

Coeur d'Alene Basin 2005 Work Plan

INTRODUCTION

This plan for calendar year 2005 covers environmental cleanup and improvement activities in the Coeur d'Alene Basin planned by the Basin Environmental Improvement Project Commission (BEIPC) in accordance with its responsibilities as stated in the Memorandum of Agreement (dated August 2002). The work plan is the BEIPC's "game plan" for 2005 to implement the Record of Decision (ROD) for Operable Unit # 3 (OU-3) of the Bunker Hill Mining and Metallurgical Complex Superfund Site, (Coeur d'Alene Basin), and other activities involving the BEIPC. This plan has been prepared by the TLG in collaboration with the Executive Director with review by the Citizen Coordinating Council, and is based on their recommendations for activities and work to be performed in CY 2005. The organization of the work plan is a reflection of the funding sources for the work. This work plan for 2005 is organized as follows:

Part 1 – OU-3 ROD Work Funded with Superfund or Other Cleanup Monies

Part 2 – Work Funded with Clean Water Act (CWA) Grant Monies

Part 1 of this document includes work for 2005 under the 2002 OU-3 ROD for the Coeur d'Alene Basin to be funded with EPA Superfund monies or other cleanup monies. As previously defined in the 2004 one-year and the 2004-2008 five-year work plans, the bulk of EPA remedial actions (RA) funds will be allocated for remediation focused on the human health remedy. EPA remedial design (RD) funds will be used to prepare for remediation such as filling data gaps, preliminary design engineering, and technology development. This previous prioritization for EPA funding is reaffirmed in this proposed 2005 one-year work plan and the proposed 2005-2009 five-year work plan.

Part 2 of this document addresses the work to be accomplished in 2005 under the Clean Water Act grant program. In fiscal years (FY) 2002, 2003, and 2004, Congressional earmark funding under the Clean Water Act (CWA) was provided for the Basin to be used for "...research, investigation, experiments, training, demonstrations, surveys, and studies related to the causes, effects, extent, prevention, reduction, and elimination of pollution."

As mentioned above, the five-year plan outlines projects to be implemented over the next five years; however, it does not sequence these activities. This one-year plan continues the preliminary sequencing of project activities that will be needed to complete the work in the five-year plan. As stated in the five-year plan, "annual work plans will recommend specific actions within this plan with a suggested source of funds and estimated budgets."

Development Process for the 2005 Workplan:

In an effort to seek input from all TLG members and from other stakeholders (including the CCC) a process and schedule were developed to provide for the development and review of the 2005 Work Plan. A chronology of development and review of the Work Plan follows.

February 28, 2005 – The TLG held a meeting and decided to begin compiling sections of the draft Work Plan.

March 30, 2005 – The first draft of the 2005 Workplan was compiled and sent to the TLG. At that time the CCC was also provided a copy of the draft Workplan.

April 3, 2005 – During the weekly TLG conference call, the TLG developed a schedule for review of the draft among its membership, and the Executive Director, and CCC Chair.

April 5, 2005 – TLG held a meeting to discuss revision to the Plan.

April 13, 2005 – All TLG comments sent to the TLG Chair.

April 15, 2005 – Second draft finalized and sent out to TLG members and CCC.

April 20, 2005 – CCC meeting held to discuss and compile comments on second draft.

April 21, 2005 – CCC and TLG comments sent to TLG Chair.

April 25, 2005 – Final draft Workplan completed and sent to Executive Director.

May 11, 2005 – Final Workplan presented to BEIPC Board and approved (we hope).

PART 1 – OU-3 ROD WORK FUNDED WITH SUPERFUND OR OTHER CLEANUP MONIES

EPA can use its CERCLA funding to remediate environmental contamination on private, state, county, tribal or local government-owned properties. EPA's CERCLA funds cannot be used for cleanup of sites on public (Federal) land; the federal land management agencies are responsible for environmental cleanup and improvement on public lands. The Idaho Department of Environmental Quality (IDEQ) has also obtained funding from the State of Idaho that may be used for cleanup activities. The activities included in this section of the one-year plan do not include projects funded with Clean Water Act Grant monies which are addressed in Part 2 of this document.

The following is an overview of the projects and Table 1-1 is a summary of activities for 2005 work to be funded with Superfund or other cleanup monies. More detailed descriptions of the activities follow the summary table. One additional activity noted in Part 1 is the BEIPC review and subsequent actions to be taken concerning the National Academy of Sciences (NAS) Report recommendations as they may relate to the BEIPC. That activity is described at the end of Part 1 and is not funded by Superfund or other cleanup monies.

Table 1-1 shows estimated costs. For some activities, the cost is shown as "To Be Determined". Costs are uncertain for these activities for several reasons. Idaho's fiscal year starts in July, while the federal government's starts in October. State and federal budgets have not been finalized. Some work is in the design phase and firm cost estimates won't be available until designs are closer to completion.

Table 1-1. Summary of Activities Proposed for 2005 Work Funded with Superfund or Other Cleanup Monies

Proposed Activity	Scope	Objective	Lead Planning Agency	Estimated Cost
Big Creek Repository Management	Operate the Big Creek Repository.	Provide repository capacity for all cleanup activities that are to be conducted in 2005.	IDEQ/EPA	To be Determined
Development of additional Repositories	Siting and design of additional repositories. This includes public involvement and information dissemination. Currently the E. Mission Flats has been identified as a potential site that warrants further investigations.	Provide additional repository by 2006.	IDEQ	To be Determined
Basin Institutional Controls Program (ICP)	Develop a program to manage activities to protect remediated areas from recontamination and to protect human health and the environment in areas designated for cleanup actions where no remedy is yet in place.	By December 2006, establish an ICP in OU3.	IDEQ	Funded in 2004
Residential and Community Areas Sampling and Remediation	Conduct soil sampling and remediate contaminated properties in affected communities.	Remediate 300 to 400 properties, and perform sampling to support additional remediations in subsequent years.	IDEQ	\$7,500,000
Drinking Water Upgrades	Provide alternate water supplies for homes on private wells where drinking water is contaminated by heavy metals.	Provide drinking water connections or point-of-use treatment to affected properties.	IDEQ	\$225,000
Recreational Area Remediation	Continue to identify and implement recreational area remedial actions.	Provide additional safe recreation areas.	EPA/IDEQ	To be Determined
Mine and Mill Sites Design and Remediation	Prepare design and construction documents for priority mine and mill sites that address human health exposures from recreational use.	Complete design and begin construction at Constitution and Sisters sites in 2005. Identify interim actions at Golconda and Rex and implement these actions in 2005.	EPA/IDEQ	\$600,000 for remedial designs. Remedial Action Costs to be Determined

Proposed Activity	Scope	Objective	Lead Planning Agency	Estimated Cost
Canyon Creek Technology Evaluation	Complete Phase I Treatability Study and begin Phase II pilot studies of active and passive technologies. Implement MSE workplan for evaluation of passive treatment media in Canyon Creek	Evaluate technologies that will achieve the goals of the ROD and provide the most efficient and cost effective approach.	EPA/MSE/ORD	\$700,000
Development of Clean-Up Standard for Riparian Soils	Continue development of ecological lead cleanup goals for soil.	Determine cleanup goals for future actions in the upper and lower basin.	USFWS	Funded in 2003
Basin Environmental Monitoring	Continue implement the Basin-wide Environmental Monitoring Plan (BEMP). Implement remedial action effectiveness monitoring as appropriate	Conduct environmental monitoring to assess long-term status and trends to measure the effectiveness of remedial activities.	EPA with USGS, USFWS, IDEQ	\$300,000 To be Determined
Lower Basin Forum	Assist the TLG in reaching a common understanding of which issues are important in the lower basin, and in how these issues are related.	Await several other studies to be completed prior to providing the basis for the sequencing remedial action work in the lower basin.	CDA Tribe	To be Determined

1.1 Repositories

EPA and IDEQ working through cooperative agreements in 2005 will: 1) continue to evaluate potential additional repository sites and perform preliminary design activities throughout the Coeur d'Alene Basin; and 2) operate the Big Creek Repository during this field season.

The primary goal of the first effort is to identify an additional repository site that could be used in 2006 to support the cleanup program. An ancillary goal is to work with local communities and interested parties to identify a location that can be used to support the repository needs of a Basin Institutional Controls Program. It is anticipated that more repository capacity will be needed after 2006. Resolution of technical, economic, legal, and social issues is necessary before a repository can be constructed and these activities are included in the CY 2005 work plan.

Repository siting efforts in 2004 produced a potential viable site in the east Mission Flats area. The site has undergone preliminary technical evaluations, PFT and Basin Information Forum reviews and site visits by the greater TLG body. Additional evaluations including hydrologic analysis are on-going and will need to be completed prior to the site being presented to the BEIPC. Limited door-to-door outreach has been conducted with nearby residents, additional outreach efforts will be conducted following further investigations.

The second effort includes operation of the Big Creek Repository (BCR) during the 2005 field season. The old Sunshine tailings pond, acquired by the State of Idaho, is the site of the BCR. Upgrading and managing this facility is a critical component to continue clean up activities. It is anticipated that material quantities accepted at BCR may increase over quantities disposed of in the 2004 construction season. A technical memorandum (USACE 2004) has been produced containing the criteria used for selecting this site as a repository and the operating guidelines for the facility. Operations of the Big Creek Repository will continue in accordance with the operational parameters described in the technical memorandum. IDEQ and EPA are currently the lead for this work.

1.2 Institutional Controls

Development of an institutional controls program (ICP) is necessary to help protect remediated areas from recontamination to protect public health, support construction projects, and facilitate commerce. At areas designated for cleanup actions and where no remedy is yet in place, an ICP may be necessary as well to protect public health, to support construction projects, and to facilitate commerce in the interim. Issues left to resolve include, but are not limited to; the geographic extent in which the ICP will be implemented, repository locations for ICP waste material, how the development of the ICP will allow for local input and comment, and how governmental entities will coordinate the ICP. Active communication and planning between the public and local, state, and federal governments will continue in the Basin ICP process. IDEQ will continue to lead this effort.

1.3 Residential and Community Area Remediations

The 2005 work plan anticipates testing 700 to 800 properties to determine metals concentrations. Those properties that exceed the action levels will be eligible for remediation. The sampling and remediation data are entered into a database, which is used to plan which properties are remediated the following year. It is estimated that 300 to 400 properties will be remediated in 2005. IDEQ will continue to lead this effort with funding from EPA. IDEQ has a local firm under contract to advance this sampling and remediation work as soon as weather permits in the spring of 2005.

In addition, funds will be used to provide alternate drinking water sources for residential homes on metals-contaminated wells. Alternatives include provision of point-of-use treatment or connection to the closest municipal water supply.

1.4 Recreational Area Remediation

The five-year work plan identifies five Lower Basin recreational sites for remediation. Four of the sites are on lands managed by the USDA Forest Service and one site is on land owned/managed by the Idaho Department of Fish and Game (IDFG). EPA can use its CERCLA funding to remediate state, county or local government-owned recreational properties. EPA's CERCLA funds cannot be used for sites on public (Federal) land managed by the Forest Service and Bureau of Land Management; the federal land management agencies are responsible for environmental cleanup and improvement on public lands.

None of these Lower Basin recreational cleanup projects is planned for implementation in 2005. The Forest Service is working to acquire funding to implement remedial actions at its sites. The Forest Service project at Rainy Hill Boat Launch is the agency's highest priority and funding will not be available for this project until 2007 at the earliest.

IDFG's Anderson Lake Boat Launch is immediately upstream of the Idaho Highway 97 Bridge across the Coeur d'Alene River. The Idaho Transportation Department (ITD) is in the final design phase for replacement of this bridge. The new bridge will be considerably wider and bridge access will be adjusted accordingly which may in turn impact the Anderson Lake Boat Launch access point. Accordingly, EPA is deferring any decisions regarding additional remedial action work at the Anderson Lake Boat Launch so that any additional cleanup efforts can be coordinated with the bridge replacement. EPA arranged a visit by the recreational area project focus team (PFT) to the site in March 2004 with ITD representatives and EPA will continue to stay abreast of ITD's plans to the extent that this activity may influence the Superfund remedy.

Results of both the AVISTA and Idaho Department of Parks and Recreation Lower Basin recreational use surveys will be available in summer 2005. The PFT will review the results of these two surveys and make an assessment of additional recreational sites that may be candidates for remedial action.

1.5 Mine and Mill Sites Design and Remediation

Four sites were identified in the five-year plan as priorities and have been selected for work in 2005. The proposed work includes finalization of remedial designs and beginning of construction for the following sites:

- The Upper and Lower Constitution (Remedial action construction planned summer 2005)
- The Golconda (Interim action construction planned summer 2005)
- The Rex (Potential Interim action construction summer 2005)
- Sisters Site (Remedial action construction planned summer 2005)

The design work for these sites will be funded in 2005 with EPA pipeline funds and some funding by BLM at the Constitution site. Remedial action funding will likely be provided by EPA for the Constitution and Rex sites. Remedial action funding for the Sisters and Golconda interim action may be provided by the State of Idaho.

1.6 Canyon Creek Technology Evaluation

The five-year plan calls for water treatment technology assessments and pilot tests in Canyon Creek (a major zinc loader to the S.F. Coeur d'Alene River). This work has been funded by EPA during 2003 and 2004. The 2005 work plan recommends the continuation of this assessment including pilot studies that build upon the Phase I treatability study results as well as further evaluation of passive systems that could be used in conjunction with active technologies to address the goals of the ROD.

1.7 Development of Clean-up Standard for Riparian Soils

The five-year plan identifies the need to continue the development of a clean up goal for lead in riparian soil for use in remedial action planning, design and implementation. The U.S. Fish and Wildlife Service implemented this process through an interagency funding agreement with EPA. During 2005 the TLG recommends that this work continue.

1.8 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 2005 with EPA funding. Establishment of a basin-wide environmental monitoring plan is required under the OU-3 ROD. The monitoring program is critical to the successful implementation and evaluation of the Selected Remedy. EPA worked with the monitoring project focus team (PFT) to develop the Basin-wide environmental monitoring program. The Monitoring PFT, TLG and key stakeholder agencies concurred that the BEMP is appropriate given available funding 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. In February 2004, the BEIPC approved implementation of the BEMP. BEMP monitoring activities were initiated in 2004.

Environmental monitoring data collected under the OU-3 BEMP (and for OU2) will be managed in a centralized database repository which was established in 2004. EPA has established an instance of STORET (www.storet.org) that includes historical site data and has the capacity for future data. STORET is national EPA's web-based repository for historic and future water quality, biological and physical data. The STORET data management system is used by state, tribal, EPA and other federal agencies, universities, and citizens to access the nation's environmental monitoring data. STORET was selected as the data management system for the BEMP data because it is EPA's environmental data system; it is a non-proprietary system and is a cost-effective way to manage the considerable site data. Currently the results from site surface water, soil and sediment sampling are included on www.storet.org; human health-related data will not be included in this database.

Remedial Action Effectiveness Monitoring - Action-specific effectiveness monitoring will 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 will be 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, will incorporate similar monitoring hypotheses as those included in the BEMP. The adaptive management approach will maximize the utility of effectiveness monitoring data through comparison of results to expectations.

Remedial action effectiveness monitoring in OU-3 will be included in the designs and implementation plans for ecological-related remedial actions. In 2004, remedial action effectiveness monitoring will be implemented at the human health-related remedial actions recently implemented at the East of Rose Lake Boat Launch and Highway 3/Trail of the Coeur d'Alenes Crossing site.

1.9 Lower Basin Forum

In the 2004 work plan, the TLG noted that a better understanding of the complex and dynamic system in the Lower Basin and sound answers to these questions were necessary before a sequence of remedial actions could be recommended. During 2004, the Lower Basin Forum (LBF) was formed to provide a context for discussion of Lower Basin issues. In 2005, the TLG intends to continue work through the Lower Basin Forum and will keep abreast of findings of the relevant Clean Water Grant projects described in Part 2 of this work plan.

Over the last two years this forum has identified several questions which remained unanswered, and therefore, prevented the group from accurately defining the sequence in which projects should be implemented. Since then, several projects which aimed to answer these questions were proposed by the Lower Basin Forum, recommended by the TLG, and approved by the BEIPC.

This year the LBF will continue to track the work product of the following projects: 1) Stream Stabilization Project, 2) Fish Inventory, 3) Lead Level Clean-up Standard, 4) River Model, and

5) Lake Response Model; in an effort to further understand the dynamics of the lower basin.

1.10 Review of National Academy of Science Findings

In 2003, the National Academy of Science (NAS) began a study of EPA's assessment and cleanup decisions in the Coeur d'Alene Basin. The draft prepublication report is currently scheduled to be released in mid-July and the final report is scheduled to be published in October 2005. After the final report is published, the TLG and BEIPC will be reviewing any Coeur d'Alene Basin related recommendations from the report and determining an appropriate course of action for the BEIPC.

PART 2 – WORK FUNDED WITH CLEAN WATER ACT GRANT MONIES

INTRODUCTION

CWA funds cannot be spent to implement the ROD. They are to be 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 has, over the last three years, approved a number of projects to be funded under the CWA. A portion of these projects are designed to support Lake management activities.

The first round of CWA funds were available in FY2002 and obtained by IDEQ (acting as fiscal agent for the BEIPC) in the summer of 2003. Those projects started in 2003 are nearing completion. The next round of funding for FY2003 was available to the BEIPC during the summer of 2004. These projects are at various stages of implementation. Finally, the most recent round of CWA funds (FY2004) are currently available and projects have been approved by the BEIPC for submittal to EPA. When funded, these projects will commence in the summer of 2005.

This section of the Workplan outlines each year's activities of all ongoing projects and those slated to begin after EPA approves the most recent FY 2004 grant request. Table 2-1 is a summary of all CWA funded work which will occur in 2005.

Table 2-1. Summary of Activities Proposed for 2005 Work Funded with CWA Monies

Fiscal	Sub-grant	Sub-grant title	Sub-grantee	Objective	Calendar Year 2005 Work
Year	Code				
2002	CWA1	Three-Year Lake Study	CDA Tribe/USGS/USFWS	Monitoring nutrients, metals, biological conditions in CDA Lake.	Continue data gathering. Continue data compilation and evaluation.
2002	CWA2	Bank Stabilization	IDEQ	Evaluate bank stabilization methods.	Complete revegetation. Report on evaluation.
2002	CWA3	Lake Education Program	CDA Tribe & KSSWCD	Educate users on lake stewardship and water quality concerns.	Continue to present "Our Gem". Finalize Lake Outreach Map. Summarize perceptions of effectiveness. Develop funding proposal for continued outreach.
2002	CWA4	Mullan Inflow/Infiltration	South Fork. Sewer District	Metal and nutrient reduction. Infrastructure improvement.	Remove monitoring wells. Continue sampling and analysis of wastewater treatment plant effluent. Submit report.
2003	CW01	Woodland Park Groundwater Quality Monitoring	IDEQ	Monitor groundwater quality and potential metal loading from contaminated groundwater reaching surface water in Canyon Creek	Continue data collection. Compile data.
2003	CW02	Meyer Creek Flood Assessment	IDEQ	Conduct a flooding/recontamination assessment for the buried surface water diversion for Meyer Creek	Continue to collect technical and design parameters. Prepare preliminary assessment document for Basin Commission and City of Osburn.
2003	CW03	Upper East Fk. Ninemile Water Quality Evaluation	INL	Monitoring surface and groundwater quality in Ninemile Creek and further evaluation and testing of water treatment pilot project at the success Mine	Inject air into apatite at Success, and evaluate effectiveness in breaking up clogged media. Analyze apatite at Success to define chemistry and microbiology. Perform quarterly water sampling in EFNMC for physical, chemical, and biological characteristics to determine seasonal variations. Write final report.
2003	CW04	Metal & Nutrient Removal Pilot 2 Page WWTP	South Fork Sewer District	Evaluate 2 emerging water treatment technologies to remove metals and nutrients	Issue draft report, revise draft, and issue final report.
2003	CW05	East Fork Pine Creek Revegetation Pilot	BLM	Evaluate revegetation methods	Plant vegetation in the spring, and characterize sites for fall planting.
2003	CW06	Inventory and Evaluation of Private Lands for Potential Restoration of Wetland Habitats	USFWS	Inventory and evaluation of private lands for potential restoration of wetland habitats	Continue inventory, survey landowner interest in participation, analyze samples, and prepare preliminary designs.
2003	CW07	Monitoring Fish Responses to Bank Stabilization in the Coeur d'Alene River	USFWS	Monitoring fish response to bank stabilization projects on the CDA River	Select study design and begin monitoring.

Fiscal	Sub-grant	Sub-grant title	Sub-grantee	Objective	Calendar Year 2005 Work
Year	Code				
2003	CW08	Computer models to assess sediment transport and bed evolution in the Lower Coeur d'Alene River – Phase 1	USGS	The goal of this project is to 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 Coeur d'Alene 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 Coeur d'Alene Lake. These models would be capable of simulating the hydraulic and sediment transport characteristics of the river over a wide range of streamflow 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. Phase 1 is the 1-dimensional model.	Calibrate 1-dimensional model. Select flow and transport scenarios, and run them for final report.
2003	CW09	Simulation Model to Evaluate Coeur d'Alene Lake's Response to Watershed Remediation Phase 1	USGS	The goal of this project is to provide the entities responsible for management of Coeur d'Alene Lake with a sophisticated computer modeling system with which to simulate the lake's responses to a wide range of remediation strategies to be implemented under the Record of Decision and the Lake Management Plan. The project objective is to utilize existing, or to develop as needed, physical, chemical, and biological data in an existing suite of well-proven one, two, and three-dimensional lake models capable of simulating the limnological complexity of Coeur d'Alene Lake.	Complete and test 1-dimensional model.
2003	CW10	North Fork Coeur d'Alene River -Hydrologic and Sediment Study	IDEQ	Hydrologic and sediment yield study to support project effectiveness of sediment TMDL implementation plan	Summarize existing physical and biological knowledge. Begin preliminary watershed assessment.
2003	CW11	Mica Bay Nutrient Reduction Project Phase 1	IDEQ	Reduce sediment and nutrient loading in Mica Bay and Coeur d'Alene Lake by constructing wetlands.	Review case studies, survey cross-sections and topography, develop and assess alternatives, and report findings to the BEIPC
2003	CW12	Lower Lakes Aquatic Vegetation Survey	CDA Tribe	Determine aquatic vegetation biomass and nutrient content to estimate potential nutrient release to lakes and develop harvest plan.	Repeat grid sampling, collect available information on nutrient release research, and prepare completion report.
2003	CW13	Canyon Creek Groundwater Metal Source Characterization	INL	Provide key information about the mechanisms and rates of depletion of the metals in the two major source materials, reworked tailings and alluvium, as groundwater withdrawn and treated.	Complete data compilation, finalize and test sequential extraction method complete sequential extractions, conduct leachability and mobility tests, and prepare report.
2003	CW14	Bank Stabilization Project Monitoring Pilot Study	IDEQ	Continue monitoring and performance evaluation of three Lower Coeur d'Alene River bank stabilization project for 2005 – 2007.	Monitor effectiveness of implemented treatments.
2004	TASK 1	Mica Bay Nutrient Reduction Project Phase 2	IDEQ	Reduce sediment and nutrient loading in Mica Bay and Coeur d'Alene Lake by constructing wetlands.	Prepare design based on feasibility study. If time permits, begin construction.

Fiscal	Sub-grant	Sub-grant title	Sub-grantee	Objective	Calendar Year 2005 Work
Year	Code				
2004	TASK 2	Additional Water-Quality Sampling in Selected Nearshore Areas of Southern Coeur d'Alene Lake	CDA Tribe	Sample additional near-shore sites in the Lake's southern portion better define the extent and possible source of elevated cadmium, lead, and zinc concentrations in nearshore and pelagic locations south of Harrison and north of Chatcolet Lake.	Collect samples, continue compilation and evaluation of data, and begin preparation or report sections.
2004	TASK 3	Plummer Wastewater Treatment Pilot	City of Plummer	Construct and study the effectiveness of a pilot cascading overland flow wetland to determine if future construction of a wastewater treatment facility discharging to a wetland is feasible in the CDA Basin	Award construction contract, complete construction, and begin monitoring and testing.
2004	TASK 4	Plummer Creek Watershed Nutrient Load Assessment, Modeling and Management Plan Development	CDA Tribe	Develop a Watershed Nutrient Management Plan which will include appropriate and specific point nutrient source control efforts for the Plummer Creek watershed.	Identify specific monitoring sites, prepare Quality Assurance Project Plan, and collect field data.
2004	TASK 5	Pinehurst Flood Impact Study	IDEQ	Develop stream channel and drainage infrastructure techniques to control and mitigate water pollution and protect property from recontamination and flood impacts	Conduct assessment of sediments for heavy metals, prepare design report.
2004	TASK 6	Silver Crescent Mine and Mill Complex Habitat Restoration	USFS	Construct a demonstration project to re-establish a fully functional resident fishery and improvement of habitat to enable successful migration at a completed mine and mill site cleanup and restoration	Complete design and contract for construction.
2004	TASK 7	Canyon Creek Treatability Study	IDEQ	Develop an alkaline precipitation design to treat water that has a minimum possible capital and operating costs although it may not completely satisfy the goals of the ROD	Begin design work for completion of design in 2006.
2004	TASK 8	South Fork Sewer District Toxicity Reduction	South Fork Sewer District	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	Perform baseline toxicity testing, and review potential sources of toxicity.
2004	TASK 9	Simulation Model to Evaluate Coeur d'Alene Lake's Response to Watershed Remediation—Phase 2	USGS	Provide a sophisticated computer modeling system with which to simulate the Lake's response to a wide range of remediation strategies to be implemented under the ROD and the LMP.	Coordinate with University of Western Australia researchers, and provide them with bathymetry, hydrology, loading, meteorological, and limnological data. Continue bioassay work. Perform calibration experiment
2004	TASK 10	Computer Models to Assess Sediment Transport and Bed Evolution in the Lower Coeur d'Alene River - Phase 2	USGS	Continue and complete the development of modeling tools for use in evaluating future proposed projects designed to minimize the transport of metal contaminated sediments in the Lower Coeur d'Alene River.	Develop 3-dimensional model for 1500 meter reach near Dudley or Rose Lake.
2004	TASK 11	Assessment of the Economics and Effectiveness of Alluvium Sorting as a Mine Waste Removal Strategy at the Project Implementation Level	IDEQ	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 the metals content of the three-quarter inch minus fraction of the bed load sediment downstream.	Implement sorting, evaluate costs, effects on volumes needing disposal, and savings in repository costs. Monitor gravels pre- and post-construction.

Fiscal	Sub-grant	Sub-grant title	Sub-grantee	Objective	Calendar Year 2005 Work
Year	Code				
2004	TASK 12	Coeur d'Alene Lake Management Plan Implementation	IDEQ/CDA Tribe	Conduct an extensive evaluation of all activities within one mile of the 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.	Meet with entities that manage or regulate land use, discuss accomplishments, and determine what activities are planned.

2.1 Fiscal Year 2002 Grants

Lake Monitoring Water Quality Studies

Sub-grant amount: \$515,000

Sub-grantee: CDA Tribe, USGS

Expenditures as of 12/31/04: \$225,000

Estimated % complete: 30%

Description of work to be performed in calendar year 2005: Collect limnological samples at five pelagic stations during late January, early April, mid-May, mid-June, and mid-July, late August, mid-October, and early December. Collect limnological samples at 12 nearshore stations in early April, mid-June, and late August. Publish 2004 water year data in USGS Annual Water-Data Report to be issued in April, 2005. Continue compilation and evaluation of limnological data in conjunction with riverine inflow/outflow water-quality data collected as part of EPA's BEMP. Begin writing sections for USGS Science Investigations Report that will evaluate limnological conditions in lake for water years 2004-05.

Ecological Monitoring of CDA Lake

Sub-grant amount: \$160,000

Sub-grantee: USFWS

Expenditures as of 12/31/04: \$47,089

Estimated % complete: 50%

Description of work to be performed in calendar year 2005 – Preliminary findings regarding results from sediment and waterfowl blood and fecal samples collected in 2004 were presented at the February 15, 2005 Basin Information Forum. A final report on the health of waterfowl utilizing Lake Coeur d'Alene as it relates to lead exposure is currently being completed.

Bullhead collection and processing is scheduled to take place May 2005. Statistical analysis and report writing will be completed following receipt of metals analysis from the contract laboratory.

Streambank Stabilization

Sub-grant amount: \$445,000

Sub-grantee: IDEQ

Expenditures as of 12/31/04: \$257,449

Estimated % complete: 40%

Description of work to be performed in calendar year 2005 - The purpose of the project is to construct and monitor the effectiveness of several techniques to protect the Coeur d'Alene River banks from boat wake erosive forces. Five treatments that emphasize bioengineering approaches are being installed along both banks of an 1800-foot-long river reach 1.5 miles upstream from Medimont on privately-owned and State-owned land. Earthwork was conducted during the

period when the level of Coeur d'Alene Lake, and thus the lower Coeur d'Alene River, is being lowered so as to avoid working under water. Grading to achieve gentler slopes was done only where woody vegetation is generally absent. Vegetation will be planted in the spring and will be irrigated during the summer as warranted. The site was surveyed prior to construction and will be monitored in 2005 to document changes. Monitoring activities will include measuring cross-sections, bathymetry, and erosion pins and photo documentation.

The BLM has contributed an additional \$15,540 to this project.

Lake Education and Outreach Program

Sub-grant amount: \$80,000

Sub-grantee: CDA Tribe (\$40,000) & KSSWCD (Kootenai-Shoshone Soil & Water Conservation District) (\$10,000) \$30,000 held by IDEQ for further work

Expenditures as of 12/31/04: \$27,347

Estimate % complete: 55%

Description of work to be performed in calendar year 2005 - KSSWCD and the Tribe will continue to present the power-point presentation entitled "Our Gem" to area schools, community groups, homeowner associations, agencies and other interested parties.

In addition, the Tribe and KSSWCD will finalize the Lake Education Outreach map and distribute this map to local area vendors and at key boat ramps throughout the summer of 2005.

Finally, the Tribe and KSSWCD will write a brief summary of their perception of the effectiveness of this 2-year public education outreach and develop a funding proposal for further lake education public outreach.

Mullan Inflow and Infiltration Assessment

Sub-grant amount: \$800,000.00

Sub-grantee: South Fork of the Coeur d'Alene River Sewer District

Expenditures as of 12/31/04: \$746,223

Estimated % complete: 94%

Description of work to be performed in calendar year 2005 - No further construction is planned for this project. The remainder of the budget has been reserved for the following activities:

- Removing the groundwater monitoring wells installed in 2003.
- Sampling and analyzing influent and effluent wastewater at the treatment plant for metals levels.
- Analyzing metals loading trends to the wastewater treatment plant and verifying impacts from the construction portion of the project.
- Analyzing influent flow trends to the wastewater treatment plant and verifying impacts from the construction portion of the project.
- Responding to agency comments from the draft summary report (issued November 2004) and issuing a final report.

2.2 Fiscal Year 2003 Grants

Woodland Park Groundwater Quality Monitoring

Sub-grant amount: \$35,948

Sub-grantee: IDEQ

Expenditures as of 12/31/04: \$20,610

Estimated % complete: 70%

Description of work to be performed in calendar year 2005 - In January of 2005, two wells will be sampled for dissolved metals (Pb, Cd, As, Zn, Ca, Mg) to determine if winter conditions are significantly different from the other quarters. In April, 30 wells will be sampled for dissolved metals. The water will be sampled using peristaltic pumps and dedicated tubing. Field parameters including pH, conductivity, and water temperature will be recorded. The water samples will then be submitted to SVL Analytical for analysis.

The data collected in the last two quarters of 2004 and the first two quarters of 2005 will be compiled and used to make responsible treatment option decisions. The project will be completed by June of 2005.

Meyer Creek Flood Control

Sub-grant amount: \$31,521

Sub-grantee: IDEQ

Expenditures as of 12/31/04: \$6,673

Estimated % complete: 24%

Description of work to be performed in calendar year 2005 – A field investigation is underway to collect technical and design parameters. Elevation survey of the zone of potential impact will be completed. Conditions of the existing Meyer Creek waterway will be assessed and modeling of flood flows will be completed. Sediment and water samples will be collected. A preliminary assessment document will be delivered to the BEIPC and the City of Osburn. If desired, TerraGraphics staff will meet with Osburn city representatives and representatives from the Basin Commission to discuss the preliminary assessment. Finally, a Findings and Recommendations report will be delivered detailing the complete findings of the study.

Upper East Fk. Ninemile Water Quality Evaluation

Sub-grant amount: \$193,652

Expenditures as of 12/31/04: \$95,000

Estimated % Complete: 45%

Description of work to be performed in calendar year 2005 –
Success Passive Water Treatment

- Injecting air into the Apatite to break up clogging in the media. This has showed temporary success at the Nevada Stewart site.
- Analyze Apatite to determine forms of metal precipitates and where the reactions occur. Apatite samples will be collected and taken to the INL for analysis using XRF, Powder X-ray Diffraction, Electron Microscopy, standard metal analysis, and microbial assay. This will provide information on the types of precipitates that have formed, where they have formed, the types of microbial populations in the system, and general chemistry to determine what can be done to improve the process.
- Based on the results of the tracer study completed in CY 2004, Arcadis will choose whether this location is a good spot to test nutrient addition to facilitate in situ metal reduction and precipitation. If the process is applied here, Arcadis will inject a nutrient carbon source and the INL will evaluate the success of the process. If Arcadis chooses not to inject nutrients at this location, the funding could be used to install new media in the Apatite II barriers.

East Fork Ninemile Creek Monitoring

This project consists of sampling of physical, chemical and biological characteristics over about a 3-4 mile stretch of the East Fork of Ninemile Creek to determine seasonal changes in metal loading, where the loadings occur at, and the forms the metals are in will be determined. Sampling will occur quarterly with two sample events occurring at the beginning and end of the spring runoff event.

Write Final Report

Metal & Nutrient Removal Pilot at Page WWTP

Sub-grant amount: \$179,763

Sub-grantee: South Fork of the Coeur d'Alene River Sewer District

Expenditures as of 12/31/04: \$171,850

Estimated % complete: 94%

Description of work to be performed in calendar year 2005 - No further pilot testing is planned for this project. The remainder of the budget has been reserved for the following activities:

- Issue a draft summary report for agency review – March/April 2005.
- Respond to agency comments generated during review of the draft summary report.
- Issue a final summary report.

East Fork Pine Creek Revegetation Pilot Project

Sub-grant amount: \$61,624

Sub-grantee: BLM

Expenditures as of 12/31/04: \$ 61,218

Estimated % complete: 10 %

Description of work to be performed in calendar year 2005 - Spring planting will take place in late April-early May, 2005. Field measurements, including stream flow measurements and surveying channel cross-sections, for characterization of other planting sites within the project

area will be collected throughout the summer. Additional planting will resume in the fall of 2005.

Inventory and Evaluation of Private Lands for Potential Restoration of Wetland Habitats

Sub-grant amount: \$152,406

Sub-grantee: USFWS

Expenditures as of 12/31/04: \$0

Estimated % complete: 0%

Description of work to be performed in calendar year 2005 – USFWS/Ducks Unlimited (DU) contracting for work was completed in early 2005. The DU lead investigator has begun land ownership mapping. The proposed survey will inventory private wetlands and associated agricultural lands to determine: (1) their value as wetland habitat, (2) what modifications necessary to restore to optimal habitat, (3) the landowner acceptance of wetland restoration on the property, and (4) the level of lead contamination on the property. 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. Consistent with the provisions of the CWA, USFWS will investigate the extent of contamination relative to the known level of toxic effects to waterfowl in the Coeur d'Alene Basin. Soil/sediment samples will be collected with stainless steel corers with plastic liners. The majority of samples will be removed from liners and analyzed for metals of concern on site with a portable X-ray fluorescence analyzer (XRF) following EPA Method 6200. It is anticipated that splits of 10%-20% of recorded XRF samples will be collected in glass jars or butyrate tubes and sent to a contract lab that meets or exceeds USFWS' QA/QC requirements for verification analysis following chain of custody procedures. Designs for restoration of existing wetlands or creation of new wetlands will be prepared for those properties that have low toxicity to waterfowl and that provide or could provide high quality wetland function.

Monitoring Fish Responses to Bank Stabilization in the Coeur d'Alene River

Sub-grant amount: \$107,550

Sub-grantee: USFWS

Expenditures as of 12/31/04: \$2,606

Estimated % complete: 2%

Description of work to be performed in calendar year 2005 –Bank stabilization efforts will likely be proposed to treat more than 20 miles of the Coeur d'Alene River banks in coming years. Resource management agencies are being asked to evaluate the impact of a rapidly increasing number of bank stabilization project proposals for the Coeur d'Alene River. This monitoring effort will (1) establish baseline fish community structures, (2) evaluate variability in fish community structures over time, (3) evaluate the effect of existing bank stabilization projects on fish communities, (4) determine appropriate monitoring strategies for future bank stabilization projects, (5) and recommend bank stabilization techniques that have positive effects or minimal adverse effects on fish communities.

A University of Idaho graduate student has been selected and potential study designs are being

evaluated and discussed. Study areas will include larger areas with relatively few implemented bank stabilization projects, areas potentially affected by implemented bank stabilization projects, and areas with proposed bank stabilization projects. The graduate student will help evaluate fish species, age structure, and relative abundance within these study areas using standard survey techniques such as electrofishing and/or snorkeling. Methodology is currently being designed to meet the goals of the project. Monitoring will begin summer 2005.

Computer Models to Assess Sediment Transport and Bed Evolution in the Lower Coeur d'Alene River Phase 1

Sub-grant amount: Phase 1 - \$193,706

Sub-grantee: USGS

Expenditures as of 12/31/04: \$40,000

Estimated % complete: 30%

Description of work to be performed in calendar year 2005 - One-dimensional sediment model will be calibrated. Various flow and sediment transport scenarios will be run for final report.

Simulation Model to Evaluate Coeur d'Alene Lake's Response to Watershed Remediation-Phase 1

Sub-grant amount: Phase 1 - \$190,406

Sub-grantee: USGS

Expenditures as of 12/31/04: \$35,500

Estimated % complete: 30%

Description of work to be performed in calendar year 2005 - Assemble and provide data bases to Univ. of Western Australia model team; data bases relate to lake bathymetry, inflow/outflow hydrology, inflow/outflow constituent loads and concentrations, meteorological forces, and limnological variables through out water column. Continue with USGS National Research Program bioassay experiments to define zinc toxicity equations for lake phytoplankton. Continue USGS Geologic Discipline study to develop benthic flux equations for metals and nutrients. During last two weeks of May, conduct extensive field experiment on Coeur d'Alene Lake to provide calibration data for 3-D hydrodynamic model, ELCOM. Complete development of 1-D model, DYRESM, late in 2005. Using calibration data sets derived from limnological sampling program, test DYRESM's ability to simulate interaction of physical, chemical, and biological processes.

North Fork Coeur d'Alene River Hydrologic & Sediment Study

Sub-grant amount: \$165,810

Sub-grantee: IDEQ

Expenditures as of 12/31/04: \$0

Estimated % complete: 5%

Purpose of Work - To provide a watershed assessment in document form that will effectively

aid and support the future development of a sediment TMDL Implementation Plan for the North Fork Coeur d'Alene River sub-basin (a plan that will be developed by a Watershed Advisory Group).

Description of work to be performed in calendar year 2005 – A contract proposal will be prepared and a solicitation completed in March along with the formation of a North Fork Technical Advisory Team (TAT). A contractor will be selected by late May. Between June and through September, the Contractor will collect existing, known information about the North Fork sub-basin from agencies such as the Forest Service, Idaho Fish & Game, University of Idaho, and IDEQ. By October, the Contractor will produce a draft summary report of existing documented knowledge (or what is confidently known) about physical and biological conditions, and recent watershed improvement projects. This draft summary will be reviewed by IDEQ and the TAT.

An interagency agreement will be developed between IDEQ and the Forest Service for \$10,000 for Forest Service resources needed in preparation and collection of hardcopy and electronic information to pass on to the Contractor.

For the remaining of CY 2005, the Contractor will begin in-office work to perform an initial watershed assessment of existing conditions, and possible causes of the observed biological impairment in sub-basin streams.

Mica Bay Nutrient Reduction Project – Phase 1

Sub-grant amount: \$20,000

Sub-grantee: IDEQ

Expenditures as of 12/31/04: \$0

Estimated % complete: 0%

Description of work to be performed in calendar year 2005 –Case studies will be investigated through a review of available literature on constructed wetlands for nutrient removal. Mica Creek and the adjacent area will be surveyed for stream cross-sections, cursory adjacent topography, and local water elevations. Construction alternatives will be considered based on the survey results and site conditions, and alternatives will be assessed for their ability to meet sediment reduction goals, cost, and constructability. A final report of Findings and Recommendations will be delivered to the Basin Commission and the TLG. Copies will be provided to IDEQ and the land owner.

Lower Lakes Aquatic Vegetation Survey

Sub-grant amount: \$143,275

Sub-grantee: CDA Tribe

Expenditures to as of 12/31/04: \$32,983

Estimated % complete: 30%

Description of work to be performed in calendar year 2005 -

Survey transects: The transect survey initiated in 2004 will be repeated during the mid-July to

mid-August period of 2005. The quantitative sampling is a modification of a "line intercept" method where submersed aquatic plant samples are collected along a fixed line which is oriented from a start point on shore by a compass heading. Along this line samples will be collected using SCUBA techniques at fixed intervals using a "quadrat"; a fixed-corner, three-sided frame that defines a standard sampling area. Collected samples will be sorted by species and sub-samples delivered to a contract laboratory for biomass and nutrient content determinations.

Grid sampling: The grid point inspection initiated in 2004 will be repeated following the transect surveying (i.e. mid August to mid-September, 2005). Using GPS equipment, each grid point to be inspected will be located and one toss made with a weighted "rake-on-a-rope". Aquatic plant species captured by the rake at each sample site will be recorded.

Nutrient release research: A literature search and communications with university researchers and others will be performed to collect available information on nutrient release from aquatic plant species.

Prepare project completion report: This will include a summary of materials and methods, summary of plant biomass data for each species collected with year-to-year variations, summary of grid node survey findings, calculation of release of phosphorus and nitrogen from existing population as lake-wide loadings, appropriate statistical analyses, discussion of the infestation of Eurasian watermilfoil that was found and overall conclusions.

Canyon Creek Groundwater Metal Source Characterization

Sub-grant amount: \$190,253

Sub-grantee: INL

Expenditures as of 12/31/04: \$106,486

Estimated % complete: 25%

Description of work to be performed in calendar year 2005 - Complete compilation of water chemistry data for Canyon Creek. Data will be used to help interpret sequential extraction data and to establish range of conditions for leachability tests. Finalize sequential extraction method following review of standard and commonly used sequential extraction procedures – tailored to Canyon Creek sample properties. Establish protocol and analytical methods for extracted metals. Specific target metals are zinc, cadmium and lead, although a large number of additional metals will be reported as a consequence of the analytical method (inductively coupled plasma – mass spectrometry).

Test sequential extraction method on non-critical sub-samples. Complete sequential extraction procedures. Collect sub-samples for selected spectroscopic analysis that will be used to verify and interpret results from sequential extractions. (Spectroscopic analysis will include synchrotron-based X-ray absorption for metal identification and oxidation state.)

Conduct metal leachability tests in flow-through columns. Range of solution chemical conditions to be determined from analysis of Canyon Creek water chemistry data. Conduct one metal mobility test in a flow-through column in order to demonstrate how speciation and leachability test data are applied in model simulations. Report on: metal speciation, metal leachability and practical prediction of metal mobility in a packed sediment column.

Bank Stabilization Project Monitoring Study

Sub-grant amount: \$122,386

Sub-grantee: IDEQ

Expenditures as of 12/31/04: \$0

Estimated % complete: 0%

Description of the Work to be performed in 2005. This project provides additional monitoring for the stream bank stabilization project funded from the FY 2002 grant. Initial monitoring, scheduled for 2005, will come from the FY 2002 grant. This grant will provide additional monitoring in subsequent years.

2.3 Fiscal Year 2004 Grant

Mica Bay Nutrient Reduction Project – Phase 2

Sub- grant amount: \$121,000

Sub-grantee: IDEQ

Description of work to be performed in calendar year 2005 – A nutrient reduction project design will be started once the results of the first phase of this project are available. The design will address the erodibility of the soils in the lower Mica Creek watershed, and will avoid adding sediment to Mica Bay. Implementation will likely be in 2006.

Additional Water Quality Sampling in Selected Near-Shore Areas of Southern Lake Coeur d'Alene

Sub-grant amount: \$13,000

Sub-grantee: Coeur d'Alene Tribe

Description of the Work to be performed in 2005 - This project adds sampling at six nearshore stations to the lake monitoring work originally funded with FY 2002 Clean Water Act grant funds.

Plummer Wastewater Treatment Pilot

Sub-grant amount: \$129,900

Sub-grantee: City of Plummer, Idaho

Description of work to be performed in calendar year 2005 - To date the City has paid for engineering to complete preliminary plans and will continue with some expense for engineering and design work to keep the project on schedule. The City has also procured wetland plants which are being grown for the project. These costs are the burden of the City and we understand that they will not be reimbursed.

The City will meet in April with EPA, IDEQ and Tribal representatives to discuss the City's draft facility plan. A revision of the facility plan will follow and be submitted to IDEQ for

acceptance. This plan will include the wetland pilot study.

Once award is made the City will commence work as outlined below with the project funds. This time line is using an anticipated date of July 1st for funds. We expect to have the design, plans and specifications substantially completed and ready for final approval at July 14th Council meeting. We will seek quotes for the construction to be awarded at the August 11th Council meeting.

We plan to begin construction immediately and construction of the pilot site should be complete by the end of September. The work to be completed during the remainder of the year will consist of monitoring and testing.

Plummer Creek Watershed Nutrient Load Assessment, Modeling and Management Plan Development

Sub-grant amount: \$165,700

Sub-grantee: CDA Tribe

Description of work to be performed in calendar year 2005 - The sub-grant agreement for this project is expected to be signed effective during June or July 2005 and actual field data collection will begin in October, 2005. Monitoring will continue for two full water years, or through September 2007. Prior to the initiation of monitoring, final plans will be developed for the monitoring work, including identification of specific monitoring sites, and a Quality Assurance Project Plan will be developed.

Field Monitoring Strategy: Field water quality and constituent concentration data will be collected at key points, including potential pollutant sources in the Plummer Creek watershed. Approximately 18 samples will be collected on a regular basis (approximately bi-weekly March-April, and monthly for the remainder of the year) from each point for two full water years starting Oct. 1, 2005. In addition, point source discharges (i.e. the Plummer City Wastewater Treatment Plant outfall) will be monitored. The following field data will be collected: instantaneous streamflow, specific conductivity, dissolved oxygen (mg/L and % saturation), pH and water and air temperatures. Samples will also be collected for laboratory analysis of phosphorus (total and dissolved “ortho”), nitrogen (nitrate+nitrite, ammonia, total Kjeldahl), hardness, total suspended solids and fecal Coliform bacteria.

Pinehurst Flood Impact Study

Sub-grant amount: \$330,000

Sub-grantee: IDEQ

Description of work to be performed in calendar year 2005 – Conduct an assessment to sample and assess sediments for heavy metals and their geographic distribution within the surface water collection and conveyance system. Existing soil, riparian plant, and wetland plant assessments would occur for Little Pine Creek and its wetland. Flood and contamination risk will be analyzed and mapped. Refinement to this proposal’s project scopes will be presented to the PFT for their considerations.

Utilizing assessment information, prepare a design report for Little Pine Creek Pilot Project that will include hydrology and hydraulic parameters, stream bank treatments, stream configuration, and plants. Monitoring stations will be established for water quality assessment. TLG/PFT will

review report, provide comments, and determine whether to authorize Phase 2.

Silver Crescent Mine and Mill Complex Habitat Restoration

Sub-grant amount: \$318,700

Sub-grantee: USDA Forest Service

Planning and design is 50% complete using partner funding. The construction phase, for which this sub-grant will apply, has yet to begin.

Description of work to be performed in 2005 - This project is a demonstration project and is not included as prescribed work in the EPA ROD for Operable Unit 3 (OU-3). Upon completion of the proposed work in this project, the Silver Crescent Mine and Mill site will be the first sizable site in the Coeur d'Alene River Drainage to have gone through clean-up and restoration with an end goal of pre-mining functionality for wildlife and fisheries habitat.

Final design will be completed by the Forest Service in 2005 using partner funding (Forest Service, BLM, USFWS, and CDA Tribe). CWA Grant funds will be used for construction contract award late in 2005 or early 2006 with implementation start planned for 2006.

Canyon Creek Treatability Study

Sub-grant amount: \$100,000

Sub-grantee: IDEQ

Description of work to be performed in calendar year 2005 - IDEQ will issue a request for design services; evaluate proposals; and select an engineering firm for the project. In 2005 work will begin on the design including the gathering and review of information, conceptual designs, and identification of project requirements. How much of the design can be completed in 2005 will depend upon how quickly the grant monies are available.

The design work will be finalized in 2006.

South Fork Sewer District Toxicity Reduction

Sub-grant amount: \$115,900

Sub-grantee: South Fork of the Coeur d'Alene River Sewer District

Description of work to be performed in calendar year 2005 - The activities planned for this year include:

- Baseline toxicity testing – August/September 2005
- Review of potential sources of toxicity at the Page WWTP – November/December 2005

Simulation Model to Evaluate Coeur d'Alene Lake's Response to Watershed Remediation-Phase 2

Sub-grant amount: \$221,800

Sub-grantee: U.S. Geological Survey

Description of work to be performed in calendar year 2005 - Assemble and provide data

bases to Univ. of Western Australia model team; data bases relate to lake bathymetry, inflow/outflow hydrology, inflow/outflow constituent loads and concentrations, meteorological forces, and limnological variables through out water column. Continue with USGS National Research Program bioassay experiments to define zinc toxicity equations for lake phytoplankton. Continue USGS Geologic Discipline study to develop benthic flux equations for metals and nutrients. During last two weeks of May, conduct extensive field experiment on Coeur d'Alene Lake to provide calibration data for 3-D hydrodynamic model, ELCOM.

This project includes \$11,800 for peer review.

Computer Models to Assess Sediment Transport and Bed Evolution in the Lower Coeur d'Alene River, Phase 2

Sub-grant amount: \$128,000

Sub-grantee: U.S. Geological Survey

Description of work to be performed in calendar year 2005 – Data necessary for multi-dimensional bed-shear stress model will be collected. Multi-dimensional model will be developed of a single 1500 m reach near Dudley or Rose Lake.

Assessment of the Economics and Effectiveness of Alluvium Sorting as Mine Waste Removal Strategy at the Project Implementation Level

Sub-grant amount: \$207,000

Sub-grantee: IDEQ

Description of work to be performed in calendar year 2005 - As part of the Monarch/Beartop mill sites removal actions scheduled for the 2005 construction season, the funding will be used to sort stream and floodplain alluvial deposits contaminated with mine tailings from the adjacent mill sites. The clean alluvium (three-quarter inch plus) will be redistributed as the floodplain-stream channel complex is restored. The sorted tailings contaminated fraction (three-quarter inch minus) will be hauled to the repository for disposal. The project scale work will be used to answer several questions concerning the alluvium sorting approach. The volumes sorted will be tracked. The increased cost of sorting will be tracked. The savings in repository volume and therefore repository construction costs will be tracked. Any added benefit to the compaction of the wastes in the repository will be assessed.

The project includes a monitoring component. Using a gravel quality monitoring approach, the amount of mine waste contamination will be assessed in the gravels of Prichard and Bear Gulch Creeks at the removal sites pre and post-project implementation. Post project gravel quality measurements are the only component of the work that will extend beyond the 2005 construction season.

Coeur d'Alene Lake Management Plan Implementation

Sub-grant amount: \$137,200

Sub-grantee: IDEQ, CDA Tribe

Description of work to be performed in calendar year 2005 –

- The intent of the IDEQ is to fill a Coeur d'Alene Lake Manager position after July 1, 2005. This new IDEQ position was approved by the state legislature during the 2005 session. It is anticipated that duties of the lake manager position will include coordination with the Tribe to conduct the work of this CWA grant. Funding for the IDEQ position will not come from the CWA grant award.

The Tribe will utilize a portion of the funds allocated through this grant to hire a part-time staff representative to work with IDEQ's Lake Manager (mentioned above) to coordinate the activities defined below.

- From August through December 2005, contact and establish meetings with representatives from agencies, governments and private businesses that manage/regulate or conduct land use and disturbance activities within the immediate lake watershed. The meetings would present the purpose of the work, and seek cooperation and input for the survey and effectiveness audit. Agencies, governments and businesses would include, but may not be limited to:

Kootenai County; Idaho DEQ; The Coeur d'Alene Tribe; City of Coeur d'Alene; Idaho Department of Lands; U.S. Forest Service; Panhandle Health District; Kootenai/Shoshone Soil & Water Conservation District and NRCS; North Idaho Building Contractors Association; Private timber companies; Wastewater discharges; Marina operators; Golf course managers.

The goal of these contacts will be to discuss accomplishments to date and what is planned to be funded and accomplished in the future. Once this information is generated it will be utilized to revise and finalize the tables that will be incorporated into the new Lake Management Plan which is currently being developed by the State and Tribe. The extent of how much will be accomplished during this time frame will, in part, depend on agency availability and willingness to participate in the process.