

## **Coeur d'Alene Basin Five-year (2008-2012) Work Plan**

### **INTRODUCTION**

This plan for calendar years 2008-2012 covers environmental cleanup and improvement activities in the Coeur d'Alene Basin planned by the Basin Environmental Improvement Project Commission (BEIPC) and cooperating agencies and governments in accordance with responsibilities as stated in the Memorandum of Agreement establishing the BEIPC. This plan has been prepared by the Technical Leadership Group (TLG) and the Executive Director with review by the Citizen Coordinating Council (CCC), and is based on their recommendations for activities and work to be performed in CY 2008-2012. Annual work plans will address specific actions from this five-year plan. This proposed five-year work plan is organized as follows:

Part 1 – Work Funded with Superfund or Other Cleanup Monies

Part 2 – Activities and Work Funded Through the Clean Water Act (CWA) Grant Program

Part 3 – Other BEIPC Activities and Responsibilities

Part 1 includes work to implement the Operable Unit (OU) 3 Record of Decision (ROD) with funding provided by the U.S. Environmental Protection Agency (EPA's) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Superfund program or other environmental cleanup funding. The OU-3 ROD identifies approximately \$350 million of remedial actions in the State of Idaho as well as about \$10 million in cleanup actions in the State of Washington. For planning purposes a 30-year period of remediation was anticipated. Except for establishing the human health remedy as a top priority, the ROD does not address the sequence of actions.

Part 2 addresses the work to be accomplished with CWA Grant funding. In Federal Fiscal Years 2002, 2003, and 2004, funding under the CWA was provided for the BEIPC to be used for *"...research, investigation, experiments, training, demonstrations, surveys, and studies related to the causes, effects, extent, prevention, reduction, and elimination of pollution."*

Part 3 includes work and responsibilities the BEIPC has assumed based on recommendations from the National Academy of Sciences (NAS) Study and requests from the citizens and communities of the Basin.

### **PART 1 – OU-3 ROD WORK FUNDED WITH SUPERFUND OR OTHER CLEANUP FUNDING**

Funds made available through EPA's CERCLA appropriations are available for environmental remediation on privately owned lands and state, county and local government owned properties. EPA's CERCLA funds cannot be used for cleanup of sites on public (Federal) land. Work proposed on public lands is the responsibility of the federal land management agencies. The

State of Idaho may also supply funding through the Idaho Department of Environmental Quality (IDEQ) for environmental cleanup activities.

For Part 1, the scope of the proposed five-year work plan corresponds generally to the level of funding and the funding sources anticipated over the five-year period, 2008-2012. The 2008-2012 Work Plan proposes a cleanup approach and a listing of priority projects for the 5-year planning period. The proposal includes the following OU-3 ROD work to be funded with Superfund or other cleanup monies:

- Evaluation of OU-3 pre-ROD Removal Actions
- Repositories
- Basin Contaminant Management
- Residential and Community Property Remediation Including Private Drinking Water Supply Problems
- Recreational Use Areas
- Mine and Mill Sites Remediation
- Blood Lead Screening in Children
- Ecological actions in the Upper Basin
- Ecological actions in the Lower Basin
- Basin Environmental Monitoring

Table 1-1 is a summary of activities proposed for 2008-2012 to be funded with Superfund or other cleanup monies. More detailed descriptions of the activities follow the summary table.

**Table 1-1 Summary of Activities Proposed for Implementation for 2008-2012**

<b>Proposed Activity</b>	<b>Scope</b>	<b>Objective</b>	<b>Lead Agency</b>
Evaluation of OU-3 pre-ROD Removal Actions (see EPA 5-year Review Report)	Various parties have performed pre-ROD removal actions. Results of these activities need to be evaluated and if warranted, incorporated into the OU-3 remedial action program.	Complete evaluation of these sites in context of the ROD and its schedule and incorporate into remedial action program as warranted and as funding becomes available.	EPA, IDEQ, BLM, Forest Service, CDA Tribe
Repositories	Develop, as needed, repositories to support remediation and ICP. Plan, secure properties and be ready for remediation and ICP waste in Upper and Lower Basin anticipated in the next 5-10 years.	Utilize Big Creek for Upper Basin remediation and ICP waste. Finalize design of East Mission Flats site and make it operational in 2008. Perform technical evaluations of other appropriate sites as they are identified.	IDEQ and EPA
Basin Contaminant Management and Institutional Controls Program (ICP)	Manage the Basin ICP to protect remediated areas from recontamination and to protect human health and the environment. Manage contaminants in areas of OU-3 outside the Basin ICP Administrative Area.	Manage the Basin ICP effectively and address contaminant management concerns in areas affecting CDA Lake and slack water portion of Spokane River.	IDEQ EPA PHD CDA Tribe Kootenai and Benewah Counties
Residential and Community Property Remediation including private Drinking Water Sources	Protect human health by continuing property sampling and property remediation program including private drinking water sources.	Property sampling substantially complete by December 2009. Continue to protect human health by remediating 350-500 properties per year as funding allows.	IDEQ
Recreational Use Areas	Develop a Basin Recreational Management Strategy and Guidelines Document. Remediate identified recreation areas or develop substitute clean areas along the CDA River.	Update recreation use area inventory. Complete a Basin Recreational Management Strategy and Guidelines Document.	EPA with state and federal agencies and CDA Tribe

<b>Proposed Activity</b>	<b>Scope</b>	<b>Objective</b>	<b>Lead Agency</b>
Mine & Mill Sites Remediation	Cleanup priority sites that contribute to human health risks, are currently utilized for recreation or other activities, and contribute to water quality impacts. Continue to evaluate and prioritize additional mine and mill sites identified and prepare designs so remedial actions can be initiated as funds become available.	Complete design and remedial actions at the USBM site. Prepare a priority list for the remaining sites noted in the ROD and other identified sites. Conduct remedial actions at additional identified sites as funds become available.	EPA, IDEQ, BLM
Blood Lead Screening in Children	Explore alternative approaches to integrating universally available blood lead testing into the regular health care services received by Basin children aged 1-4 years with a part of the work being to identify an education outreach program. Such exploration will include examining alternative methods for implementing an integrated blood lead testing approach as reflected in those present in other states elsewhere in the nation. The goal will be to craft a two-year pilot program for the delivery of blood lead testing via this new approach. This goal may be modified.	EPA, IDEQ, IDOH, and PHD will continue to offer a universally available blood lead screening program. Idaho Department of Health and Welfare, Division of Medicaid will work with participating physicians in the Basin to comply with requirements to perform blood lead screening during “well child checkups”.	IDEQ, PHD

<b>Proposed Activity</b>	<b>Scope</b>	<b>Objective</b>	<b>Lead Agency</b>
Upper Basin Ecological Remedies	Select remedies for water treatment in Canyon Creek. Plan and prioritize remedial actions for other source areas both within the Basin and Box	Finalize design of water treatment approaches for surface and groundwater in Canyon Creek and potentially other high contamination source areas in the Upper Basin. Prepare for ecological remediation in future planning periods.	EPA and IDEQ. With BLM in Pine & Ninemile Creeks.
Lower Basin Ecological Remedies	Complete the pilot project for conversion of agriculture land into waterfowl habitat. Design wetland remediation approach. Perform numerical modeling of River processes and sediment. Collect data on river bank conditions and metal concentrations. Monitor bank stabilization pilot projects and evaluate effectiveness. Incorporate findings from AVISTA studies into remediation strategies.	Continue to monitor the results of the Lower Basin CWA sub-grant projects to have a better understanding of the complex and dynamic system in the Lower Basin. Continue EPA and USFWS collaboration on perpetual protection, conversion and remediation of agricultural land, followed by restoration to wetland habitat ecologically safe for use by waterfowl.	EPA, IDEQ, USFWS and Coeur d'Alene Tribe
Basin Environmental Monitoring	Continue to implement long-term monitoring and make results available via <a href="http://www.storet.org">www.storet.org</a> . Implement remedial action effectiveness monitoring as appropriate.	Assess effectiveness of remedial actions and trends in overall ecological improvement due to remediation and natural attenuation.	EPA working with other agencies including IDEQ, USFWS, and USGS

### **1.1 EVALUATION OF PRE ROD OU-3 REMOVAL ACTIONS**

Various parties have performed CERCLA removal actions in Basin sub-watersheds including Canyon, Ninemile, Pine, Moon, and Grouse Creeks and along the Upper South Fork and Lower Main Coeur d'Alene River to cleanup contamination, protect human health and restore ecological systems. In 2008 existing information for these sites will be collected and incorporated into the database developed for prioritizing the mine and mill site work. This will facilitate the review of existing information and prioritization of further data collection in order

to evaluate the status of these sites in the context of the OU-3 ROD and if warranted, incorporation into the OU-3 remedial action program.

## **1.2 REPOSITORIES**

Repository development is an ongoing process that must address the demand for mining related contaminated waste disposal for the entire Basin environmental clean up program and the Institutional Controls Program (ICP). Without new repositories, continued cleanup and control of contamination is compromised and potentially stopped. IDEQ is the lead in developing repositories and the effort is coordinated with the BEIPC including the TLG and relevant PFTs and EPA and funded by the EPA.

Over the course of the next five years, EPA and IDEQ will remain focused on operating and maintaining the repository at Big Creek (BCR), which will remain the primary Upper Basin repository. The agencies will monitor BCR for available capacity and determination of appropriate timing for closure implementation. Some closure phases may need to be initialized during this planning period. In addition, IDEQ will continue developing the design for East Mission Flats repository (EMF) so that it may be completed in 2008. Small scale operations are planned at EMF during the 2008 construction season to allow contaminated soils disposal from cleanup and ICP activities occurring at sites in proximity to the repository.

Beyond these operations, EPA and IDEQ resources will be focused on evaluating and siting a new repository to serve the Upper Basin and adaptively manage the satellite collection program to serve ICP needs in the broader Basin.

## **1.3 HUMAN HEALTH ISSUES**

Remediation of human health exposures is a remedial action priority as defined in the OU-3 ROD. It includes maintaining an ICP and conducting cleanup in residential and community areas as well as recreational areas. The ROD also identifies mine and mill sites that are used for recreation and represent risks to human health.

### **1.3.1 Basin Contaminant Management**

The Contaminant Management Project Focus Team (PFT) completed the contaminant management issues study for Coeur d'Alene Lake and the slack water section of the Spokane River in Idaho and the Executive Director presented his finding and recommendations to the BEIPC in 2007. This issue remains to be addressed in the Lake Management Plan or as a separate management concern.

### **1.3.2 Residential and Community Property Remediation**

The residential and community property remediation program includes the following property types:

- Residential yards

- Rights of Way
- Commercial facilities
- Apartment complexes
- School grounds
- Trailer parks
- Common use areas

Much of the program management work is done in the year preceding actual remediation. This fact is especially true for soil sampling and analysis and property mapping. Each year the sampling program samples properties in anticipation of the next construction season. It is anticipated that the sampling of properties will be substantially completed by December 2009.

In planning the remediation program in this 5-year period IDEQ will continue to emphasize work in communities in the upper end of the Basin. This target community emphasis on remediation activities will continue during this planning period, with cleanup actions moving down the Basin (east to west) over time. The property remediation program emphasizes the cleanup of high risk properties. High risk properties are those properties on which children less than 7 years of age and/or pregnant women reside and contamination levels exceed cleanup thresholds. Cleanup actions at high risk properties within and outside of target communities will continue to be treated as a high priority of the remediation program. If a private drinking water source is encountered on a property, that source will be sampled and if remediation is required, some type of remedy will be implemented.

Average annual remediation goals for the next 5-year planning period are as follows:

- Remediate 350-500 properties
- Utilize multiple remediation contractors
- Focus on High Risk properties
- Focus on properties in target communities
- Map 500 future properties for next year's work
- Sample and analyze soils for 500-750 properties

### **1.3.3 Recreational Use Areas**

The OU-3 ROD includes remediation of Lower Basin recreational use areas to reduce human exposure to lead and other metals. Some priority recreational use areas were identified in the ROD with the understanding that other recreational areas may be evaluated for cleanup based on factors such as risk of exposure, location and use. A number of site remediation activities in the Lower Basin have been completed. Continued development and growth of recreational activities with the corresponding exposure of people to contamination is now dictating that there is a need to include potential recreation use areas in the Upper Basin as well.

The remediation and development principles identified by the Recreation PFT (below) remain valid and appropriate for the 5-year work plan:

- Primary objective is to protect human health, particularly young children and pregnant women.
- Work with impacted communities and local residents when considering recreational site development.
- Design to minimize long-term operation/maintenance costs and repository requirements.
- Create clean oases for public use (based upon community interests).
- “Reality check” of the scale and scope of what can be done.
- Build upon existing features to enhance use and reduce risks to human health.
- Provide enough amenities to attract folks to clean “safe” areas; do not create attractive nuisances or beautification-only projects.
- Design individual recreational sites to be consistent with an overall strategy for Basin recreational areas.

During the 2008-2012 planning period, the PFT will complete development of a Basin Recreational Management Strategy and Guidelines Document involving agencies, local communities, impacted land owners and other stakeholders. The PFT will update the contaminated recreation use area inventory to include both developed and dispersed recreation sites needing potential remedial actions, and initiate the Basin recreational management strategy and guidelines formation process.

#### **1.3.4 Mine & Mill Sites Remediation**

The OU-3 ROD identified a number of mine and mill sites with potential for human health exposures, primarily from recreational use. Prioritization of mine and mill sites in the Upper Basin was primarily based on risks of lead exposure to recreational users. Remedial designs address these risks as well as any impacts to water quality. The mine and mill sites listed in the ROD that appeared to represent a potential risk to human receptors are as follows:

- Day Rock in Nine Mile Creek
- Upper and Lower Constitution, Highland Surprise, Nabob, Nevada Stewart, Hilarity, in Pine Creek
- Standard Mammoth, Sisters and Burke Concentrator in Canyon Creek
- Hercules, USBM, and Silver Dollar in South Fork
- Golconda, Morning No. 6, and National in the Upper South Fork
- Rex mill site in the east fork of Nine Mile Creek (added subsequent to the ROD)

The Constitution tailings piles, the Rex mine and mill site, the Golconda site, and the Sisters waste rock dump were identified in 2003 as initial priorities. These four sites were incorporated into the BEIPC five-year work plan. Construction at the Sisters was completed in 2005 and Constitution in 2006. Golconda and Rex were completed in 2007.

At the USBM site pre-design data gathering began in September 2006. This was followed by development of a design during 2007 and 2008. Construction is tentatively scheduled for 2008.

Looking ahead to the later years of the workplan, the Mine & Mill Site PFT will develop an inventory and prioritization system for additional sites identified that have a potential for human



health impacts as well as sites where previous CERCLA removal actions were taken. This work was initiated in the fall of 2007. Initiation of designs and remedial actions will be contingent on a variety of factors such as property ownership, human health and ecological risks associated with the site and available funding.

### **1.3.5 Blood Lead Screening in Children**

Screening of children for elevated blood lead levels has been occurring annually in the CDA Basin since 1996. The purpose of the screening is to identify children with elevated blood lead levels and provide follow-up from a public health professional to identify ways to reduce lead exposures. The screening program also provides data to parties making decisions concerning the human health directed environmental cleanup efforts in the Basin.

In 2007, the Human Health PFT evaluated ways to increase participation in the blood lead testing program that would result in a proposed two year workplan for BEIPC consideration. However, the PFT did not come up with any new ways to increase the numbers other than increasing the cash payment per child. A funding source for increasing the cash payment above the current \$20 that is used in the Basin Health Intervention Program has not been found.

EPA and IDEQ are currently determining data collection needs for the upcoming 2010 Five Year Review. This effort may require gathering additional blood lead data to evaluate the effectiveness of the Basin Property Remediation Program. If this is required, EPA and IDEQ will consult with the PFT about blood lead data needs and ways to gather that data.

It is anticipated that the Panhandle Health District will continue to provide blood lead testing of children as part of the Basin Health Intervention Program.

## **1.4 ENVIRONMENTAL REMEDIATION AND RESTORATION ISSUES**

Environmental remediation and restoration issues under consideration by the BEIPC include environmental work in the Upper and Lower Basin. Remediation work is described in the ROD for OU-3. Environmental restoration will be addressed as opportunities arise.

### **1.4.1 Upper Basin Ecological Remedies**

This work includes remediation identified for Ninemile Creek, Pine Creek, Canyon Creek and the South Fork. Remediation in these areas is tied to benchmarks established in the ROD that are directed toward improvements in water quality and the fishery.

Priorities proposed for improvement in water quality and fisheries habitat are water treatment in Canyon Creek and remediation of mine wastes along Pine Creek and its tributaries. Treatment in Canyon Creek was selected as the priority action because it is expected to provide the greatest reduction of dissolved zinc and cadmium in the South Fork of the Coeur d'Alene River upstream of the Box. Remedial actions in Pine Creek were selected as the priority because this drainage provides the best opportunity for meeting fisheries benchmarks specified by the ROD in the near term.

Water Treatment - Treatment of water in Canyon Creek is proposed as the remedial action priority for reduction of dissolved metals in the South Fork above the Box. To reduce zinc loads to the South Fork Coeur d'Alene River, the OU-3 ROD calls for treatment of Canyon Creek surface water near the mouth of the creek. A great deal of the metals loading in the surface water comes from contaminated ground water in the watershed. Water treatment technology assessments, groundwater modeling, and surface and groundwater monitoring have been completed in order to develop the most cost-effective long-term solution to improving water quality from Canyon Creek that will meet the goals of the OU-3 ROD.

The modeling, monitoring, and technology evaluations were completed in 2007. During the 2008-2012 planning period, a remedial design for the most favorable technology and approach could likely begin in 2008 or 2009. EPA construction of a treatment and/or conveyance system will be contingent on available funding and a State Superfund Contract for this work. Additional efforts are also being made to collect more recent water quality data in the Upper Basin in order to quantify and prioritize source areas for cleanup and/or water treatment as funds become available. This effort will begin in 2008 and continue through 2009 and establish remedial action priorities through the planning period.

Fishery Habitat Improvements - Pine Creek is a priority area for improvement of fish habitat. Implementation of the remedy selected in the ROD is expected to significantly improve 3.5 miles of habitat. These improvements are expected to allow natural increases in salmonid populations and enhance spawning and rearing. EPA and BLM are the lead agencies for remedial actions in Pine Creek. BLM has already done a significant amount of stream and mine site stabilization on public and private lands in Pine Creek. BLM is developing a master stream stabilization plan for Pine Creek. Cleanups in Denver Creek and the Upper and Lower Constitution tailings piles were priority actions undertaken in 2006 and 2007. The potential exists for BLM to undertake projects in the Pine Creek watershed performed as joint-funded efforts along with BEIPC directed projects.

In addition to technology evaluation for water treatment in Canyon Creek and remedial designs for mine and mill sites, many remedial actions identified in the ROD will require additional information and analysis to support design and remediation. Development of necessary information and understanding in the near term will allow efficient implementation of remedial actions in future years.

#### **1.4.2 Lower Basin Ecological Remedies**

The ecological work described in the ROD for the Lower Basin includes actions for the wetlands and lateral lakes, the river banks, and river bed. The objectives of remediation in the Lower Basin focus on improving wildlife habitat and reducing particulate lead in the Coeur d'Alene River.

The ecological work described in the ROD for the Lower Basin includes actions for the wetlands and lateral lakes, the river banks, splay areas and river bed with the objectives of remediation on improving wildlife habitat and reducing particulate lead. Many other issues and uncertainties

pertaining to the implementation of remedial actions in the Lower Basin have been raised. Some lack of data continues to exist pertaining to the complex ecology of the Lower Basin and the combined effects of mining related contamination. In the 2008-2012 planning period, a major focus will be to monitor the effectiveness of Clean Water Act sub grant projects for use of the data in selecting ecological remedies in the Lower Basin.

EPA used Coeur d'Alene Basin Superfund settlement monies to purchase a conservation agreement with a willing private property owner in 2006. The agreement was established to help meet OU-3 ROD goals in establishing safe waterfowl feeding habitat in the Lower Basin as they pertain to metals of concern. Other parties participating in agreement negotiations included USFWS and Ducks Unlimited. Remedial actions on the property include the conversion of approximately 400 acres previously used for agriculture to wetland and upland habitat providing waterfowl feeding areas with mining-related metals concentrations below those shown to cause negative physiological effects in waterfowl. Natural resource restoration will be conducted on the property following remediation. Remedial action construction in the East Field component of the project started in September 2006 and was completed in 2007 using Asarco Trust settlement funds. EPA anticipates completion of the remedial action in the West Field component of the project in 2009.

The OU-3 ROD selected remedial actions to address human health and ecological risks. Currently, the priority is to implement remedial actions selected to address risks to human health in the residential and community areas of the Basin, followed by remedial actions to address human health risks posed by mine and mill contamination in the Upper Basin and water quality issues in the Upper Basin. EPA is pursuing funding for these actions and will continue to seek funds to implement all actions in the selected remedy necessary to address the release of hazardous substances in OU-3. This will include funds for remedial action to address human health and ecological risks posed by contamination in the Lower Basin.

### **1.5 BASIN ENVIRONMENTAL MONITORING**

Basin Environmental Monitoring Plan (BEMP) - Implementation of the long-term status and trends basin environmental monitoring program (BEMP) will be continued in 2008 – 2012 planning period with EPA funding. The monitoring program is critical to the successful implementation and evaluation of the Selected Remedy. EPA worked with the Monitoring PFT to develop the Basin-wide environmental monitoring program. The BEMP is the tool used to obtain technical data for assessment of long-term status and trends, evaluation of overall effectiveness of the Selected Remedy, evaluation of progress toward cleanup benchmarks, and future Five-Year reviews. EPA will continue to make analytical results from site surface water, soil and sediment sampling available on the web-accessible data management system ([www.storet.org](http://www.storet.org)); human health-related data will not be included in this database. EPA will assist interested stake holders in accessing the information.

Remedial Action Effectiveness Monitoring - Action-specific effectiveness monitoring will continue to focus on areas that have been addressed by remedial actions (e.g., tributaries, river reaches, etc.). The purpose of the effectiveness monitoring is to assess the success and effect of a given remedial action. By comparison, the BEMP will address basin-wide status and trends by monitoring a limited number of strategic locations. Both the remedial action-effectiveness and

long-term monitoring plans are integrated by coordinating monitoring to generate comparable data (same timeframe or synoptic) and using common sampling locations, where possible. Effectiveness monitoring, while not detailed in the BEMP, incorporates similar monitoring hypotheses as those included in the BEMP. This adaptive management approach maximizes the utility of effectiveness monitoring data through comparison of results to expectations.

Remedial action effectiveness monitoring in OU-3 will continue to be included in the designs and implementation plans for ecological-related remedial actions.

## **PART 2 – ACTIVITIES AND WORK FUNDED THROUGH THE CLEAN WATER ACT GRANT PROGRAM**

CWA funds are being used “*to conduct and promote the coordination and acceleration of research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, reduction and elimination of pollution*” Clean Water Act 104(b)(3). Within these constraints, the BEIPC implemented a number of projects to be funded under the CWA. A number of these projects support CDA Lake management activities.

The first round of CWA funds were available in Federal Fiscal Year (FY) 2002 and obtained by the BEIPC in the summer of 2003. These projects will be completed by January 31, 2008. The next round of funding for FY2003 was available to the BEIPC during the summer of 2004. These projects will be completed by June 30, 2008. Finally, the most recent round of funding for FY2004 was available in July 2005 and these projects are at various stages of implementation. It is anticipated that most if not all the CWA projects will be completed by the end of 2008.

This section of the work plan outlines activities of all CWA projects. As these projects reach completion, the BEIPC will receive reports detailing the results of each one. Over the next five years, information taken from these reports will be used to develop future work plans.

Table 2-1 is a summary of activities funded with CWA funds.

**Table 2-1 Summary of Activities Funded by CWA**

<b>Activity</b>	<b>Original Scope of Sub-Grant</b>	<b>Lead Agency</b>
Lake Monitoring Water Quality Studies	Conduct monitoring of lake water quality to assess nutrient, sediment, and metal loading and trends in lake water quality; to assess improvements/impacts from upstream environmental improvements projects; and assess impacts from further development projects along the lakeshore.	CDA Tribe, USGS

<b>Activity</b>	<b>Original Scope of Sub-Grant</b>	<b>Lead Agency</b>
Ecological Monitoring of Coeur d'Alene Lake (Complete)	Identify baseline conditions for ecological receptors in CDA Lake in order to determine future changes in the ecological condition of the lake. This information may be used in the future to determine if actions implemented under the OU-3 ROD and management actions implemented under the Lake Management Plan are effective.	USFWS
Stream Bank Stabilization (Complete)	Construct and monitor the effectiveness of several techniques to protect the Coeur d'Alene River banks from boat wake erosive forces.	IDEQ
Lake Education and Outreach Program (Complete)	Develop and implement a public information and education plan. The objective of such a plan is to provide the public with information to help them better understand the ecology of the Lake and ways they can better protect the Lake while they enjoy it.	CDA Tribe, KSSWCD
Mullan Inflow and Infiltration Groundwater Metal Loading Study/Demonstration Project (Complete)	Evaluate sources of metals loadings to wastewater treatment facilities, investigate the potential reduction of metals loadings to the South Fork Coeur d'Alene River, determined the efficacy of wastewater collection system infiltration and inflow (I/I) reduction projects to reduce peak plant flows, and advance the current state of knowledge with regard to the cause and effect of such efforts to reduce pollution while considering transaction costs and community coordination.	South Fork Sewer District
Woodland Park Groundwater Quality Monitoring (Complete)	Monitor water quality in this shallow alluvial groundwater system in Woodland Park area of Canyon Creek. Gain a better understanding of the metal concentrations and potential loading from groundwater to the Canyon Creek surface water system.	IDEQ
Meyer Creek Flood Control (Complete)	Assess the condition of the Meyer Creek diversion system and propose possible alternative remedial recommendations and order of magnitude cost estimates to prevent recontamination of the Superfund remedy in the City of Osburn during a flood event.	IDEQ

<b>Activity</b>	<b>Original Scope of Sub-Grant</b>	<b>Lead Agency</b>
Upper East Fork Nine Mile Creek Water Quality Evaluation (Complete)	Success Mine Passive Water Treatment – 1) Reduce plugging in the Success Mine Apatite Barrier by making design modifications to the sediment chamber and injecting air into the Apatite to break up clogging in the media; 2) Perform a tracer study to determine hydraulic flow paths and residence times; 3) Analyze Apatite to determine forms of metal precipitates and where the reactions occur; and 4) Evaluate nutrient addition in the groundwater to determine if in situ metal precipitation is a viable option. East Fork Ninemile Creek Monitoring – Conduct monitoring of the East Fork of Ninemile Creek to assess where metal loadings occur, how seasonal flows affect metal loadings, evaluate overall water chemistry, and determine forms of metal precipitates.	INL
Metals and Nutrient Removal Pilot at Page Plant (Complete)	Evaluate two emerging technologies for precipitation and/or adsorption for removal of heavy metals (lead, cadmium, zinc, and copper) and phosphorus from point source discharges in the Silver Valley, especially the Page wastewater treatment plant.	South Fork Sewer District
East Fork Pine Creek Revegetation Pilot Project	Identify practical and cost-effective methods to accelerate natural revegetation processes. Vegetation is needed to ultimately stabilize many stream reaches within the Basin. Identify and contrast the relative “bang for the buck” of several locally applicable revegetation methods.	BLM
Inventory and Evaluation of Private Lands for Potential Restoration of Wetland Habitats	Provide a comprehensive inventory that identifies private land that may be suitable for wetland remediation and restoration projects in the Basin. This inventory would be useful for identifying agricultural and wetland habitats that could be remediated or restored as part of the ROD. Landowners will be surveyed to determine interest in wetland creation or enhancement on their respective properties. Properties identified as potential remediation/restoration projects will be assessed for their habitat quality.	USFWS

<b>Activity</b>	<b>Original Scope of Sub-Grant</b>	<b>Lead Agency</b>
Monitoring Fish Responses to Bank Stabilization in the Coeur d'Alene River (Complete)	Assess the short- and long-term affects of bank stabilization treatments on fish community structure in the lower Coeur d'Alene River. Provide recommendations for bank stabilization project designs with the least adverse impacts and most positive benefits to overall fish community structure. Provide recommendations on what project-specific monitoring that would be required for individual bank stabilization projects.	USFWS, U of I
Sediment Transport Model Phase 1 and Phase 2 (Complete)	Develop a set of tools that can be used by resource managers for evaluating proposed projects designed to minimize the transport of metal contaminated sediments in the Lower CDA River. Objectives include the utilization of existing data and collection of additional data to develop and calibrate computer models of the river between Cataldo and CDA Lake. These models would be capable of simulating the hydraulic and sediment transport characteristics of the river over a wide range of stream flow and lake elevation conditions. The models would be used to test proposed projects prior to implementation with the goal of improving their design and avoiding unanticipated and costly mistakes.	USGS
Lake Response Simulation Model Phase 1 and Phase 2 (Complete)	Provide the entities responsible for management of Coeur d'Alene Lake with a sophisticated computer modeling system with which to simulate the lake's long-term responses to a wide range of remediation strategies to be implemented under the ROD and the Lake Management Plan.	USGS

<b>Activity</b>	<b>Original Scope of Sub-Grant</b>	<b>Lead Agency</b>
North Fork Coeur d'Alene River Hydrologic and Sediment Study (Complete)	Characterize and determine the existing hydrologic and in-stream conditions within the North Fork Coeur d'Alene River sub-basin stream system, and attempt to determine the impact of past and current management actions on the observed stream function and ecological conditions. In turn, the above scientific assessment would lead to specific identification of restoration projects, BMPs, and land use policy changes aimed to restore proper hydrologic functions and the impaired cold water aquatic life beneficial use (i.e., salmonid populations).	IDEQ
Mica Bay Nutrient Reduction Project. Phase 1 complete, Phase 2 ongoing.	Demonstrate for training and education purposes a means of reducing nutrient and sediment contamination to Coeur d'Alene Lake in accordance with the implementation of the Lake Management Plan. Project will also accomplish some TMDL implementation goals for the recovery of beneficial uses in Mica Creek.	IDEQ
Lower Lakes Aquatic Vegetation Survey (Complete)	Develop baseline data on submersed aquatic plant species distribution and biomass in Benewah, Chatcolet and Round Lakes. Estimate nutrient (primarily phosphorus) release from the existing plant beds into the water column of these lakes and, subsequently into Coeur d'Alene Lake. Inspect these lakes for the presence of invasive, noxious aquatic species.	CDA Tribe
Canyon Creek Groundwater Metal Source Characterization (Complete)	Determine how, in practical terms, zinc and other metals are distributed between different physical and chemical states in the Canyon Creek alluvium. This information will be used to help understand how natural processes can affect the movement of contaminant metals through Canyon Creek and how engineered processes can impact contaminant metal mobility or sequestration.	INL
Plummer Wastewater Treatment Plant Pilot	Construct a pilot scale demonstration of a cascading wetland treatment for use in the City of Plummer waste water treatment plant upgrade.	City of Plummer



<b>Activity</b>	<b>Original Scope of Sub-Grant</b>	<b>Lead Agency</b>
Plummer Creek Watershed Nutrient Load Assessment, Modeling, and Management Plan Development	Characterize nutrient concentrations and transport through the Plummer Creek watershed and into Chatcolet Lake. Develop a Watershed Nutrient Management Plan which will include appropriate and specific point nutrient source control efforts for the Plummer Creek watershed.	CDA Tribe
Pinehurst Flood Impact Study	Develop stream channel and drainage infrastructure techniques to control and mitigate water pollution and protect property from recontamination and flood impacts.	IDEQ
Silver Crescent Mine and Mill Complex Habitat Restoration	Study the feasibility and economics of watershed restoration through demonstration projects in areas where the original stream type has been severely altered by mining and environmental cleanup activities.	USDA-Forest Service
Canyon Creek Treatability Study (Complete)	Develop an alkaline precipitation design as a low cost method of achieving a substantial improvement toward ROD goals, and determine if the proposed water treatment technology is implementable in the So. Fork CDA River.	IDEQ
South Fork Sewer District Toxicity Reduction	Identify sources of toxicity in Basin community wastewater treatment plant effluent to develop options for removal of toxicants; perform bench testing to verify removals; and develop capital and O&M cost projections.	South Fork Sewer District
Assessment of the Economics and Effectiveness of Alluvium Sorting as Mine Waste Removal Strategy at the Project Implementation Level (Complete)	Establish, at a removal project level, the costs of a simple screening of removed contaminated alluvium, and assess the beneficial value of the removal strategy by assessing the change in the metals content of the three-quarter inch minus fraction of the bed load sediment downstream.	IDEQ

Activity	Original Scope of Sub-Grant	Lead Agency
Coeur d'Alene Lake Management Plan Implementation	Conduct an extensive evaluation of all activities within one mile of the Lake shore to evaluate what BMPs are in place, how effective they are, what BMPs are required but not in place, and to establish specific BMP audit procedures.	IDEQ, CDA Tribe

Note: See 2007 Annual Accomplishment Report for update on current project activities as of January 1, 2008.

### **PART 3 – OTHER BEIPC ACTIVITIES AND RESPONSIBILITIES**

For Part 3, the scope of the five-year work plan includes a number of work items that the BEIPC has elected to become involved in and items of work needed to accommodate some of the recommendations of the NAS study. The plan includes the following work:

- Phase II Component of Overall OU-2 Remedy
- Lake Management Activities
- Upper Basin Infrastructure Revitalization Activities
- Communications and Public Involvement
- Funding for the Environmental Cleanup and Infrastructure Revitalization

#### **3.1 PHASE II COMPONENT OF OVERALL OU-2 REMEDY**

Implementation of the OU-2 remedy is being conducted in a phased approach developed and agreed upon by the EPA and State of Idaho in the State Superfund Contract. Phase I of the remedy is largely complete. Phase I cleanup consists of source control and removal activities and evaluation of the effectiveness of these activities in meeting the water quality objectives.

Phase II of the OU-2 remedy will be implemented following completion of source control, removal activities and evaluation of the effectiveness of these activities in meeting water quality improvement objectives. Phase II will consider any shortcomings encountered in implementing Phase I and will specifically address long-term water quality, ecological and environmental management issues. Both ROD and State Superfund Contract (SSC) amendments will be required prior to implementation of any Phase II remedial actions. EPA and IDEQ are the responsible parties for modifying the ROD and negotiating a SSC.

The BEIPC will participate in future Phase II activities in OU-2 by providing technical input into the remedy alternative development and selection (including evaluation of technical reports, pilot studies, and feasibility study documents), providing input into the public processes associated with ROD modifications and educating the community and legislative bodies of the need for funding for this work.

### **3.2 LAKE MANAGEMENT ACTIVITIES**

The OU-3 ROD anticipates that the State and Tribe, coordinating with federal agencies and local governments, will prepare and implement an updated Coeur d'Alene Lake Management Plan (LMP) outside of the Superfund process using separate regulatory authorities.

During the 2008-2012 work planning period, the BEIPC and Clean Water Act sub-grant implementing agencies will continue to be involved in the following actions in support of lake management:

- Complete Lake Management Plan, management action table audit.
- Implementation and completion of a pilot project to reduce nutrients entering the Lake from Mica Bay; and
- Implementation and completion of a project to perform a nutrient load assessment and modeling to develop a management plan for Plummer Creek tributary to the Lake.

In addition, the State and Tribe will complete the two phase mediation process. The first phase has been completed and entailed assessing the global issues surrounding the current impasses to develop an updated joint LMP. The report on this assessment was finalized in January 2007. The second phase is attempting to mediate the impasses and develop a joint Tribe and State LMP that includes stakeholder involvement consistent with agreements between the State and Tribe and the State and Counties. If the second phase is successful the State and Tribe anticipate approving the LMP and coordinating adoption and implementation with other stakeholders, including local governments and the BEIPC.

### **3.3 UPPER BASIN INFRASTRUCTURE REVITALIZATION ACTIVITIES**

In 2006, the BEIPC implemented a process to identify existing infrastructure, determine infrastructure needs, prioritize actions, and develop an Infrastructure Revitalization Plan (IRP) for the Upper Basin communities. This effort also includes identification of stormwater drainage problems, the development of potential financing options, and the acquisition of financing. This process will continue through 2008 including completion of the drainage assessments for Wallace, Osburn and Silvertown, completion of the Upper Basin infrastructure assessment, preparation of cost estimates for needed work in the Upper Basin, updating of cost estimates for the Box projects, combination of Box and Upper Basin information, prioritization of projects for the entire Upper Basin including the Box, and final preparation of the IRP.

The funding acquisition work will include prioritization of systems segments, the study and determination of the best processes for rehabilitation, and preparation of preliminary designs and estimates to support efforts in meetings with local governments, taxing districts boards, local stakeholders and the general public. In future years, the BEIPC will continue to assist Upper Basin communities and utilities in pursuing funding to implement the IRP and will update the IRP as needed.

### **3.4 COMMUNICATIONS AND PUBLIC INVOLVEMENT**

The Communications Project Focus Team (PFT) will be formed to address issues concerning the strengthening of public involvement in BEIPC activities and communication between the Basin community and the BEIPC and CERCLA cleanup and natural resource restoration implementing institutions. The CCC will be the focus organization to assist in implementing this process.

The Communications PFT will formulate ideas and recommendations concerning improvement of communications and public involvement. This information will be presented to the TLG and CCC for consideration and then presented to the BEIPC at a meeting in 2008 for future implementation of approved actions.

### **3.5 FUNDING FOR THE ENVIRONMENTAL CLEANUP AND INFRASTRUCTURE REVITALIZATION**

Funding for the human health element of the Superfund (CERCLA) remedy is currently provided by the EPA and the States on private and state lands. The Federal Land Management agencies are currently providing funding for human health and ecological system cleanup actions on federally managed lands. Funding for EPA to implement Superfund remedies in OU-2 and 3 is currently prioritized on implementation of the Human Health protection. Funding for the infrastructure revitalization activities is currently being addressed in the IRP process.

During the November 2007 BEIPC workshop, there was a great deal of discussion and concern expressed over the lack of funding sources in the future for implementation of the ecological remedy and implementation of the IRP. A number of concerns and recommendations were expressed involving funding and it was agreed that an overall financial strategy needed to be developed.

To address this issue in 2008, the Funding PFT will be reinstated to review and work on the IRP funding process and will explore potential sources of funding for ecological remedies and natural resource damage restoration activities. Federal funding of CERCLA activities on state and private lands outside of the EPA's appropriation for CERCLA is not allowed, but the PFT will investigate opportunities to fund these activities from other sources. The PFT will report accomplishments to the TLG and CCC. The first report will be available in the summer of 2008.