent on food and beverages in stores
- \$ 678,127 was spent on food and beverages in restaurants
- \$1,564,385 was spent on fishing supplies
- \$ 802,266 was spent on other equipment and supplies
- \$1,823,912 was spent on round-trip transportation
- \$ 70,995 was spent on outfitters and/or guides
- \$ 368,772 was spent on motels
- \$ 182,381 was spent on campgrounds (public and/or private)
- \$ 27,260 was spent on Access Fees (boat launches, parking, etc)
- \$ 118,791 was spent on fishing licenses and permits purchased in Shoshone County



**No comments**

Coeur d'Alene Basin Team  
 November 10, 2010

Upper Basin Plan- Page 4 of 5

The following table shows the primary fishing destinations in Shoshone County for 2003, and the amount spent on fishing trips during that period.

	St. Joe	NF CdA	CdA
Total Spending	\$4,077,947	\$1,980,687	\$1,070,483
Total Trips	25,384	20,035	15,320
Average Trip	\$161	\$99	\$70

Restoring the riparian zones and the natural channel characteristics (to the extent possible), as well as improving water quality in the Upper Basin is important and necessary for improving and re-establishing the valuable fish resource in the Valley. High quality riparian vegetation (trees and shrubs) has complex root systems that slow stream bank erosion during high flows with well-rooted, woody vegetation that can withstand increased flows more effectively than stream banks that are sparsely vegetated. In time, the trees and shrubs will provide shade and cover for fish and habitat for many species of wildlife, and eventually, will become a source for valuable large woody debris in the river. Riparian vegetation also provides habitat for numerous species of macroinvertebrates; an important food source for fish and songbirds. Improving conditions translates to increased fishing opportunities as well as other recreational opportunities for the public (e.g., Galena Ridge – page 3-2 of the Proposed Plan).

In addition to the above mentioned benefits, Idaho and neighboring states (MT/WA/OR) have recently fended off a listing of westslope cutthroat under the Endangered Species Act by demonstrating that healthy populations and habitat exist in places like the North Fork Coeur d'Alene River, and that the appropriate state regulatory mechanisms are in place to protect them. Currently the North Fork is managed by IDFG as a quality westslope cutthroat trout fishery and it is very popular with anglers. Several research and restoration projects have been and are currently being conducted on the North Fork and the Little North Fork Coeur d'Alene Rivers. Restoration activities on the South Fork could expand westslope cutthroat habitat, which could further bolster the status of this highly valued native sport fish.

Whether the Preferred Alternative or another alternative is selected, the outcome will be an Implementation Plan that is expected to identify priority projects and propose a framework for guiding on-the-ground projects and activities selected in the ROD Amendment. The Implementation Plan is intended to be a dynamic document that incorporates public input; testing, monitoring, and evaluating applied strategies; and incorporating new knowledge into management activities.

The Upper Basin of the Coeur d'Alene River – Bunker Hill Mining and Metallurgical Complex Superfund Site is an extremely large site with wide-ranging impacts. The scope and complexity of the proposed activities for the cleanup of historical mining related contamination in the Upper Basin is tremendous. Properly implemented, EPA's proposed actions in the Upper Basin have significant potential to benefit fish and wildlife, and the recreation they support. We also agree with an adaptive management approach. Appropriately applied, the adaptive management approach should provide EPA the ability to make needed adjustments over time in both a biologically and socially defensible manner. We believe adaptive management implies a clear purpose or goal with a detailed plan that describes benchmarks for measuring success.

**No comments**

Coeur d'Alene Basin Team  
November 10, 2010

Upper Basin Plan- Page 5 of 5

Cleanup in the Upper Basin, in a manner that address public health, meets the intent of the Clean Water Act to provide for fishery resources, and is in concert with social needs is a challenging task. With proposed actions that could potentially affect the hydrology of the Upper Basin and will include alterations to existing stream channels and riparian areas, we believe it is essential that these actions result in conditions that allow for recovery of native fish stocks by insuring adequate stream flows and complex habitat features along with improved water quality.

Thank you for the opportunity to comment. We look forward to working with EPA on developing the Implementation Plan(s).

Sincerely,



Charles E. Corsi  
Regional Supervisor

CEC:MTB

C: Sharon Kiefer, Boise

Rabé, F.W., and D.C. Flaherty. 1974. The River of Green and Gold: A Pristine Wilderness Dramatically Affected by Man's Discovery of Gold. Natural Resources Series No. 4. Moscow, ID: Idaho Research Foundation, Inc. 93pp.

EPA – Upper Basin proposed plan

No comments

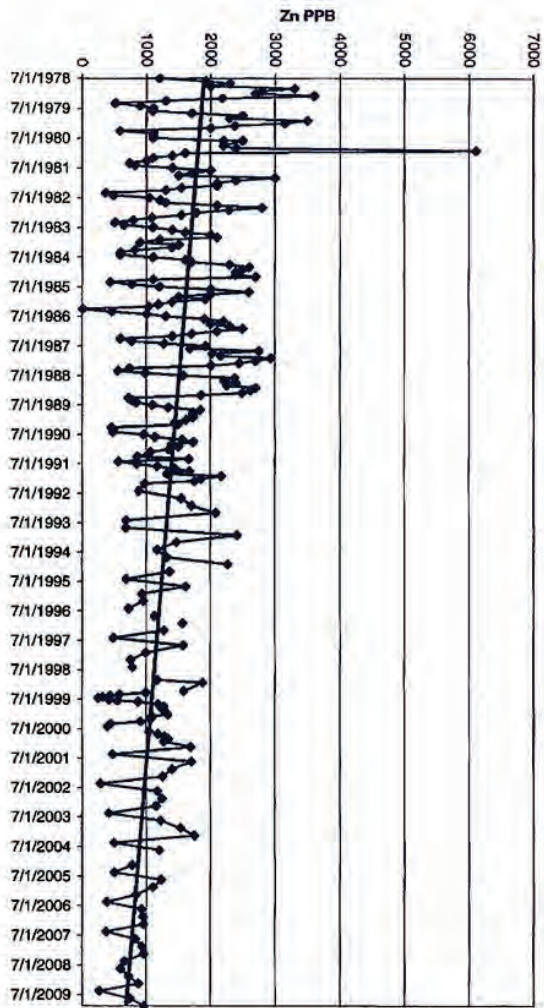


Figure 1  
Surface Water Zinc Concentrations  
South Fork Above Osburn Ponds  
NPDES Compliance Sampling



## Washington State Dept. of Ecology, SA5, Letter 1365179

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Environmental  
Cleanup Office

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY  
4601 N Monroe Street • Spokane, Washington 99205-1295 • (509)329-3400

November 15, 2010

Coeur d'Alene Basin Team  
U.S. Environmental Protection Agency  
1200 Sixth Ave., Suite 900 (MS ECL-113)  
Seattle, WA 98101

RE: WA Department of Ecology Comments—EPA Proposed Plan, Upper Basin of the Coeur d'Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site, dated July 12, 2010

Coeur d'Alene Basin Team:

Thank you for providing the WA Department of Ecology (Ecology) the opportunity to review and provide public/stakeholder input on EPA's Proposed Plan for the recommended cleanup approach for the Upper Coeur d'Alene Basin.

The selection of a cleanup approach that will address the metals-impacted surface water in the Upper Coeur d'Alene Basin is of particular importance to the citizens of Washington State. The remedial actions taken in Idaho to manage dissolved and particulate metals loading to the south fork of the Coeur d'Alene River directly affect the water quality of the Spokane River within Washington. The success of Washington's metals Total Maximum Daily Loads (TMDL) largely relies on controlling the upstream contaminant sources in Idaho so that the toxicity criteria of Washington's Water Quality Standards for surface water are met at the Washington/Idaho border.

SA5-1 In addition, the long-term integrity of Washington and EPA's joint riverbank and beach cleanup remedies are dependent upon the implementation of a timely and effective cleanup plan. The Preferred Alternative comprises Remedial Alternative 3+(d) and Remedy Protection Alternative RP-2. Remedial Alternative 3+(d) seeks to reduce metals loading to surface water primarily through material removal, hydraulic isolation/redirection, and the focused capture of high metals concentration groundwater. Treatment of metals-impacted groundwater will be through either active or passive methods. The majority of impacted water will be captured and conveyed to the Central Treatment Plant for active treatment. Low-flow volumes of impacted water at select, remote locations will be addressed using on-site passive systems.

SA5-2 Passive treatment options (permeable reactive barriers, lime settling ponds, etc.) to treat higher-flow volumes of metals-impacted surface and groundwater were considered in the Draft Final Focused Feasibility Study Report. However, these options were not carried forward for further evaluation. Passive treatment was only recommended for low-flow volumes of water in select, remote locations.

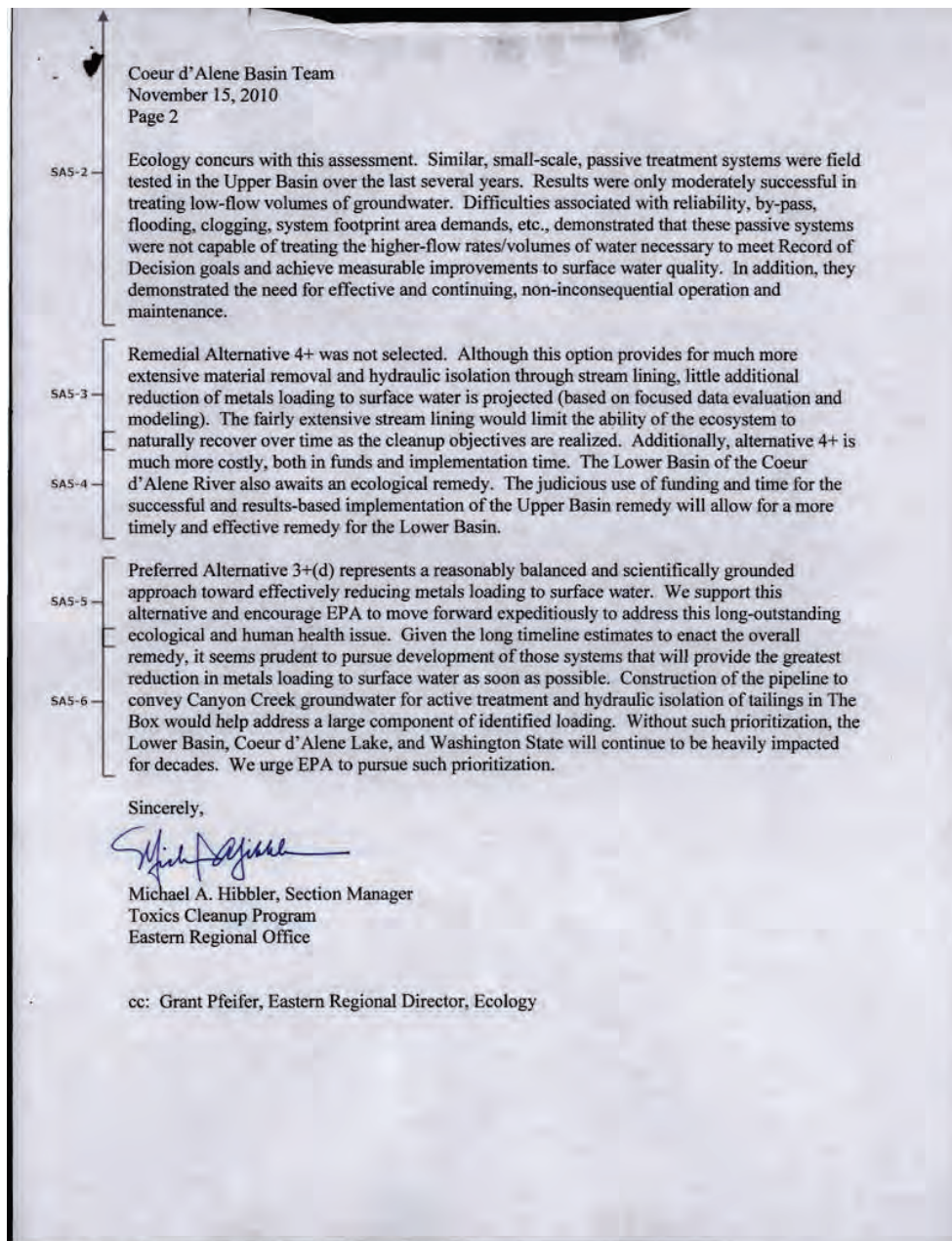
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### Response to comment SA5-1

EPA shares your goals of reducing upstream contamination in the Coeur d'Alene River Basin and having a timely and effective plan. The Selected Remedy represents a significant step in the cleanup of the Basin.

### Response to comment SA5-2

EPA concurs with this assessment. The Focused Feasibility Study Report (EPA, August 2012, *Final Focused Feasibility Study Report, Upper Basin of the Coeur d'Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site*) includes a rationale for determining the type of passive treatment assumed for each site for a given remedial alternative.



### **Response to comment SA5-3**

Comment noted.

### **Response to comment SA5-4**

EPA is in agreement that cleanup actions in the Lower Basin will ultimately be needed to protect human health and the environment and the judicious use of funding is important to meeting adequate levels of protectiveness. Although the Lower Basin is not included in the Selected Remedy, cleanup of the Upper Basin will improve water quality and reduce movement of contaminated sediment downstream in the Lower Basin. Thus, the Upper Basin cleanup will help EPA get a much better understanding of the cleanup needs for the Lower Basin. EPA continues to pursue data collection and analysis efforts in the Lower Basin to support the evaluation of remedial alternatives.

### **Response to comment SA5-5**

Due in part to extensive public concern about the duration of cleanup, EPA has decided to reduce the scope of the Selected Remedy by prioritizing the remedial actions that were identified as EPA's Preferred Alternative in the Proposed Plan. This resulted in a reduction in estimated cost from \$1.3 billion to \$635 million. The Upper Basin Selected Remedy is an interim remedy which identifies the priority remedial actions that are expected to provide the greatest reduction of contamination in the SFCDR and its tributaries and protection of in-place human health barriers in local communities. EPA's goal is to complete cleanup in the Upper Basin as quickly as possible and with minimum disruption. Most of the cleanup work will be in the areas of greatest contamination, which are generally in less populated areas higher in stream drainages. Implementation of the Selected Remedy is expected to take about 30 years. How long it takes to implement the Selected Remedy will ultimately depend upon the annual funding rate, the ability to work in multiple areas simultaneously, the overall pace of cleanup, and how well the environmental system responds to cleanup actions. As the cleanup progresses, EPA will routinely look for opportunities to speed up cleanup activities while identifying locations where no further or more limited action is required. Using the adaptive management process, EPA will also continually evaluate the effectiveness of the cleanup actions, as well as the need for additional actions.



***Response to comment SA5-6***

EPA agrees with the comment and in fact has identified the water treatment components of the Selected Remedy as a high priority. Also see response to Comment No. LC37-9. For further information regarding EPA's plans for implementing the Selected Remedy, see the ROD Amendment, Part 2, Section 12.3.