2012 ANNUAL REPORT





Basin Environmental Improvement Project Commission

February 2013

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Executive Summary

The Basin Environmental Improvement Project Commission (BEIPC) is responsible for overseeing environmental cleanup to address heavy metal contamination, natural resource restoration and water quality in the Coeur d'Alene Basin (Basin). The BEIPC also participates in guiding and coordinating infrastructure upgrades and improvements to protect the environmental cleanup remedy and enhance living conditions in the communities of the Basin. The Basin is defined as the watersheds of the Coeur d'Alene (CDA) River, Coeur d'Alene Lake and the Spokane River within the Idaho Counties of Shoshone, Kootenai, and Benewah, as well as the Coeur d'Alene Tribal Reservation within Idaho. During Calendar Year 2012, the BEIPC coordinated and monitored accomplishments by various implementing entities for environmental cleanup and natural resource restoration work included in the BEIPC 2012 Annual Work Plan and the five-year operating plan. It also developed a 2013 Annual Work Plan and an updated fiveyear plan. The environmental cleanup work was performed through the federal Comprehensive, Environmental Response, Compensation and Liability Act (CERCLA/Superfund) Program, the State of Idaho and State of Washington environmental cleanup programs, and actions by the Coeur d'Alene Work Trust formed under the ASARCO Bankruptcy settlement. Natural resource damage restoration work was performed by the Coeur d'Alene Basin Natural Resource Trustees including the Coeur d'Alene Tribe, State of Idaho, Department of Interior through the U.S. Fish and Wildlife Service (USFWS) and Bureau of Land Management (BLM) and Department of Agriculture through the U.S. Forest Service (USFS). The BEIPC continued to work on a consolidated approach to flood control and levee management in the South Fork CDA River and Pine Creek working with the U.S. Environmental Protection Agency (EPA), State of Idaho, local government agencies, and the Idaho Silver Jackets organization, a coalition of federal and state agencies that work together to develop comprehensive and sustainable solutions to Idaho's flood hazard issues. The Panhandle Health District (PHD) continued to manage the Institutional Controls Program (ICP) to control the release and migration of contamination remaining in place after remediation.

BEIPC Overview

Authorization and Duties

The BEIPC was established by the Idaho State Legislature and implemented through a Memorandum of Agreement (MOA) among implementing parties to direct, and/or coordinate environmental remediation, natural resource restoration, and related measures to address water quality and heavy metal contamination in the Basin.

The Basin is considered to be Operable Unit 3 (OU-3) of the Bunker Hill Mining and Metallurgical Complex Superfund Facility, originally listed on the CERCLA National Priorities List in 1983. Operable Units 1 and 2 (OU-1&2) are the populated, industrial, and undeveloped areas in what is known as the "Bunker Hill Box."

The BEIPC's primary purpose is to work with the EPA and Idaho Department of Environmental Quality (IDEQ) to implement the Record of Decision (ROD) for OU-3 throughout the Basin and implement the Upper Basin ROD Amendment (RODA) for portions of OU-3 and work in OU-2 included in the Amendment designed to advance the cleanup of heavy metals contamination. In addition, the BEIPC is involved in:

- Assisting the EPA in developing and managing the Superfund Cleanup Implementation Plan, a comprehensive cleanup plan for the Upper and Lower Basins based on remedies selected in the OU-3 ROD and Upper Basin RODA;
- Coeur d'Alene Lake management planning and implementation;
- Heavy metal contamination cleanup efforts at mining sites in the North Fork of the CDA River; and
- Leading multi-agency coordination in addressing potential flooding in the South Fork CDA River and Pine Creek drainages.

Legislation creating the BEIPC authorized appointment of a seven-member board comprised of:

- Four members from Idaho, one representing the state, and one each representing the county commissions from Shoshone, Kootenai, and Benewah Counties, appointed by the Governor of Idaho;
- One representative of the state of Washington appointed by the Governor of Washington;
- One tribal council member of the Coeur d'Alene Tribe appointed by the council of the Coeur d'Alene Tribe; and
- One federal representative of the United States appointed by the President.

Implementing language directed the BEIPC to appoint an Executive Director to manage the activities of the BEIPC. The Executive Director is Terry Harwood.

Current BEIPC Membership

Name	Title	Representing
Jon Cantamessa, Chair	Shoshone County	Shoshone County
	Commissioner	
Jack Buell, Vice-Chair	Benewah County	Benewah County
	Commissioner	
Dan Green	Kootenai County	Kootenai County
	Commissioner	
Chief Allan	Chairman, Tribal Council	Coeur d'Alene Tribe
Grant Pfeifer	Regional Director,	State of Washington
	Washington Department of	
	Ecology	
Curt Fransen	Director, Idaho Department	State of Idaho
	of Environmental Quality	
Dennis McLerran	Regional Administrator,	Federal Government
	R-10 EPA	

Program Management

The BEIPC operates in accordance with the Idaho statute and the MOA between the governing entities. It is responsible for coordinating the activities of federal, tribal, state and local government agencies implementing the ROD for OU-3 and the Upper Basin RODA for human health and ecological cleanup activities. It is also involved in the coordination of efforts to protect the cleanup remedies, human health, and the environment from the release and migration of contaminants through the implementation of Institutional Controls in the Basin, implementation of a Drainage Control and Infrastructure Revitalization Plan (DCIRP) for the Upper Basin communities, and development of a coordinated effort for flood control and levee management in the South Fork CDA River and Pine Creek.

The Executive Director works with the seven governmental entities and their agencies to establish annual work priorities and operating plans, manages the activities and programs of the BEIPC, and assists governments on various engineering and environmental issues at their request. To assist the Executive Director in program management, planning, and implementation, volunteer staff "on loan" to the BEIPC from the states of Idaho and Washington, the EPA, and the Coeur d'Alene Tribe coordinate with the Executive Director and provide routine intergovernmental input on technical and policy issues. Other support groups include the Technical Leadership Group (TLG) and the Citizens Coordinating Council (CCC).

Technical Leadership Group (TLG)

The TLG with its Project Focus Teams (PFTs) is the BEIPC primary technical advisory group. It is comprised of federal, state, local and tribal representatives as well as interested private citizens serving on the PFTs who provide expertise in science, engineering, logistics, regulatory aspects, and land management in the Basin. The TLG advises the BEIPC on work planning and implementation while striving toward consensus-based recommendations. In 2012, the Executive Director, PFTs and TLG developed the 2013-2017 Five-Year and Calendar Year 2013 draft work plans and studied and developed project and program proposals to implement the remedy in OU-2 and 3. The TLG is currently composed of representatives from 21 governmental entities.

Public Outreach and Citizen Involvement

Community Involvement

During Calendar Year 2012, the BEIPC held meetings and deliberations open to the public and maintained an up-to-date Basin website at: <u>www.basincommission.com</u>. Meetings were held at various locations within the Basin with locations and dates posted in local newspapers and at the BEIPC office in Kellogg, Idaho. EPA, IDEQ and the BEIPC held a number of community meetings to discuss the RODA for the Upper Basin and other issues. General public comment opportunities are scheduled at each meeting. The BEIPC also participated in public education/outreach efforts including the joint information booth at the North Idaho Fair.

Citizens Coordinating Council (CCC)

The CCC serves as an information conduit to and from the BEIPC on citizen, community, and special interest issues, and on environmental cleanup and restoration concerns. It is comprised of politically and geographically diverse members and was established to provide local citizen review and input on Basin related work to the BEIPC. In 2012, the CCC also established a multi-stakeholder Lower Basin Collaborative (LBC) to address issues in the Lower CDA River Basin below the confluence of the North and South Forks of the CDA River

The purpose of the LBC is to develop citizen recommendations to be presented to the CCC, TLG and the BEIPC for discussion and consideration.

CCC and LBC Meetings and Communication

The CCC facilitated email and US Mail communications to its members and the public on an as-needed basis.

CCC meetings were held in January, April, July, and October 2012 in different locations around the Coeur d'Alene Basin. All meetings were open to the public.

At the regular quarterly CCC meetings, members were updated on ongoing BEIPC and TLG activities and asked to provide input on a variety of issues such as how information is best distributed to residents in the Basin, CDA Work Trust spending scenarios, and the one- and five-year BEIPC work plans. The CCC informed the BEIPC of its activities by providing meeting minutes and comments to Commissioners prior to BEIPC meetings and by making presentations at BEIPC meetings.

Chronology of Selected CCC Activities and Input to the BEIPC in 2012

In addition to receiving updates approximately once a month via email or regular mail about current BEIPC activities, CCC members were involved in the following activities in 2012.

January

• The CCC held a regular quarterly meeting on January 18 in Coeur d'Alene, Idaho. This meeting was shortened due to adverse weather conditions. Topics included: IDEQ updates on Basin outreach and education activities like the Hercules Mine/Mill interpretive sign project, EPA updates on the Upper Basin RODA and potential spending scenarios for the CDA Trust funds, EPA staff changes for the CDA Basin team and community liaisons, and information on the proposed Osburn and Lower Burke Canyon Repositories.

February - March

- The CCC Chair, Jerry Boyd, presented the results of the January 18 CCC meeting at the February 15 BEIPC meeting in Wallace, Idaho.
- The LBC held a community information meeting on March 6 in Harrison, Idaho.

April

• The CCC held a regular quarterly meeting on April 18 in Wallace, Idaho. Topics included: information on the EPA Technical Assistance Services for Communities (TASC) program, updates on the road remediation program, remedy protection work, repository operations, EPA updates on the Upper Basin RODA, CDA Trust work and updated funding scenarios, and the EPA Superfund Job Training Initiative (JTI), LBC activities, and an overview of continuing implementation of the Lake Management Plan by IDEQ.

May - June

- The LBC held a second community information meeting on May 2 in Harrison, Idaho.
- The CCC Chair presented the results of the April 18 CCC meeting at the May 16 BEIPC meeting in Coeur d'Alene, Idaho.
- The LBC held a third community information meeting on June 4 in Medimont, Idaho.

July

• The CCC held a regular quarterly meeting on July 11 in Coeur d'Alene, Idaho. Topics included: the Basin Property Remediation Program (BPRP), the release of the Technical Assistance Services for Communities (TASC) Needs Assessment, planning for the August 10 Basin Commission meeting, the pending release of the Upper Basin RODA, Repository updates from IDEQ and potential outreach

activities for repository information, an update on the LBC learning sessions, and a discussion on how to improve education opportunities in the Basin for the property sampling program.

August - September

- The LBC held a community information session on August 8 in Medimont, Idaho.
- The Vice Chair presented the results of the July 11 CCC meeting at the August 10 BEIPC meeting in Wallace, Idaho.
- The CCC Chair and Vice-Chair volunteered to help staff the joint fair booth at the North Idaho Fair that was sponsored by the BEIPC, IDEQ, CDA Tribe, EPA and PHD for public education and outreach.
- The LBC held a meeting on September 17 in Harrison, Idaho.

October

• The CCC held a regular quarterly meeting on October 17 in Wallace, Idaho. Topics included: the draft five-year and one-year (2013) BEIPC work plans, outreach and education opportunities in the Basin, the release of the Upper Basin RODA work plan, repositories, the BPRP, LBC activities, updates from the TLG, Lake Management Plan activities by IDEQ and CDA Tribe, and a discussion of how information on activities in the Basin are communicated to residents. CCC members reviewed and provided comments on the draft BEIPC five-year and 2013 work plans.

November - December

- The CCC Chair presented the results of the October 17 CCC meeting at the November 7 BEIPC meeting.
- The LBC held an information session on December 5.

Additional Outreach Activities

In addition to the activities of the CCC and LBC, the various governmental entities represented by the BEIPC continue to support the TLG and CCC by being involved in the activities of those groups. The governmental entities have been involved in outreach activities including meeting with citizen groups, giving technical presentations, participating in Basin events, holding tours of Basin project areas, maintaining information repositories throughout the Basin, and publishing various information documents to provide updates on Basin activities and to give answers to common environmental cleanup and improvement questions.

As part of the public outreach program, the Executive Director continued to make numerous presentations to local business and community groups concerning activities of the BEIPC and planned cleanup actions and activities required to protect the remedy, human health, and the environment. The Executive Director also hosted a number of field reviews by the media and other interested parties, and was interviewed numerous times by the media for news stories.



BEIPC August Field Trip



Communications and Public Involvement

BEIPC Communications and Public Involvement

In 2012, the BEIPC continued its efforts to strengthen public involvement in BEIPC activities and communication between the CDA Basin community, the BEIPC and agencies involved in the cleanup. The CCC was the focus organization to help implement this process.

The following is a partial list of BEIPC community involvement activities throughout the year:

- Participated in BEIPC public education/outreach efforts at the North Idaho Fair in a joint booth with IDEQ, EPA, CDA Tribe and PHD.
- Coordinated a field tour of sites in the Upper and Lower Basin for the Basin Commissioners, agency representatives, and citizens in August. Participants boarded two buses following the BEIPC meeting in Wallace to view the Big Creek Repository, Lower Burke Canyon Repository site, Star mine site in Burke, Woodland Park road project, East Mission Flats Repository and Little Pine Creek remedy protection project.
- Provided assistance to BEIPC groups and staff on communications material including presentations, information sessions, news articles, displays, and advertising.
- Publicized BEIPC/CCC and LBC meetings through distribution of informational flyers with assistance from EPA and IDEQ.
- Utilized other communication methods to publicize meetings such as public TV, community calendar pages, newspaper advertising, and electronic media.
- Shared BEIPC related information with the Community Involvement Coordinators (CICs) of EPA, IDEQ and the LMP staff for publication on their Facebook pages.
- Submitted an article in EPA's Basin Bulletin about the August BEIPC field trip.
- Collaborated with the CICs regarding future communication resources such as video training, public service announcements, and community workshop training sessions.
- Sponsored an audio training session for local CICs regarding public involvement for stakeholders and citizens.
- Provided BEIPC/CCC informational materials to IDEQ and EPA for a booth at the Silver Valley Chamber's Business Expo and Shoshone Medical Center Children's Health Fair.
- Attended LBC meetings throughout the year in Harrison, Medimont and Rose Lake.
- Coordinated with IDEQ and EPA to sponsor a Repository Open House in conjunction with the CCC.

- Attended EPA's Technical Assistance Services for Communities (TASC) meetings.
- Provided review assistance on IDEQ and PHD's "Riley Raccoon" educational campaign on recreation safety (with IDEQ and PHD) that focuses on children ages six and under. The purpose is to educate children about the importance of washing their hands after being exposed to contaminants like lead, especially after recreating in areas with high lead concentrations.
- Continued efforts to populate the BEIPC website with new information about BEIPC related activities and other information as requested by various agencies and advisory groups. The website provides information to keep the public informed including how to become involved and participate in the process; and opportunities for the community to provide input. Updates to the website will be ongoing.

EPA Community Involvement Activities

Region 10 of EPA continued working with the local community throughout 2012. The agency's outreach activities are designed to give people meaningful opportunities to be involved in agency decision-making, to ensure that the public is fully informed about site activities, and to collaborate with the many partners in the cleanup.

Highlights of EPA community involvement site activities during the year include:

- EPA's new Community Liaison is on board and a recognized resource for local residents. EPA created this position in response to requests for an on-site representative. The liaison is enhancing local communications, providing people with easier access to the agency, and ensuring that EPA is kept apprised of local issues and questions.
- EPA's Upper Basin RODA reflects changes requested by the public during the Proposed Plan comment period. The 2012 document includes responses to thousands of public comments. EPA prepared a summary document with highlights of the plan. Outreach included media work, mailings and e-mailings, Facebook postings, document distribution, local presentations, and more.
- The agency brought in a Technical Assistance Services for Communities (TASC) team to meet with community members and create a needs assessment. TASC hosted four meetings, each including an EPA presentation, inviting people to participate in the assessment. Nearly 30 stakeholders provided input. TASC issued a report outlining assistance needs and recommending ways to meet those needs. EPA is implementing many of the recommendations already.
- In response to the needs assessment findings, EPA contracted with TASC to prepare an independent fact sheet about the RODA and resources for finding more information. This document was widely distributed.
- EPA launched a Superfund Job Training Initiative (Super JTI) in 2012. Super JTI is a job readiness program providing free technical training to citizens living in communities affected by Superfund sites. Twenty people were selected to enter the training program. Ten have since become gainfully employed, six working in positions related to the cleanup.

- EPA issued its Draft Superfund Cleanup Implementation Plan (SCIP) this fall outlining what cleanup work will happen in the Basin over the next ten years. An informal public review opportunity kicked off in November. As part of its outreach effort, EPA prepared a fact sheet, did mailings and e-mailings, posted on Facebook, provided local briefings, and widely distributed the document. Public input will help shape the plan.
- A new Facebook page providing site updates and resources is now available to the public. Find it at www.facebook.com/CDAbasin. The page offers timely site updates, resource information, and an online community forum. EPA invites your participation, suggestions, and postings.
- EPA and IDEQ are meeting with local jurisdictions to discuss the Paved Roadway Surface Remediation Program. The agencies completed the Roadway Surface Remediation Strategy this year, with input from local city and county representatives. Discussions in December, and planned for February 2013, will include implementation of the program and guidance for making funding requests.
- Publication of EPA's Basin Bulletin continues. The agency published three editions in 2012, each providing news and updates about the Coeur d'Alene Basin Cleanup Project.
- The agency maintained its commitment to the BEIPC process throughout 2012. EPA provides funding support for facilitation of the Citizens Coordinating Council and the Lower Basin Collaborative. EPA provides staff support and regular participation at meetings of the Basin Commission, CCC, TLG, PFTs, and LBC.
- In 2012, EPA overhauled its webpage for the Coeur d'Alene Basin Cleanup Project. The agency made changes to make it easier for people to find content and access documents. Suggestions for further improvements are always welcome.
- EPA maintains document collections related to the cleanup at several area libraries for public access.
- Project managers met several times with local officials, interest groups, and others to provide updates and answer questions in 2012. Additionally, EPA and IDEQ conducted site tours for interested parties and provided presentations to local schools and interested groups in the area.
- EPA regularly worked with the media in 2012, arranging quarterly press availability sessions usually tied with the BEIPC meetings, fielding questions from reporters about the site, running newspaper display ads, and issuing press releases on such issues as the Upper Basin RODA and other high-interest activities.
- EPA conducted community outreach related to this year's field investigation near the Central Impoundment Area in Kellogg. For example, EPA created a web page explaining what work would be done. Community liaisons from both EPA and IDEQ directly communicated (door-to-door) with people affected locally. EPA also posted updates and photos on Facebook.
- Outreach activities took place during the Hercules Mill cleanup in Wallace. EPA created a web page, posted updates and photos on Facebook, and conducted door-to-door communications in partnership with IDEQ to ensure that local organizations had information about the cleanup.

• With support from IDEQ and the BEIPC, EPA crafted an interactive educational display related to the cleanup for University of Idaho's Water Resources Center. The display features trivia questions which can be flipped over for answers, colorful pictures, a site map, and agency logos. EPA also supplied scores of additional educational materials to the Center for them to display and hand out to visitors. An EPA poster depicting aspects of the cleanup is mounted on an entry wall.

IDEQ Community Involvement Activities

The following are highlights of 2012 outreach and community involvement activities for IDEQ:

Community Liaison

- Attended and provided project updates in community meetings such as: Lower Basin Collaborative and Citizens Coordinating Council, Chambers of Commerce, City Council. These duties are commonly shared with the EPA CIC.
- Developed and implemented Communications Strategies supporting IDEQ/EPA project information events.
- Assisted EPA with Superfund Job Training Initiative outreach.
- Assisted EPA with Technical Assistance for Communities outreach.
- Created and maintained a distribution list to assist EPA in distributing Basin Bulletins in the Silver Valley.
- Developed the monthly Superfund Straight Talk columns for local newspapers.
- Developed Basin Bulletin Articles for IDEQ projects and programs.
- Maintained a project website and contributed to IDEQ's Facebook page.

Education

- Presented project overview to civic groups and recreation clubs.
- Distributed Kellogg Panhandle Health District Riley Raccoon Activity Books to public locations in the Silver Valley.
- Assisted Kellogg Panhandle Health District in Lead Health Education in six Silver Valley elementary Schools including Head Start.
- Contracted an illustrator to update Riley Raccoon education materials and expand into Lower Basin recreation lead health awareness.
- Provided eight outreach and education presentations at community events, schools, civic clubs and recreation clubs.
- Advertised the CDC's information about the National Lead Poisoning Awareness Week campaign in November.
- Coordinated with high school student volunteer staff for the NI Fair Booth.
- Coordinated a coloring contest for 1st Grade students for lead health awareness.
- Connected EPA with Water Resource Center to coordinate an educational project display.
- Supported local museums with photographs or information for public education.

Special Projects

- Managed a historical sign project for the Hercules Mill for the Panhandle Lakes RC&D. This project is supported in part by a grant from the Idaho Humanities Council, a State-based Program of the National Endowment for the Humanities.
- Provided student education at Silver Hills Elementary School in Osburn during school playground remediation.



Repository Open House



Cooperative CDA Basin Education and Outreach Booth at the North Idaho Fair

Calendar Year 2012 Work Accomplishments

Work Performed Through Federal Superfund or Other Cleanup Programs:

Blood Lead Screening in Children

Screening of children for elevated blood lead levels has been occurring annually in the CDA Basin since 1996 as a public health service. 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 inform the Basin cleanup efforts. The cleanup action decisions are not based on annual blood lead testing results. Rather, the goal is to prevent lead exposures that could result in elevated blood lead levels.

Results of the 2012 Screening Program were presented at the November BEIPC meeting. The table below shows the 2012 Basin Blood Lead summary results for children up to 6 years compared to data since 2004.

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012
Number of Children	80	81	69	71	73	175	108	75	83
Min (µg/dl)	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.0
Max (µg/dl)	16.7	12.0	10.0	9.0	14.0	10.0	20.0	12.0	8.0
Ave (µg/dl)	3.9	2.9	2.8	2.9	2.4	3.1	2.5	3.1	3.3
GeoMean (µg/dl)	3.4	2.3	2.4	2.6	2.1	2.7	2.1	2.6	3.1

No children were identified with a blood lead level of greater than 10 micrograms per deciliter (μ g/dL). In early 2012, the Centers for Disease Control & Prevention (CDC) changed its "level of concern" associated with childhood lead poisoning from a blood lead level of 10 micrograms per deciliter (μ g/dL) to a new "threshold value" of 5 μ g/dL. The term "level of concern" was dropped based on scientific evidence that adverse health effects occur below 10 μ g/dL.

CDC now uses a reference value based on the 97.5th percentile of the blood lead level distribution among children 1-5 years old in the United States (currently $5\mu g/dL$) to identify children with an elevated blood lead level. This is done using data generated by the National Health & Nutrition Examination Survey (NHANES). At present, approximately 450,000 children in the U.S. have blood lead levels higher than this reference value. PHD offered follow-up health intervention visits for each of the five children with lead levels above 5 micrograms per deciliter.

As with past years, Basin participants were paid \$20 for each child screened. In 2012, the number of children tested was similar to past years, even though free pool passes were provided to those screened as additional incentive for their participation. In 2009 a \$40 incentive was offered as a onetime effort. As a result participation rates roughly doubled.

The blood-lead screening program will continue in 2013. The program will be offered in the same manner as the past with a modification to increase the incentive to \$30 per child.

Basin Property Remediation Program (BPRP)

Year	Number of Property Addresses	Area Remediated (Acres)	Waste From BPRP Disposed of in Repositories (Truckloads)	Truckloads Per Acre
2007	373	60	9,240	154
2008	352	57	8,129	143
2009	547	149	18,780	126
2010	311	70	10,725	153
2011	243	64	9,795	153
2012	216	73	9,127	125

IDEQ remediated a total of 216 residential and commercial property addresses during the 2012 BPRP. This resulted in over 3.2 million square feet of contaminated property being remediated. The waste material was disposed of in the Big Creek and East Mission Flats Repositories. Work started on May 14, 2012 and continued until December 18, 2012. The cost of property remediation was \$8.8 million. During the program, an average of 125 truckloads of waste per acre remediated was hauled to the repositories. This season, repository operations costs for the BPRP were about \$790,000. The table above contains information on properties remediated and truckloads of waste processed in repositories since 2007 for reference.

In 2011, EPA and IDEQ implemented a process to sample unpaved public roadway surfaces to determine if and where surface contamination with heavy metals may be present. This process was implemented to ensure that adjacent remediated and clean properties would not be subject to contamination from storm water runoff of contaminated surface materials, blowing contaminated dust, or tracking of contaminated materials off unpaved roadway surfaces. The sampling process was completed in 2012 and the results of the process used to develop an unpaved roadway surface remediation program with a listing of unpaved roads to be addressed. EPA and IDEQ are working with the local jurisdictions on developing the unpaved road surfacing project proposals and preliminary and final designs, implementing the project work, and final acceptance of the remedial work.

The remediation approach for the unpaved roads was developed considering the ROD for OU-3 and the ICP requirements. A pilot project for unpaved road surface remediation on contaminated road segments in Shoshone County and East Side Highway District jurisdictions was prepared and implemented to develop surveying techniques, design approaches, standard drawings and technical specifications, and a standard Operation and Maintenance Agreement document for execution by the State of Idaho and the involved local road jurisdictions. Most of the work on four road segments was completed in the fall with the fifth segment to be completed along with any remaining work on the partially completed segments during the field season of 2013.



Property Remediation in Burke



Hydro-seeding a Remediated Area

Remedy Protection Projects

Remedy Protection is a high priority in the Upper Basin RODA and the Superfund Cleanup Implementation Plan (SCIP) developed by EPA in the fall of 2012. The objective of this work is to protect the installed human health related remedy from recontamination and scouring caused by heavy precipitation and tributary flooding. In 2012, planning, survey and design began on a number of projects in the urban areas of the Box and Upper Basin portion of OU-3 noted in the RODA. That work included survey and completion of the 90% design for construction of the Sierra Nevada project, completion of the survey and 60% design of the Grouse Creek project, and survey and preliminary design of the Little Pine Creek and Jackass Creek projects in the Box; survey and design work on the Meyer Creek project in Osburn and drainage projects in Mullan in the Upper Basin portion of OU-3 were also started by the CDA Work Trust.

EPA and IDEQ began initial analysis of data to define the remedy protection projects for the side drainage program noted in the RODA. Completion of the analysis process and preparation of an Explanation of Significant Differences (ESD) or other decision document will be completed in 2013, so that those projects can be incorporated into out-year programs of work.

Paved Roadway Surface Remediation Program

EPA and IDEQ developed a roadway surface remediation strategy in 2012 to address the deterioration of contaminated paved road surfaces due to heavy traffic during site remediation activities to ensure road surfaces continue to serve as barriers that reduce or eliminate exposures to underlying contamination. In November and December 2012, the Roads Board established by the strategy met with the nine local road jurisdictions to explain the program and work with them and their design professionals to develop their paved roadway surface remediation programs. It is anticipated that this process will result in some paved roadway work being completed in 2013, but the scheduling of that work is dependent on the leadership and control of the local jurisdictions. Accomplishments in this program will continue to be reported in the annual accomplishment report for the BEIPC.

Repository Development and Management

Introduction

Repository development and management is an ongoing process that must meet the demand for the disposal of historic mining related contamination for the entire Coeur d'Alene Basin environmental and human health related cleanup program. The cleanup program includes the BPRP, other cleanup actions performed by EPA, the CDA Work Trust, and Potentially Responsible Parties (PRPs) performing cleanup under administrative agreements with EPA and IDEQ. It also includes waste generated by private parties and local government agencies under the ICP. Without the expansion of existing repositories or the construction of new repositories, continued cleanup and control of contamination could be compromised and potentially stopped.

The Upper Basin RODA specifies a two-part approach to waste management that utilizes both repositories and Waste Consolidation Areas (WCAs). Repositories are large, centrally located areas within the Upper and Lower Basin where contaminated soil excavated during cleanup actions is transported to, managed, and secured. WCAs will be located adjacent to or near the waste source areas and will serve for consolidation or placement of wastes from specifically identified sources such as mine and mill site remedial actions.

Repositories and WCAs constructed under the remedy are engineered and constructed to reliably contain waste materials, and prevent contaminants from being released to surface water, groundwater, or air in concentrations that will cause state and/or federal standards to be exceeded.

Three repositories were operated to receive remedial action and ICP waste in the 2012 field season. Big Creek Repository (BCR) near the community of Big Creek serves the Upper Basin, and East Mission Flats Repository (EMFR) near Cataldo serves communities in the Lower Basin. The Page Repository, located in Smelterville, receives the waste generated by the cleanup activities conducted in the "Box." The repositories have been operated by IDEQ, who has also been conducting the BPRP, and can therefore direct waste to the repositories to minimize transportation distances and costs. In addition, the Page Repository is being expanded using recycled construction materials extracted from Basin waste streams which helps to further reduce operating costs. A summary of activity at each site is described in the sections below.

In addition to the operational repositories, three separate areas for future disposal and permanent storage of mining related contamination are currently in some stage of development. The repository site selection process initiated in 2008 culminated in the identification of two new repository sites in the Upper Basin; the Osburn Tailings Impoundment (OTI) near Osburn and the Star Tailings Impoundment (STI) near Woodland Park. The third area under development is a WCA in the East Fork of Nine Mile Creek necessitated by the significant volume of waste identified for cleanup in that drainage. The progress toward transforming these sites into waste disposal facilities is described in the sections below.

Big Creek Repository

During 2012, BCR received 2,846 truckloads from the BPRP, 420 truckloads from the ICP and 849 truckloads from the Hercules Mill Site cleanup. Final in-place, compacted volume calculated from the truck load count was about 25,000 cubic yards. This material was placed and compacted in accordance with the fill plan outlined in the annual BCR Operations Plan. IDEQ's site management contractor oversaw these activities including operation of the decontamination facility. In 2012, the water quality monitoring program at the site found that BCR operations had not impacted adjacent surface or ground waters.

The BPRP and ICP waste soil placed at BCR in 2012 was incorporated into the north side expansion area. The waste soils from the Hercules cleanup were placed and compacted on top of the BCR. Beginning immediately after receipt of the last load of Hercules waste on October 11, a cap was installed over the waste and the year-end repository shutdown activities were initiated.

Year-end repository shutdown activities have been completed and include:

- Finish grading of the north and west slopes of the BCR North End expansion area were initiated on October 18, and completed on October 23. All slopes were cut/filled to a nominal 3:1 slope, and track-walked to prevent erosion.
- The active placement surface of the BCR North End expansion area was graded and sloped inward to prevent consolidated runoff from eroding any finished slopes.
- A storm water ditch (constructed of filter fabric and six inch cobble) was constructed at the interface between BCR North End expansion waste and the original tailing pond berm at the NW corner of the site to convey collected storm water off the waste mass.
- Additional storm water management controls including straw waddles and hydro-seeding with a native seed mix were installed on finished slopes to further protect against erosion of these surfaces.

At the end of the 2012 field season, the BCR contained approximately 519,000 cubic yards of waste soils. The total anticipated capacity is approximately 607,000 cubic yards including the final cap volume. Assuming historical waste disposal needs from the BPRP and ICP, approximately three years of capacity remains. To ensure continued ICP capacity for the Upper Basin until operation of a new upper basin repository begins, careful management of the remaining BCR capacity will be required.

East Mission Flats Repository

East Mission Flats Repository (EMFR) achieved fully operational status starting in 2010. In 2012, the EMFR repository received 6,281 truckloads from the BPRP, and 187 truckloads from the ICP. Final in-place, compacted volume calculated from the truck load count was about 39,000 cubic yards.

All exterior slopes of EMFR completed in 2012 have been cut/filled to a nominal 3:1 slope, and track-walked to prevent erosion. Clean soil treated with approximately 180 cubic yards of compost generated at the Page Repository was placed as a six inch cover over the 2012 lifts. This temporary cover will stabilize the exposed waste until the final cap and cover can be constructed. The exterior surfaces were further stabilized from erosion using straw waddles and hydro-seeded with a native vegetation seed mix.

As in the past, the ICP disposal area will be available at the east end of EMFR to receive ICP waste during the winter closure period. The ICP area will be managed by the IDEQ Project Manager and Operations Contractor during the winter closure period. Prior to spring runoff, all ICP waste will be transported and stockpiled on top of the repository for processing and future placement and compaction.

Quarterly groundwater monitoring was conducted at six monitoring wells located on or near EMFR. In addition, flood water samples were collected during the April 2012 flood event. Groundwater and surface water monitoring results indicate that disposal activities have not impacted water quality near the site.

Page "Box" ICP Repository

The Page Repository, which has been operating for almost 20 years, is located just west of Smelterville. During 2012, regular operations at Page received and disposed of approximately 7,500 cubic yards of ICP waste generated in the Box. Most of these materials were generated by commercial developments. Following coordination and approval of repository managers; Page also receives, processes, and re-uses concrete, asphalt, organic materials and wood wastes from local communities and the Basin repositories. Approximately, 30,000 cubic yards of wood wastes were removed from local waste streams and are being composted for use as soil amendments in repository caps and covers. As a result of an accident along a UPRR rail siding, approximately 10,000 cubic yards of organic materials was incorporated into soils for immediate and future use as repository cover materials. Over 10,000 cubic yards of concrete, asphalt, and gravel were salvaged from local waste streams for use as foundation materials for the expansion of the Page Repository. The re-use of materials has significant cost benefits for operation of the repositories because the volume of imported materials is reduced and the limited repository storage space is maximized.

Due to the limited capacity remaining, the Page Repository has been redesigned to contain an additional 700,000 cubic yards of materials in order to support Box ICP operations. Preliminary work on expansion of the facilities began in 2012 and will continue into 2013. The expansion will occur in two to three acre phases approximately every five years until the final footprint has been founded. Each repository cell will be

initialized by constructing a "starter berm" from two to four foot concrete blocks, filled in by a "mattress" layer of one inch plus to twelve inch minus materials. The starter berms and mattress materials have been designed to exceed geotechnical criteria for structural stability and to platform placed ICP wastes above the 50 year flood conditions that may be realized in the West Page Swamp.

To mitigate for the expansion of the Page Repository into the West Page Swap, the West End Natural Infiltration Area (WENI) wetland restoration project was required. The WENI restoration, constructed in 2012, is located west of the South Fork Sewer District facilities in the area between Interstate 90 and the Trail of the Coeur d'Alenes. During the development of the WENI, approximately 20,000 cubic yards of clean soils were generated by screening materials excavated from the project area. The soils have been stockpiled on Page Repository for use as cover materials and the gravels screened from the excavated materials were used for the mattress layer during the preliminary expansion work at the facility. The WENI wetland restoration will provide a high quality wetland in the previously degraded area.

New Repositories

Two new repository locations were identified as a result of the site selection process that included public participation. Both proposed repository sites are located on reclaimed mine tailings impoundments. One site is located at the Osburn Tailings Impoundment (OTI) northeast of Osburn and the second site is located at the Star Tailings Impoundment (STI) in Canyon Creek east of Woodland Park. The design status and future development plans for both repository locations was presented at an open house conducted on April 25, 2012.

During 2011, a thirty percent repository design report was initiated for the OTI site. Prioritization of remediation projects in Canyon Creek necessitates shifting to design of a repository located at the STI site. The design and development of the OTI site has been put on hold until prioritization of nearby projects necessitate a disposal facility at the location. Prior to further development of a repository at the OTI site, a public comment period on the thirty percent design will be conducted.

In late 2011, the CDA Trust began the planning for pre-design data collection for the Lower Burke Canyon Repository (LBCR) located at the STI site in Canyon Creek. The collection of the pre-design data was completed in 2012. The results of the pre-design investigation will be included in the 30% design document that will be available for public comment in 2013. In addition to the public comment period, it is anticipated that the 30% design will be presented at an open house, so concerns may be expressed directly to project managers. The public will have an opportunity to review and comment on the LBCR thirty percent design report before additional work is conducted at the site. Any revisions that occur as a result of public comments will be incorporated into subsequent designs for the site. The LBCR is scheduled for construction in 2014.

In addition to the two new regional repositories being developed to receive future waste generated by the Basin cleanup, during 2012 the CDA Trust developed a 60% design for a Waste Consolidation Area (WCA) in the East Fork of Ninemile Creek. The WCA is located approximately ¹/₄ mile northeast of the Interstate Mill site. The WCA design is intended to meet the disposal and borrow material needs of remedial actions being implemented in the Ninemile Creek watershed to reduce metals loading to Ninemile Creek. A 90% design is anticipated in the early part of 2013 and the initial phase of WCA construction is scheduled for the 2013 field season.

Recreational Use Activities

The work of the Recreation Area PFT was moved as a subcommittee under the Lower Basin PFT. This transfer came about since most of the existing and future potential recreation areas are within the Lower Basin. Work on Upper Basin sites will still be accomplished within this revised framework. Gene Day Pond (GDP) is an example of an Upper Basin site being addressed by the PFT.

Throughout 2012, efforts continued to consider the potential restoration of a recreational site at the GDP area in Osburn. If a project were to proceed, it could include the development of an urban fishery which would be managed by the Idaho Department of Fish and Game (IDFG). A workgroup was formed that includes; IDFG, Idaho Department of Parks and Recreation (IDPR), CDA Tribe, Shoshone County Sportsman Association, and IDEQ. This group will work with City of Osburn, Shoshone County Commissioners, BEIPC, PHD (ICP program), and Idaho Department of Transportation (ITD).

IDEQ funded a characterization project that provided information and analysis in support of GDP rehabilitation. The Gene Day Pond Characterization Report was completed in June 2012. The following field activities were conducted: topographic survey, water sampling, soil and lithological sampling, water depth and muck depth measurements, and wetland delineation of the GDP site.

IDEQ also worked with the CDA Trust through EPA funding a project conducting historical research from the Wallace Mining Museum regarding GDP. The history was provided to IDEQ and the GDP working group on a CD and is available to anyone who is interested. The history provided necessary details on past uses of the GDP area. After the findings from the characterization report, IDEQ and EPA came to the conclusion that the area was not exceeding human health thresholds for heavy metals contamination, and therefore could not take remedial action on the pond. There is still one area on the west bank of the pond adjacent to the trail that will be addressed under the BPRP.

IDFG has taken over the project as the lead. IDFG is working on various issues (i.e. parking lot, 404 permits). IDFG also developed a conceptual site plan with assistance from the workgroup in May 2012. Currently IDFG is creating a visual plan with a proposal describing the actions needed to turn the pond into a fishery. IDEQ was asked by IDFG to assist in coordinating meetings and keeping the group updated on actions. The Shoshone County Sportsman's Association has opened a bank account for GDP and is working on finding funding for dredging the pond. The IDEQ Regional Office has also offered assistance. Currently, the working group is requesting letters of support from the Mayor of Osburn, PHD, and community members. The support letters will accompany a proposal that will be presented to the Shoshone County Commissioners.

IDEQ has awarded a contract to develop a cast of four characters to accompany PHD's Riley Raccoon cartoon character when conducting outreach on recreational public health messaging. IDEQ is leading the effort with PHD and EPA under the direction of the BEIPC. The campaign will focus on contamination exposure sources, pathways, and ways to lower the risk of exposure. There is also a need to address how to reduce the pathways where contaminants can get into the home. This cast of characters will be utilized for outreach and education for parents and children.



Riley Raccoon and Family

Upper Basin Remedies

During 2012, EPA completed the revised cleanup plan, RODA, for the Upper Basin. This document outlines \$635 million dollars of work over approximately 30 years. The RODA was significantly scaled back from the original Proposed Plan of \$1.35 Billion as a result of input from the public. The Upper Basin RODA is an interim remedy and covers a portion of OU-3 including the South Fork of the CDA River and its tributaries downstream to where they combine with the North Fork and some work in the "Bunker Hill Box" where EPA began cleanup in the 1980s. Along with the RODA, EPA released for public review a 10-year Superfund Cleanup Implementation Plan (SCIP) that outlines the types of work and pace of the cleanup during this time frame. The comment period on the SCIP ended on December 6th and EPA is preparing a summary of the comments received and a response. The SCIP will be updated on an annual basis to reflect the progress of the cleanup, lessons learned, and document any changes in the cleanup. These adjustments will form the basis for the BEIPC one and five-year work plans.

To learn more about the Upper Basin RODA: Additional details including technical memos, a map, materials from past meetings, and community involvement documents may be found at: http://yosemite.epa.gov/R10/CLEANUP.NSF/sites/bh+rod+amendment.

OU-2 Phase II Remedial Actions

The Upper Basin RODA includes a number of OU- 2 Phase II cleanup actions to address ongoing water quality issues. During 2012, EPA initiated some of the highest priority actions with pre-design data gathering related to groundwater collection and treatment. The groundwater collection system will include a groundwater collection system along the north side of the Central Impoundment Area (CIA). Activities performed in 2012 included refining a version of the Basin-wide groundwater flow model developed under the Focused Feasibility Study (FFS) effort, to better understand the sensitivity of the groundwater collection system performance to various design parameters and site hydraulic characteristics. In August 2012, EPA conducted field investigations around the CIA, including geotechnical borings, production and monitoring well installation, and aquifer testing. These data collection activities were necessary to fill critical data gaps, develop a more refined local groundwater model, and support development of a basis-of-design for the groundwater collection system.

Concurrent with the CIA investigations, geotechnical explorations and pilot studies were initiated at the Central Treatment Plant (CTP) to support advancement of the treatment plant upgrade design. Geotechnical borings were conducted and test pits excavated at the CTP to assess site stability for plant upgrades. In October 2012, three scale model treatability studies were implemented at the CTP. The findings from these studies will inform the future treatment plant operations, treatment process requirements and design basis for plant upgrades.



Central Treatment Plant (CTP)

The CTP treats contaminated flows from the Bunker Hill Mine and will treat contaminated groundwater from the Box and Upper Basin.

CDA Work Trust Accomplishments

In early 2011, the EPA identified nine sites in the East Fork of Ninemile (EFNM) Creek for priority cleanup by the Trust. These sites were identified in the 2002 OU-3 ROD. During 2011 and 2012, work was begun to further characterize these sites and collect pre-design data. This work included collection of surface and subsurface soils samples, borings through waste areas, installation of groundwater monitoring wells, and collection of surface water and groundwater. The following work was conducted in the EFNM Creek:

- Remedial Design Investigation of Interstate and Success Sites (Interstate-Callahan Mine/Rock Dump, Interstate/Callahan Lower Rock Dump, Interstate Mill Site, Success Mine Rock Dump).
- Remedial Design Investigation of Tamarack Sites (Tamarack Rock Dumps, Tamarack 400 Level, Tamarack No. 5, Tamarack unnamed adit, Tamarack Mill Site).
- Surface water monitoring in the EFNM.
- Remedial Design Investigation of the Waste Consolidation Area (WCA) in the EFNM and development of the 60% design for this project. This site is scheduled for construction in 2013.
- Completion of the 30% design for the Interstate Callahan Site. This site is scheduled for construction in 2014.
- Ongoing efforts to address State Historic Preservation Act requirements prior to beginning construction activities.
- Construction of two bridge crossings near Success to facilitate access for future work in the EFNM.
- Completion of characterization work at the Hecla Starr Complex in Canyon Creek.
- Collection of pre-design data at the Lower Burke Canyon Repository (i.e. see discussion in the Repository section of this accomplishment report).
- Ongoing monitoring in the EFNM and Canyon Creek near the Hecla Starr Complex.
- Initiation of designs for Remedy Protection Projects in the Basin.



Soil Screening at WCA



Construction of Bridge Crossing at East Fork Ninemile Creek

Lower Basin Remedies

The cleanup described in the 2002 OU-3 ROD for the Lower Basin includes actions for the wetlands and lateral lakes, the river banks, splay areas and river bed. The objectives of remediation in the Lower Basin focus on reducing human health risks, improving wildlife habitat, and reducing particulate lead in the Coeur d'Alene (CDA) River system. The remedial actions mentioned above, though not called out in the Interim ROD Amendment (EPA 2012), are still being considered for implementation under the 2002 OU-3 ROD.

There are a significant number of data gaps and uncertainties with respect to the fate and transport of contaminants in the Lower Basin which must be addressed prior to commencement of additional human health and ecological remedial actions in this area. Additional data collection and sediment transport modeling are needed to better understand the system and make decisions about cleanup actions. During 2012, efforts were underway by the EPA to address key uncertainties as discussed below. In addition, past Clean Water Act (CWA) sub grants approved by the BEIPC will help provide site-specific information for remedial decisions. All of the BEIPC studies and demonstration projects are now completed.

An Enhanced Conceptual Site Model (ECSM) for the Lower Basin was published in August 2010 by the EPA after vetting and receiving comments from the TLG, Lower Basin PFT, and the CCC. As envisioned when it was published, the ESCM is a living document and will be refined as we improve our understanding of the river system, contaminant extent, and sediment transport.

The EPA continued to collect key data during 2012 that are critical to understanding sources of contaminants and sediment transport; some of these data are essential for development of the sediment transport model. Key data collected in 2012 came from bed and bank coring at eight transects along the CDA River system. Three transects included cores from both the river bed and banks. Five additional transects included cores from the regular Basin Environmental Monitoring Program (BEMP) suspended sediment sampling scheduled to coincide with high flow (flood stage) events and depositional sediment sampling following high flow events, EPA also conducted suspended sediment sampling from boats during the spring peak discharge event that occurred on April 26-28. Other important data were collected from boats during and following the April spring peak discharge event including velocity measurements and bathymetry using multi-beam sonar to determine how the bed is mobilized and changes during high flow events.

Progress on model development was advanced during the year. The model package consists of a nested set of models including one-dimensional and two-dimensional hydraulic models which will ultimately feed a sediment transport model. The one-dimensional model has been developed and calibrated and will be validated after water level logger data are downloaded and processed. Initial outputs from the one-dimensional model have predicted that significant flows overtop the channel banks near Strobel Marsh and such flows were visually verified by personnel on boats on April 27. Initial parameters have been selected and loaded into the two-dimensional hydraulic model and its development is moving forward following on the heels of the one-dimensional model validation.

In 2012, the Lower Basin PFT held two meetings: one on March 14 in Kellogg and one on December 5 in Coeur d'Alene. The March 14 meeting focused on the following updates: 1) results from suspended and depositional sediment sampling from Water Year (WY) 2011; 2) riverbed surface sampling results (Phase I and Phase II); 3) riverbank surface characterization and sampling results; and 4) bank erosion measurements. Other updates included water elevation data evaluations and bathymetry as well as terrain model development. The December 5 PFT meeting provided updates on the following findings from the 2012 field sampling season: 1) bed and bank coring; 2) flood stage sampling; 3) BEMP suspended and depositional sediment sampling; 4) one-dimensional model development update and simulations; and 5) two-dimensional model development update including grid layout and preliminary output such as simulated flows. EPA also provided informational sessions on the CDA Basin and the Lower Basin to the Lower Basin Collaborative on three occasions during 2012.

Spokane River Remedial Actions Completed in Washington

The Washington Department of Ecology (Ecology) in coordination with EPA completed cleanup of heavy metals contamination in shoreline sediments at four public access locations along the Spokane River in Washington in 2012. The work was part of the overall EPA cleanup decision for the Basin OU-3, and was led and funded by Washington State. Cleanup actions were completed at Islands Lagoon (AKA: Centennial Bridge), Myrtle Point (AKA: Plantes Ferry Park), Flora Road, and Barker Road North.

All four recreational sites are used by the public for boating access, swimming, and picnicking. The sites are also located along or near the Centennial Trail bicycle and pedestrian path. Remedial actions included a combination of excavation and disposal of deposited River sediments contaminated with heavy metals from decades of disposal of mining and milling wastes in the CDA Lake/Spokane River upstream watersheds. Actions also included limited re-grading for slope stability, gravel capping, and enhancement/re-establishment of native riparian plants. Contaminated material removed from the sites was sent to an approved landfill. Two of the sites are shown below, prior to and after completion.



Islands Lagoon - Before Remediation



Islands Lagoon - After Remediation



Myrtle Point - Before Remediation



Myrtle Point - After Remediation

Basin Environmental Monitoring

Basin Environmental Monitoring Plan (BEMP)

Over the last several years, EPA has been working to consolidate the Bunker Hill Superfund Site/CDA Basin three primary monitoring plans into one plan for the entire Basin. Historically, there have been three CDA Basin environmental monitoring programs/plans: OU-3 Basin Environmental Monitoring Plan (2004), OU-2 Environmental Monitoring Plan (EMP, 2006) and OU-3 RA Effectiveness Monitoring Program (2007). Working with the TLG and Monitoring PFT, EPA has been integrating the existing plans into a consolidated CDA Basin environmental monitoring plan to: 1) optimize the current monitoring under the various programs; and 2) enhance the overall program operation and effectiveness with respect to changes and adaptive management, laboratory coordination, field sampling, data management, and reporting efforts. This work is still evolving and EPA is currently working with stakeholders on the approach, data, locations, and evaluation process. EPA anticipates having the revised BEMP finalized for implementation in 2014.

The major goal of the revised BEMP is to monitor and evaluate the progress of the remedy in terms of improving ecosystem conditions. Consistent with that goal, the BEMP will provide data relative to the following Basin-wide monitoring objectives:

- Assess long-term status and trends of surface water, sediment, groundwater and biological resource conditions in the Basin using rigorous statistical analysis.
- Evaluate progress toward meeting remedial action objectives (RAOs), applicable or relevant and appropriate requirements (ARARs), and preliminary remediation goals (PRGs).
- Improve the understanding of Basin environmental processes and variability to improve the effectiveness and efficiency of remedial actions.
- Provide data for CERCLA required Five-Year Reviews of remedy performance.

During 2012, the United States Geological Survey (USGS), IDEQ, USFWS and EPA continued BEMP and EMP sampling. Specific activities are outlined below:

USGS collected stream discharge and water-quality data at 18 surface-water stations in the Coeur d'Alene Basin between October 2011 and July 2012. Water-quality samples were collected at 3 stations six times during the year, 11 stations four times during the year, and 3 stations twice during the year. Water-quality sample analyses included field parameters, selected trace elements, nutrients, and suspended sediment.

Dates during which samples were collected:

- October 3 14, 2011 (18 stations during fall base flow)
- February 7 9, 2012 (3 stations during winter base flow)
- February 23 28, 2012 (15 stations during first flush following winter base flow)
- March 17 19, 2012 (3 stations during spring flush)
- April 25 30, 2012 (18 stations during peak snowmelt runoff)
- June 25 July 3, 2012 (15 stations during hydrograph recession)

In 2012, IDEQ administered semiannual groundwater and surface water sampling within OU-2 of the Bunker Hill Box in accordance with OU-2 EMP. The sampling objective is to evaluate the OU-2 Phase I Human

Health Remedial Actions conducted pursuant to the 1992 OU-2 Record of Decision (ROD). In addition, the OU-2 sampling helps to inform and support the implementation of the Phase II water quality remedial actions identified for OU-2. During the 2012 sampling, surface water samples were collected at 20 tributary surface water sites within the Box during the April high flow event and 20 sites during September low flow conditions. Corresponding groundwater sampling was conducted at 75 sites during April and May high flow conditions and 89 sites during September and October low flow conditions. In addition to measurement of typical field parameters, samples underwent laboratory analysis for a number of total and dissolved metals.

USFWS conducted waterfowl surveys from late February to late April 2012 in 23 Lower Basin floodplain wetlands recording observations of waterfowl use and tundra swan mortalities. During June, July and August Monitoring of Avian Productivity and Survivorship (MAPS) of songbirds was conducted for the third year at two locations in the Basin, Smelterville Flats and the Lambrose Property adjacent to the North Fork of the CDA River.

As part of a 5-year monitoring cycle, fish and benthic macroinvertebrate tissue samples were collected at the Pine Creek and Nine Mile Creek monitoring locations during July and August for lead, zinc, and arsenic tissue concentration analyses. Fish population surveys and aquatic habitat data was also conducted at both locations.

In July and August, three sample sites on the East Fork of Nine Mile Creek were added to the aquatic biological monitoring program this year. Sample collection was planned to capture the health condition of aquatic resources prior to the remediation of the Interstate-Callahan Upper and Lower Rock Dumps. Fish and benthic macroinvertebrate tissue samples were collected for lead, zinc, and arsenic tissue concentration analyses at one sample site above the Interstate-Callahan Rock Dumps, one just below the Lower Rock Dump, and one below the Success Mine Site. Fish population surveys and Aquatic Habitat Data collection was also conducted at these locations as well. All three locations will be sampled again post-remediation to evaluate the success and assist in guiding any additional work at this location, or future locations.

In 2012, EPA administered the annual sampling of suspended and depositional sediment within OU-3. Sediment data is collected to enhance the understanding of sediment fate and transport processes, assess changes in the characteristics of sediment and sediment transport over time, and provide data for use in sediment transport models that are being developed for the Lower Basin of the CDA River.

Sampling for suspended sediment is conducted at six locations (or stations) in the Upper Basin and six locations in the Lower Basin. Suspended sediment sites are sampled up to four times a year, to coincide with high-flow events when greater amounts of sediment are eroded and transported in the river system. The timing of and location of high-flow suspended sediment sampling coincides, where feasible, with surface water quality sampling conducted by USGS in support of the BEMP. Analysis on suspended sediment is performed for seven metals as determined by the Ecological Risk Assessment (EPA, 2002) to be contaminants of ecological concern.

Depositional sediment sampling is conducted from within-bank areas and floodplain locations to provide data on the amount and characteristics of sediment deposited by high-flow events. The resulting data are indicative of the physical and chemical characteristics of sediment deposited after a given high-flow event and can be used to assess potential risk to human and ecological receptors in these areas. Depositional sediment samples are collected annually following the spring runoff, but samples may also be collected following large flooding events that occur before the spring runoff (to assess the characteristics of sediment deposited before later spring runoff flows alter the sediment characteristics associated with the larger flood). Five near-channel depositional sampling stations are located in the Upper Basin. Sampling stations in the Lower Basin include 10 within-bank or near-channel locations. Six off-channel locations are used to assess sediment deposition rates and characteristics in shallow lakes and wetlands. These stations provide data on material deposited in wildlife habitat areas and can be used as a measure of sedimentation rates and risk characteristics associated with specific flood events. One additional near-channel depositional sampling station is located downstream of CDA Lake and Post Falls Dam on the Spokane River. This sampling location is used to assess the physical and chemical characteristics of sediment carried beyond CDA Lake. Analysis on depositional sediment is performed for seven metals as determined by the Ecological Risk Assessment (EPA, 2002) to be contaminants of ecological concern.

EPA will continue to make analytical results from site surface water, sediment, and groundwater sampling available on a web-accessible data management system; human health-related data will not be included in this database. For the last several years, EPA has made site environmental monitoring data available through a web page. Nationally, the STORET system is transitioning to the new WQX data management system and the site environmental monitoring data will be accessible at a new website: <u>http://gispub9.epa.gov/cda/</u>. The biological monitoring data and annual monitoring reports are also accessible at EPA's web page under Technical Documents at: <u>http://yosemite.epa.gov/R10/CLEANUP.NSF/sites/cda</u>. If needed, EPA will assist interested stakeholders in accessing the information.

Other BEIPC Activities and Responsibilities:

Lake Management Activities

The Lake Management Plan (LMP) developed by the Coeur d'Alene Tribe and the IDEQ was finalized in 2009. Since then the Tribe and IDEQ have been implementing core aspects of the LMP. LMP related accomplishments in 2012 consisted of the following:

Science Core Program

- In February, Tribal and IDEQ staff held a comprehensive meeting on the science program; reviewing data results collected through 2011, and planning for the 2012 monitoring season.
- Routine lake monitoring on eight sampling visits was conducted by Tribe and IDEQ staff.
- LMP staff produced a draft 2010 water quality monitoring report for CDA Lake and provided it to the TLG for review.
- IDEQ began a pilot project of collecting samples in selected bays for pico-plankton (very small but highly productive algae) and heterotrophic bacteria.
- IDEQ began a pilot project of collecting surface sediment samples in selected bays for presence and abundance of benthic invertebrates, along with trace metal concentrations.
- The Tribe began a project to measure heavy metal concentrations in zooplankton of two size fractions. Sampling was done at sites C6, C5 and C4. This is the beginning of measuring metals transfer through the lake trophic levels.

- IDEQ completed rooted aquatic plant surveys within Loffs, Half Round, Echo, Carlin, and Turner Bays. Sampling of plants within quadrants by SCUBA is used to characterize plant community diversity, and measure collected plants for biomass, and plant tissue content of phosphorus, nitrogen, and trace metals. In 2012, no Eurasian watermilfoil was found within these bays, or in Windy Bay where it was found growing in patches in 2011. Annual reports of the plant surveys are forwarded to Avista Corporation. IDEQ is a cooperative partner under Avista's aquatic plant management program for non-Tribal waters.
- The Tribe implemented an aggressive milfoil treatment program in its waters during 2012. Work included: 1) 500 acres of milfoil-infested waters underwent herbicide treatment; 2) bottom barriers were placed over dense milfoil mats located along shallow shorelines; and 3) divers used suction dredging to remove scattered milfoil along the banks of the St. Joe River. The Tribe also conducted pre and post treatment monitoring to determine efficacy of treatments as well as conducted water quality sampling during the treatments. All herbicide treatments were conducted using containment booms to provide for increased effectiveness.

Education & Outreach Core Program

- LMP staff created and continued to maintain a Facebook page with items relating to activities and information of the lake management plan.
- In June, the final Lake*A*Syst materials specific to the Coeur d'Alene Lake Basin were received from the contractor, the Lake*A*Syst coordinator for the Bonner Soil & Water Conservation District. LMP staff conducted further refinement edits. A final draft will be completed in early 2013.

Lake*A*Syst is a voluntary program to encourage citizens to learn about home, land and watermanagement practices posing threats to water quality, and Best Management Practices that can be applied to lessen land-use impacts. LMP staff will begin to implement this program with home owners and lake associations within the Coeur d'Alene Lake Basin in 2013.

• In June, LMP staff conducted training for camp counselors at Camp Cross in Loffs Bay. This was the second year of this training program. A presentation on water quality basics is given and camp staff is trained on: making water clarity measurements with a Secchi disc; collecting water samples and then measuring for pH and dissolved oxygen; collecting aquatic insects along the lakeshore and basic identification; and doing rake tosses for collection and identification of rooted aquatic plants. Camp staff is given equipment and supplies to conduct this water quality sampling with summer campers.

This same training was also given in June to camp counselors at Camp Four Echoes, the Girl Scout camp in Windy Bay. Camp staff used the training to implement water science activities during their "Water, Water, Everywhere!" camp.

- For the third consecutive year, LMP staff participated in jointly staffing a water quality educational booth at the North Idaho Fair in August, with partners from EPA and BEIPC.
- On September 11, LMP staff conducted an evening science workshop, "What's Your Water Quality IQ," for area citizens at the Coeur d'Alene Tribal Wellness Center in Plummer.

- Throughout 2012, LMP staff provided updates on LMP activities to a variety of community groups. LMP staff was also involved in the WSU Tribal Leadership camp in Pullman, the Coeur d'Alene Tribe's Rock'n the Rez camp, Women in Science Fair at NIC, and Science Day at Ramsey Elementary School. Staff also presented at the Osprey Cruise sponsored by the Coeur d'Alene Chamber of Commerce
- LMP staff visited the Water Resources Center on the campus of Walla Walla Community College. A presentation of this visit and information gained was given to University of Idaho staff associated with the development of the Community Water Resource Center at the Harbor Center facility.

Nutrient Inventory & Nutrient Reduction Core Program

- Tribe and IDEQ staff conducted a third year of water quality sampling in the St. Maries/St. Joe River watersheds as part of the Nutrient Source Inventory that was developed in the early spring of 2010. In December, staff held a coordinating meeting
- Planning began, including the permit process, for the initial river bank stabilization project on the St. Joe River utilizing Avista funds under Section III of the Idaho State §401 WQ Certification agreement (FERC relicense). This stabilization project is about 1 mile of river bank along the Shadowy St. Joe Campground wildlife/wetland area. This is a cooperative project with Avista, IDEQ, IDFG, Benewah Soil & Water Conservation District, Natural Resource Conservation Service (NRCS), and Idaho Soil Conservation Commission. The project will begin in 2013. IDEQ continued a survey of erosion bank pins along the St. Joe River from St. Maries upstream to St. Joe City.
- In November, the §319 grant project for river bank stabilization along the CDA River in the Medimont area began. This project is sponsored by the Kootenai-Shoshone Soil & Water Conservation District. About 4,000 feet of river bank (IDFG property) will be treated using the standard NRCS design. Cost share funds are from Avista under Section III of the relicense agreement and from IDFG.
- The Tribe has begun using funds obtained through a FERC relicensing settlement with Avista Corporation to initiate the development of erosion control engineering designs for six St. Joe River bank sites. Design work should be completed during the summer of 2013. Implementation of the first three sites should begin during the fall/winter of 2013/2014.

Partnerships with Other Entities

- LMP staff continued to be involved in the CDA River and Lake Tributaries Watershed Advisory Group (WAG), and the St. Joe/St. Maries Rivers WAG. These WAGs have completed 5-year reviews of existing TMDLs for these water bodies.
- LMP staff worked with the BEIPC Executive Director to provide LMP activity updates to the TLG, CCC, and BEIPC during quarterly meetings. LMP staff also provided LMP activity language to be included in this 2012 BEIPC Accomplishment Report, the 2013 BEIPC annual work plan, and the 2013-2017 BEIPC 5-year work plan.
- LMP staff participated in EPA meetings of the lower CDA River Project Focus Team.

• LMP staff provided review and comment to land use applications throughout the Basin where there can be potential impacts to Lake or tributary water quality.

This continued level of coordination with BEIPC forums maximizes opportunities for information exchange and advice, while recognizing that IDEQ and the Tribe retain their respective decision making authorities.

Flood Control and Infrastructure Revitalization

The BEIPC through the office of the Executive Director continued to work with the Idaho Silver Jackets Working Group including Shoshone County, U.S. Army Corps of Engineers, FEMA, Idaho Bureau of Homeland Security, Idaho Department of Water Resources, and the National Weather Service to develop an approach to dealing with potential flooding problems and levee management in the Upper Basin. These organizations established and formalized the implementation of the CDA River Watershed Management Group to develop and implement a shared watershed flood risk mitigation and floodplain management vision and plan for the CDA River watershed from the South Fork headwaters to Harrison, Idaho.

The continuous inter-governmental collaborative group will develop a unified community vision and plan for managing the floodplain and flood risk and identify strategies that the community can pursue in the near and long term to mitigate flood risk and manage floodplains by implementing the following:

- Increase and improve flood risk communication and outreach among local, state, Tribal and federal agencies;
- Lead and facilitate strategic planning and implementation of mitigation, response and recovery actions to reduce the threat, vulnerability and consequences of flooding in the watershed;
- Create or supplement a process to collaboratively identify issues and implement or recommend solutions;
- Identify and implement ways to leverage available resources and information between agencies;
- Increase and improve flood risk communication and outreach;
- Promote wise management of existing and future flood control infrastructure and the investments made in those structures;
- Work with the U.S. Army Corps of Engineers Institute for Water Resources to develop a process that will be effective with the stakeholders and political environment in the watershed;
- Collect and repackage existing watershed data, including existing hydraulic modeling information, to conduct a preliminary assessment of flood risk in the watershed;
- Identify actions/strategies that can be implemented with available resources and programs to reduce flood risk.

The BEIPC continued to assist Upper Basin communities and utilities in pursuing funding to implement the Upper Basin Drainage Control and Infrastructure Revitalization Plan (DCIRP). A number of the priority drainage control projects and roads needs in the DCIRP are now planned to be implemented as remedy protection projects and in the Paved Roadway Surface Remediation Program included in CERCLA/Superfund cleanup activities.

Natural Resources Restoration

The CDA Basin Natural Resource Trustees have implemented a number of restoration projects within the Basin. The Trustees include the USFS, BLM, USFWS, the Coeur d'Alene Tribe, and the State of Idaho; represented by IDFG and IDEQ. The purpose of the Trustees' restoration projects is to restore natural resources injured due to the release of hazardous substances as a result of mining and mining related activities in the Basin. The Trustees completed or are working on a number of projects throughout the Basin and upon request, provide updates to the BEIPC at quarterly meetings. In 2012, projects included ongoing monitoring at the Pine Creek restoration site, ongoing monitoring of the agriculture to wetland conversion project in the Lower Coeur d'Alene River, and land acquisition along Robinson Creek. These projects were planned and authorized through the Coeur d'Alene Basin Interim Restoration Plan that was approved in 2007.

Throughout 2012, the Natural Resource Trustees and Restoration Team started developing the foundational work that would assist them in the development of the Coeur d'Alene Basin Restoration Plan Environmental Impact Statement (RPEIS). The team started developing the RPEIS mid-to-late fall and will continue working together on the document while coordinating with EPA in their remedial efforts as identified in the 2012 Interim ROD. Work that was conducted in 2012 includes, but is not limited to:

<u>Pine Creek Restoration</u>

Ongoing monitoring of 21,000 riparian plantings that were installed in 2010 and 2011, together with trench planting of an additional 5,000 nursery plants in 2012. In addition, flow deflectors using root-wads, boulders and trees were installed at various locations to improve bank stability and provide fish habitat.

Wetland Restoration in the Lower Basin

Ongoing monitoring of wetland plant growth, vegetative weed management, wild rice plantings, and water level management (i.e. maintenance of water pump and repair of dikes).

<u>Robinson Creek</u>

An additional 10 acres adjacent to the original Robinson Creek property was purchased by the IDFG utilizing Natural Resource Damage Assessment (NRDA) settlement funds and was incorporated into the Coeur d'Alene River Wildlife Management Area complex. Extension of the property boundaries facilitates more flexibility in restoration design and water level management to benefit wildlife in general and tundra swans in particular. IDEQ, IDFG, and consultant, Terra Graphics are currently collaborating on conceptual designs of the water management system for restoration.

The Trustees also continued to coordinate with the BEIPC through Project Focus Teams and BEIPC quarterly meetings.



Wetland Remediation and Restoration Areas in the Lower Basin



Challenges Ahead

As in past years, the cleanup effort in 2012 was mostly focused on human health risks resulting from contaminated residential and commercial properties with some work performed on ecological problems by the CDA Trust. Property remediation in the Box has been certified complete with about 3,200 properties involved; remediation of paved road surfaces in the Box and Basin will begin in 2013. About 3,000 properties have been remediated in the Basin and EPA and IDEQ expect to complete most of the property cleanup in the Basin from Harrison to Mullan over the next three years; unpaved road surface remediation began with a pilot project in 2012 and is expected to be completed in 2013 throughout OU-3. While human health remains a priority, EPA has begun efforts on cleanup work in fish and wildlife habitat areas, surface and ground water, and inactive mine and mill sites working with the BEIPC, IDEQ, the CDA Trust, other cooperating agencies and stakeholders. To accomplish this work, the existing RODs for the Basin and the remaining work in OU-2 of the Bunker Hill Box were addressed with the Upper Basin RODA approved in August 2012.

Besides the RODA for the Upper Basin, the Lower Basin PFT is continuing work on Lower Basin ecological issues and project planning. Because the CDA River system contains millions of tons of contaminated sediments, a portion of which is moving downstream every year, recontamination from annual flooding is a major focus for the PFT.

Other major challenges include: managing the ICP; developing additional waste repositories for disposal of remedial action and ICP wastes; implementing the RODA for the Upper Basin; assisting the community in implementing an infrastructure revitalization and storm water drainage control program; developing a solution to major flooding issues in Lower Pine Creek and the South Fork of the CDA River; and continued coordination with the CDA Tribe and State's efforts to implement the 2009 Lake Management Plan.

With the ASARCO bankruptcy settlement and the Hecla settlement, a large amount of funding is available for environmental remediation and natural resource restoration actions. Careful action through the implementation of the Upper Basin RODA any additional needed amendments plus diligent work on the part of the Natural Resource Trustees is necessary to ensure that the available funds are expended in a judicious manner. Assuring sustainable funding intended to advance cleanup as planned in the RODs and amendments, along with operation and maintenance of the implemented remedies and restoration of injured natural resources still represents a significant challenge in the future.

