

Basin Environmental Improvement Project Commission

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Terry Harwood Executive Director

October 26, 2022

To: BEIPC Commissioners, Alternates, Staff, TLG and CCC Chairs

From: BEIPC Executive Director

Subject: BEIPC November 9, 2022, Quarterly Meeting

Enclosed is the meeting packet for the upcoming November 9, 2022, BEIPC Meeting. The meeting will be held at the Coeur d'Alene Inn Best Western, 506 Appleway, Coeur d'Alene, Idaho and will begin at 9:30 AM and conclude at 3:30 PM. The meeting will include an Executive Session at the noon lunch for Commissioners, Alternates, and the Executive Director.

If you have any questions call me at 208-783-2528 or e-mail at terry.harwood@deq.idaho.gov.

Terry A. Harwood, P Executive Director

Enclosure

November 9, 2022, BEIPC Meeting Packet Items

- Meeting Guidelines
- Draft November 9, 2022, Meeting Agenda
- Abbreviations and Acronyms
- Draft August 17, 2022, meeting minutes
- Draft 2023 Annual Work Plan
- Draft 2023-2027 Five Year Work Plan

BEIPC MEETING GUIDELINES

- The Executive Director is directed to manage these guidelines.
- The agendas for BEIPC meetings are draft agendas and may be modified by the Commissioners by motion and majority vote at the beginning of the meeting to accommodate unanticipated program and scheduling changes.
- Parties requesting a scheduled time slot on BEIPC meeting agendas to present technical or other information shall discuss the request with the Executive Director a minimum of four (4) weeks prior to the meeting date. If the draft agenda can accommodate the subject matter and time needed for its presentation and at the request of the Executive Director, the requesting party shall forward an electronic copy of the proposal for the item to the Executive Director a minimum of three (3) weeks prior to the meeting date. If the item is of a technical nature, the Executive Director will present the technical proposal and or presentation to the TLG for information and review prior to the BEIPC meeting. TLG consideration of the proposal shall not prevent its presentation to the BEIPC.
- Parties making presentations needing overhead equipment, utilizing Power Point or other projection presentations shall furnish their own equipment or make arrangements with the Executive Director. Projection screens shall be provided by the BEIPC at meeting locations.
- At each BEIPC meeting, an open public comment and presentation period shall be set aside for any member of the public to make comments and presentations concerning the Basin or issues being discussed by the BEIPC and presenters on the meeting agenda. The Executive Director is responsible for adjusting the public comment periods on the agenda to ensure that the public is afforded the opportunity to comment concerning an issue of discussion at BEIPC meetings. Each presenter shall have a maximum of three (3) minutes to comment or make a presentation. These presentation times will be monitored by the Executive Director. Presenters shall be recognized by the Chair of the BEIPC meeting prior to speaking. If a presenter needs more time, they shall make arrangements with the Executive Director for a scheduled time slot on the agenda.
- Issues requiring BEIPC discussion and voting such as programs of work, five year work plans, annual work plans, and budget and funding issues shall be presented prior to the final vote on each such issue. The public comment time slot will be managed as outlined above.

Basin Environmental Improvement Project Commission Draft Meeting Agenda November 9, 2022, 9:30 AM – 3:30 PM CDA Inn Best Western

506 W. Appleway, Coeur d'Alene, Idaho

9:30 AM	Call to Order		
9:35 AM	Approve the minutes from the August 17, 2022, meeting (Action Item)		
9:45 AM	Discussion concerning election of a new BEIPC Chair - Terry Harwood		
9:55 AM	Review Draft 2023 Annual Work Plan – Terry Harwood		
10:35 AM	Public Comment on Draft Plan		
10:45 AM	Approval of Draft 2023 Work Plan (Action Item)		
11:00 AM	Break		
11:15 AM	Review Draft 2023-2027 Five Year Work Plan – Terry Harwood		
11:35 AM	Public Comment on Draft Plan		
11:45 AM	Approval of Draft 2023-2027 Five Year Work Plan (Action Item)		
Noon	Lunch and Executive Session, Commissioners, Alternates and Executive Director under Idaho Code 74 – 206(1)(b)		
1:15 PM	Update on Lower Basin WCA selection process - Patrick Hickey, EPA		
1:30 PM	Update on Construction Season accomplishments in Upper and Lower Basin and Trust Fund Balances – EPA RPMs		
2:15 PM	Results of 2022 Blood Lead Screening Event – Mary Rehnborg, PHD		
2:30 PM	2022 Outreach Report – Terry Harwood, Mary Rehnborg, PHD		
2:45 PM	Update on CCC Activities and Public Input – Jerry Boyd, CCC Chair		
3:00 PM	Final Update on NAS Study of CDA Lake - Jamie Brunner, IDEQ		
3:30 PM	Adjourn		

ABBREVIATIONS AND ACRONYMS

AMD: Acid Mine Drainage

ARAR: Applicable or relevant and appropriate requirement

ARRA: American Recovery and Reinvestment Act

ATV: All Terrain Vehicle

AWQA: Ambient water quality criterion/criteria

BCR: Big Creek Repository

BEIPC: Basin Environmental Improvement Project Commission

BEMP: Basin Environmental Monitoring Plan

BLM: Bureau of Land Management (US Department of the Interior)

BPRP: Basin Property Remediation Program

CCC: Citizens Coordinating Council

CDA: Coeur d'Alene

CDC: Center for Disease Control

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act

CIA: Central Impoundment Area

CICs: Community Involvement Coordinators

COC: Chemical of concern CSM: Conceptual Site Model CTP: Central Treatment Plant

CWA: Clean Water Act

DCIP: Drainage Control Infrastructure Revitalization Plan

ECSM: Enhanced Conceptual Site Model

EFN: East Fork Ninemile

EMFR: East Mission Flats Repository EMP: Environmental Monitoring Program EPA: Environmental Protection Agency

EPA: Environmental Protection Agency ERA: Ecological Risk Assessment

ESD: Explanation of Significant Differences

FFS: Focused Feasibility Study

FS: Feasibility Study

GPM: Gallons per Minute

HH PFT: Human Health Project Focus Team

I-90: Interstate 90

I-C: Interstate-Callahan

I & I: Inflow and Infiltration

ICP: Institutional Controls Program

IDAPA: Idaho Administrative Procedures Act

IDEQ: Idaho Department of Environmental Quality

IDFG: Idaho Department of Fish and Game

IDPR: Idaho Department of Parks and Recreation

ITD: Idaho Transportation Department

LLC: Limited Liability Company

IP: Implementation Plan

LBC: Lower Basin (Citizen's) Collaborative LBCR: Lower Burke Canyon Repository

LMP: Lake Management Plan MAU: Multi-attribute utility

MOA: Memorandum of Agreement NCP: National Contingency Plan NPL: National Priorities List

NRDA: Natural Resource Damage Assessment NRRT: Natural Restoration Resources Trustees

OSWER: Office of Solid Waste and Emergency Response (EPA)

OTI: Osburn Tailings Impoundment

OU: Operable Unit

PFT: Project Focus Team

PHD: Panhandle Health District

PM: Project Managers

PRP: Potentially Responsible Parties

PRRACA: Paved Road Remedial Action Cooperative Agreement

QA/QC: Quality Assurance / Quality Control

RA: Remedial Action

RACA: Remedial Action Cooperative Agreement

RAO: Remedial Action Objectives

RD: Remedial Design
RI: Remedial Investigation

RI/FS: Remedial Investigation/Feasibility Study

RPM: Remedial Project Manager

RP: Remedy Protection ROD: Record of Decision

RODA: Record of Decision Amendment

ROW: Right-of-Way

SARA: Superfund Amendments and Reauthorization Act

SCIP: Superfund Cleanup Implementation Plan

SFCDR: South Fork Coeur d'Alene River SJTI: Superfund Job Training Initiative SOP: Standard Operating Procedure

SSC: State Superfund Contract SST: Superfund Straight Talk STI: Star Tailings Impoundment

SVNRT: Silver Valley Natural Resource Trust

TCD: Typical Conceptual Design TLG: Technical Leadership Group

Trust: Successor Coeur d'Alene Custodial and Work Trust

UMG: Upstream Mining Group UPRR: United Pacific Railroad

USDA: United States Department of Agriculture USFWS: United States Fish and Wildlife Service

USGS: United States Geological Survey

WAC: Waste Acceptance Criteria WCA: Waste Consolidation Area WMS: Waste Management Strategy

WENI: West End Natural Infiltration Area

WCX: Waste Quality Exchange

WY: Water Year

DRAFT BASIN COMMISSION (BEIPC) August 17, 2022 MEETING MINUTES

Basin Environmental Improvement Project Commission Draft Meeting Summary Minutes August 17, 2022, 9:30 AM – 5:00 PM Kellogg Panhandle District Office 35 Wildcat Way, Kellogg, ID

These minutes are summary notes of the reports and presentations and are intended to capture key topics and issues, conclusions, and next steps and not every detail of discussion or individual quotes

Attendees included the following:

Terry Harwood (BEIPC Executive Director)

Commissioners and Alternates present:

Brook Beeler (Washington State), Jess Byrne (IDEQ), Michael McCurdy (IDEQ), Leslie Duncan (Kootenai County), Calvin Terada (EPA), Peter Mahoney (CDA Tribe),

Staff present:

Gail Yost (BEIPC, Assistant to E.D., Note taker), Kim Prestbo for Ed Moreen (EPA), Andy Helkey (IDEQ), Dan McCracken (IDEQ), Sandra Treccani (Washington State), Rebecca Stevens (CDA Tribe), Dana Swift (IDEQ), Jamie Sturgess (Kootenai County), Jeri DeLange (Kootenai County), Jerry Boyd (CCC), Jamie Brunner (IDEQ)

Call to Order

Terry Harwood announced the resignation of Chair Mike Fitzgerald so Vice-Chair Brook Beeler called the meeting to order at 9:33 a.m. She mentioned that the State of Washington hires kids ages 14-17 every summer to pick up litter, and there are several here joining the meeting today.

Approve Minutes from the May 18, 2022 Meeting (Action Item)

Brook asked for any edits to the minutes from May 18th – having none a motion was made by Jess to approve the minutes, Peter seconded, all approved M/S/C

Discussion of Institutional Controls Program IDEQ Statute Process - Andy Helkey, IDEQ

Andy gave a brief overview of the Institutional Controls Program (ICP) Statute Process - House Bill 316, which was passed during the 2021 Legislative Session, made changes in Idaho's Public Health Districts status as a governmental entity - they are no longer considered state agencies and not allowed to have Idaho Administrative Procedures Act (IDAPA) rules. Currently, there is a temporary rule 41.01.01. in which there is a section for the Box and one for the Basin. We are looking to streamline these sections and combine them together in a draft statute to be presented during the 2023 Legislative Session. There have been two public meetings - one back on July 12th and one yesterday August 16th. No public comments have been made at this time, only comments have been made by Terry Harwood. Any questions or comments can be made up until August 26, 2022, and can be sent to Andy Helkey, 1005 McKinley Avenue, Kellogg, ID 83837, or email at Andy. Helkey@deq.idaho.gov, his phone number is (208)783-5781. The IDEQ website has the draft statute and presentation in addition to the letters of support that have been submitted. Expected and existing letters include the CDA Tribe, Hecla Mining, Bunker Hill Mine, Silver Valley Chambers, Shoshone Medical Center, Silver Mountain, Kootenai County Realtors Association, Shoshone County Commissioners, and soon to be Kootenai County Commissioners and Panhandle Health District upon approvals.

Jess wanted to clarify that the changes from the rule to a statute, there will be no administrative changes on how the ICP is run – and Andy stated that IDEQ would be the lead on the statute but Panhandle Health District (PHD) will still cover the day-to-day activities and permitting as they do currently.

Lower Basin WCA Discussion - Patrick Hickey, EPA

Ed Moreen stepped in for Patrick who was not able to attend today. EPA is going to alter their course a little bit before selecting a WCA site in the Lower Basin. They have received some feedback and are currently selecting a Project Focus Team (PFT) as has been done in the past — working with the CDA Tribe, State of Idaho, BEIPC, EPA agency representatives and the Citizens Coordinating Council (CCC) — so that we can move forward with some analyses and alternatives for waste disposal before we proceed. This will result in scheduling impacts for the Lower Basin pilot project and the design process, as the waste disposal is an integral part of the design. We will get thru this as quickly as possible and hope to wrap up in six months, scheduling frequent meetings and moving very rapidly through this process.

Terry further explained that the PFT operate under the auspices of our Technical Leadership Group (TLG) which is one of the two organizations that support the BEIPC – the other group being the CCC. These focus teams are organized to work on specific issues. Jerry Boyd wondered if they could have a CCC meeting as they get closer to the selection of the WCA – and Terry agreed.

CDA Lake and NAS update - Jamie Brunner, IDEQ

Jamie's presentation will provide updates for CDA Lake and the NAS Study. She started with a refresher on what they have asked the National Academy of Science (NAS) to cover in their third-party review of the Lake: evaluate current water quality; impacts of anoxia on fate of nutrients and metals; impacts of reduced zinc levels on algal growth; will metals be released if current trends continue; and relevance of metals release to human/ecological health risks. The NAS final report should be out to the public by the end of September or first part of October. You can follow this information on the following link https://www.nationalacademies.org/our-work/the-future-of-water-quality-in-coeur-dalene-lake. Jamie mentioned that they are hoping to hold another Our Gem Symposium in November and have the NAS there to present their report to the public.

Leading Idaho – Jamie reported that all sub-award agreements are in place for the \$2 million from the Governor's office for phosphorus-reducing projects. There is another \$20 million from ARPA Leading Idaho for CDA Lake that will need to be allocated by end of calendar year 2024 and spent by the end of calendar year 2026. Solicitations for applications are open until September 15, 2022, and can be found at https://www.deq.idaho.gov/coeur-dalene-lake-advisory-committee-notice-of-solicitation. Rebecca Stevens asked if this process would be similar to last time where the CDA Lake Advisory Committee (CLAC) meets and the advisory group would take their recommendations – and Jamie answered yes, the CLAC agreed that they wanted to repeat this process. They are asking for a little more information in the application this time just to expedite the processing.

Jamie Sturgess asked if the NAS allowed the project sponsors to get a review of their draft report – Jamie Brunner stated that they have not seen a draft report yet. She said they were told they would have one seven days before the report went public but not to offer edits as it is a third-party review, so it would just be a heads up for the sponsors to look at before it goes public. Those sponsors would be IDEQ, Kootenai County and EPA.

Migratory Waterfowl Update for Lower Basin - Kim Prestbo, EPA

Kim Prestbo EPA and Brittany Morlin F&WS will talk about their monitoring program with the swans and the work they are doing in the Lower Basin to better understand and measure how the swans are doing. Some of the recent research has been conducted by Mark Jankowski from EPA who has shared many of the slides used today. The Upper Panhandle of Idaho and the banks of the CDA River are along the migratory route of the tundra swans. USGS data collected since 2000 shows that there is a regular passage route that goes through the CDA Basin - this pathway from California to Alaska has been used as their feeding ground for years. The area of focus starts at the confluence of the North Fork and South Fork of the CDA River all the way down to Harrison. Every February to April, approximately 10,000 tundra swans feed in the Lower Basin of the Bunker Hill Superfund Site (BHSS). These very attractive wetlands are unfortunately the recipients of over 100 years of mining waste that was discharged directly to creeks and rivers, with most tailings piles located adjacent to or in our streams. It is estimated that over 100 million tons of mine waste was discharged during this time with the primary metal being lead – 2.4 billion pounds of lead dispersed over 10,000 acres. Much of the mining has stopped and we have improved our laws and mining practices, so this direct deposition no longer occurs. The lower CDA River still acts as a secondary source of this mine waste. Because the river is interconnected with all these wetlands and during times of high flow, the water exceeds the banks of the river and goes out into these wetland areas and ultimately Lake CDA. This is problematic for waterfowl as they feed and forage in the mud on vegetation which exposes them to the lead which is very toxic. Last year was a particularly lethal year for the swans which brought out a lot of concern throughout the community.

Britany reported on the monitoring program – Fish and Wildlife Service have been conducting waterfowl surveys under the BEMP (Basin Environmental Monitoring Plan) since 2005 from Harrison Slough to Whiteman's Slough. It consists of 12 weekly surveys from February to April in the peak of the spring migration. The 10 wetlands highlighted on her slide in this monitoring area are the top waterfowl use areas and over time have remained relatively consistent. Waterfowl use is highly dependent on weather variables and monitoring the shift in use between years helps them to inform remediation and restoration opportunities and strategies, as well as a metric to evaluate the success of providing clean feeding habitat. Tundra swan mortality is another indicator to evaluate the effectiveness of the remedy and restoration. Why the swans – they provide a good indicator of exposure because they are large, white, and highly visible, and their feeding strategies - they could be differentially exposed because of feeding in the mud and ingesting sediment while eating. How does this relate to 2022 – in February there was high, thick ice coverage and Harrison Slough already had over 500 swans compared to other years on average where there would be 11 swans. In March, there was some warmer temps, rain on snow, but no real flooding - there was still shallow habitat available which resulted in peak waterfowl use, over 500 swans for over 8 weeks. 2022 was the highest season total waterfowl observations – 24,515 swans out of 153,470 total – these were just overall observations, so the same individual could be counted on multiple surveys, on average there would be 11,00 observations. Similar numbers were reported at Hepton Lake, which is at the mouth of the St. Joe – 10,000 swans compared to their average of 1,000. Roughly from their vantage points, they counted 390 dead swans – average is 52/year – 77% were near Harrison. Some of the questions they are trying to answer – are they less fit because they did arrive early; are there other factors like drought on their wintering grounds in California; why are more using this flyway – just an increase in numbers; or different routes taken this year. F&WS are talking to folks at other stopover sites on the wintering and breeding grounds to answer some of these questions. What can be done to bring clean feeding habitat online - Schlepp is a 400-acre wetland cleanup and restoration project in which there is high waterfowl abundance and diversity. Since in came online in 2008,

two-thirds of the time it has been number one in terms of overall waterfowl observations and diversity but has inconsistent swan use. In years 2014-15 & 2017-18, there was high swan usage due to water level management which provided some of the only shallow feeding habitat. Lesson to be learned as we are moving into Grays Meadow – making this an attractive wetland for clean feeding. Other mortality preventions -in 2019 Tim Kiser piloted using a handheld laser as the swans landed on the ice, they would perceive this as a threat and fly off, then monitoring where they would land and if this an early season technique they can use. With the waterfowl surveys, they are looking at strategies for effectiveness of the habitat being used and hopefully over time reduce tundra swan mortalities. She stated that EPA is also working on a non-evasive monitoring metric to help evaluate remedy effectiveness. Some of this data should be helpful in finding out what is attracting the tours of waterfowl from using certain wetlands.

Kim restated how difficult it is to understand the swan mortality, why they move to different wetlands, and how to come up with the tools to measure the effectiveness of their strategy. Three areas of focus remain:

Human health – protect people where they live, play, and recreate.

Source control – the primary and secondary source of the sediment that continues to recontaminate these wetlands is the CDA River.

Ecological perspective – to protect waterfowl where they are most exposed and prioritize these wetlands to incrementally create more clean feeding habitat.

There are so many variables that impact the swans. EPA is looking into other tools besides just the monitoring work that is happening to measure the effect of lead exposure now and into the future. It is unclear how the changes in sediment Pb concentrations by just increasing the clean feeding habitat will affect aggregate swan exposures over time. They believe the feeding habits differ with vegetation type, which can vary across the site, making sediment sampling protocols an uncertain representation of swan exposures. They are also looking for a simple and efficient sampling technique that directly indicates waterfowl exposure.

In 2021, their first test case was to sample sediment and fecal samples – why fecal sampling? It represents the swan's exposure directly, it is faster and easier to collect than sediment, and provides information about influence of diet on Pb exposure. EPA followed up on a study conducted in 1994 where data was collected showing the relationship between increased lead in the sediment and lead in fecal samples. Preliminary results from 2021 showed this very strong relationship in sampling completed in four different wetlands – Hepton, Robinson, Schlepp and Strobl's – with varying concentrations of lead sediment. For the 2022 sampling program, there was a huge collaboration between EPA, IDF&G, USFWS, CDA Tribe and WSU. They went out in March; the swans had been in the Basin for a bit of time which turned out to be a good thing as they were already seeing the impacts to the swans and were able to collect a good amount of data. Key data gaps and questions being addressed so far by this project include:

- 1. Does fecal Pb mimic sediment Pb concentration, bioavailability, and origin?
- 2. Is fecal lead and blood lead in swans primarily associated with Bunker Hill mine waste?
- 3. Does plant species influence Pb exposure?
- 4. How do swans use the site?

A study was designed and developed using controls in low, medium, and high sediment Pb sites; to collect a total of 40 birds (test blood, feces, bone by XRF, and physiology measurements); collect 40 wetland fecal samples, 12 sediment samples, and pore water; then track the birds. Airboats were used to collect the swans – Kim showed several pictures of their progress through capture, sampling, banding and release.

What they achieved:

- 17 captured out of 40 targeted
- At Hepton, 2 captured 1 collared and is reporting data
- Low exposure at Schlepp, 7 captured 2 collared 1 is reporting data, 1 bird died
- High exposure at Thompson, 8 captured 2 collared both birds have since died (Necropsy of one bird showed Pb toxicosis, tissues will be recovered and analyzed for Pb)
- Fecal, sediment, and pore water collected from these 3 locations

The data from the juvenile female swan captured at Schlepp shows she spent 22 days at different contaminated sites after capture, then made it to Alaska. They will continue to monitor her and collect data from the collar. Another study from the fecal samples shows all the different types of vegetation eaten at each of the different wetlands. They are starting to correlate how much of the vegetation was in each sample and how much lead was consumed. Certain vegetation will be associated with a high intake of lead and as they restore other wetland vegetation, they can maybe be more protective or deter the swans from eating. Another important data set collected was how to tell if the lead was from Bunker Hill – lead has four naturally occurring stable isotopes and ratios of these different Pb isotopes can be used to distinguish between sources of lead. The Galena lead from Bunker Hill has a unique isotopic signature and they found that 90% of the lead in 14 of 17 swans was from Bunker Hill.

We have discovered that fecal sampling is a promising metric for evaluating both wetland specific and population-wide swan health. The swan diet is very diverse, and some plants may be riskier than others for Pb exposure, maybe nudge the abundance of safe plants species over others as we clean up the site. Terry asked if they had done any work to see if different plants take up lead differently and Kim replied that their evidence strongly suggest that the lead they are taking in is associated with the sediment and not the plants – they are exposed as they forage thru the mud. Kim said they will continue to nail down the correlation between Bunker Hill blood lead, feces, and sediment as they do not have enough information yet. Hopefully they can get out again next year and attach some more collars, and possibly design a fecal sampling monitoring program. Models may determine how reducing lead concentrations increases the health of the Lower Basin swan population. EPA's Office of Research and Development is helping to fund this program and related research along with the collaboration efforts stated before between several agencies, and they hope to have another successful field program in 2023.

Peter Mahoney asked if they could monitor the swans that are getting sick here then dying in other places and Kim answered if they have a GPS monitored collar on, they could track them if they pass away. Peter also wanted to know if they track the age class on the birds that are passing away, does repeated exposure have anything to do with it – Kim asked Brittany and she replied that you age them from what their feathers look like, once they no longer have juvenile feathers it is harder to age them. If we can get more of the GPS collars out, we could maybe track age better with their backand-forth travels. Kim stated the costs of the collars were about \$1300 and was also very labor intensive, a lot of collaboration from the Tribe and F&W Service.

Jerry Boyd asked if there was something the swans could ingest to reduce the lead in their system, and Kim said they are definitely looking at vegetation that would either deter them or be safer. The closest thing they are looking at in reducing the bioavailability is placing biochar into the sediment but have had mixed results with this. Terry said there are some animals that if you feed them other types of material, it will dissipate the stuff in their systems.

Rebecca reminded us that the Natural Resource Damage Assessment Trustees did also prove the tie between the swans and the Bunker Hill Site. She told Peter she will look back at the assessment to see if there was an age of the tundra swans they were seeing because that is telling. The vegetation information was great and will help them on where they can focus some of their restoration efforts.

Summary of August 2022 Blood Lead Screening Event - Mary Rehnborg, PHD

Mary gave a summary on the Blood Lead screening which just concluded last week. Out of 351 total participants, 216 were of the demographic age they were looking for – 6 months to 6 years – and 135 non-eligible participated. The results are still being looked at and follow-ups are currently taking place. She does not have any averages right now but should have more information at the BEIPC meeting in November. As a reminder, blood lead testing is done all year long thru Shoshone Medical Center as a free service. When this program was first started in 1974, the Center for Disease Control (CDC) recommendation for lead levels were at 25 μg/dL, and over the years as we have learned more about lead exposure and human health, has dropped to its current level of 3.5 μg/dL. The most at-risk populations are those who recreate in contaminated areas that have yet to be remediated. Her follow-ups and assessments are always interesting, and identifies where these exposures are coming from, as they could also be occupation related or lead based paint in the home.

Jerry asked if there were any high results and Mary said yes, they were some related to camping in the Lower Basin. Sandra Treccani asked if they resolved the issues with the lead testing equipment recall and Mary said the company was able to fix the problem, but the machine used still didn't have the high detection limit and only detects to a 3.3. More venous draws were done this year because of that and will give us a more accurate analysis.

Calvin Terada from EPA made an announcement that they selected Ed Moreen to replace Jeff Philip who retired in July and will still oversee Bunker Hill work as well as other sites within our region.

Public Input

Terry announced that at the next BEIPC meeting in November he will present the annual and 5-year work plans for the coming year 2023.

Ed Moreen introduced new EPA members Jocelyn Carver, Remedial Project Manager on the Bunker Hill team and attorney, Barbara Gutierrez. He also gave an overview of the Central Treatment Plant (CTP) before our tour today. The work at the CTP went through a long operate design build/operate contract that was completed in October 2021. The keys were turned over to IDEQ to begin operation at this time. It treats the Bunker Hill mine water as well as the Ground Water Collection System which was also constructed under the same contract. It is treating water efficiently and IDEQ is doing a wonderful job managing – for the first time in 20 years EPA is not operating the treatment plant!

Jerry Boyd asked if anyone sees the need for a CCC meeting? Terry explained that we streamlined when we hold CCC meetings – from quarterly meetings now held when we have a topic or project to discuss. If anyone is interested, they can contact either Jerry or Terry.

Jamie Sturgess asked about the WCA location in the Lower Basin and wondered what volume are they looking for as they look at sites, what criteria? Ed explained they are looking at different disposal options and have received feedback from the public and the CDA Tribe. The volumes for the Lower Basin that need to be housed are yet to be determined and it is going to be an evolving

process. The pilot project will be a pretty small quantity, as it is one project focusing on less than a mile segment. It will be a process to figure all this out as they want to minimize the volume removed over the 38 river miles, and to reduce the transport of contaminated materials downstream. Terry thought they came up with an estimated volume and Ed replied that their coring results indicate we may have 10M cu/yd in the riverbed and banks, not looking at any off-bank areas. There is a lot of uncertainty in this number, but it is the number they work with. This would compare to the area of the Central Impoundment Area which holds 26M cu/yd and is 220 acres.

Jeri DeLange introduced herself as a representative for the TLG for Kootenai County.

Meeting was adjourned – loading of the bus will start at 11:15 am.

Tour of Projects

CTP Overlook and Discussion of Central Treatment Plant Operations – Ed Moreen, EPA, Keri St John, IDEQ

Day Rock Mine and Lower East Fork Ninemile Canyon for Project Discussion - Ed Moreen, EPA

E. Fork Ninemile WCA and Discussion – Tamara Langton, EPA

Canyon Creek WCA/Repository Site for Discussion – Bonnie Arthur, EPA

Upper Canyon Creek/Burke and Discussion of the Star Remedial Project – Bonnie Arthur, EPA

DRAFT BASIN COMMISSION (BEIPC) 2023 ANNUAL WORK PLAN

Draft BEIPC Coeur d'Alene Basin Calendar Year 2023 Work Plan

INTRODUCTION

This plan covers proposed environmental cleanup and improvement activities in the Coeur d'Alene Basin scheduled for 2023 by the Basin Environmental Improvement Project Commission (BEIPC) and coordinating agencies and governments in accordance with their responsibilities as stated in the Memorandum of Agreement (dated August 2002). Actions noted in the plan are intended to implement the goals and objectives of the BEIPC's 2023 - 2027 Five Year Work Plan. This plan has been prepared by the Executive Director working with the coordinating agencies and governments with review, input and approval by the Technical Leadership Group (TLG) and review and input from the Citizen Coordinating Council (CCC). The work plan is organized as follows:

Part 1 – Environmental cleanup work performed through the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) by the Environmental Protection Agency (EPA) and State of Idaho through the Idaho Department of Environmental Quality (IDEQ) or work performed by the Coeur d' Alene Custodial Work Trust (CDA Trust) and Potentially Responsible Parties (PRP).

Part 2 - Other Activities and Responsibilities

Part 1 includes work to implement the Interim Record of Decision (ROD) for Operable Unit 3 (OU-3) and the Upper Basin Interim ROD Amendment (RODA) for OU-2 and 3.

Part 2 includes work and responsibilities concerning management of Coeur d'Alene Lake by the Coeur d'Alene Tribe and State of Idaho, restoration of natural resources by the Natural Resource Trustees (Restoration Partnership) and work the BEIPC has assumed based on recommendations from the 2005 National Academy of Sciences (NAS) Study and requests from citizens and communities of the Basin.

The five-year plan outlines activities and work proposed to be implemented over the next five years; however, it does not sequence these activities. This one-year plan establishes and maintains the sequencing of activities that will be needed to complete the activities and work approved in the five-year plan. It may not address all work items noted in the five-year plan because some will not be initiated until later years.

PART 1 - ENVIRONMENTAL CLEANUP WORK

For Part 1, the scope of the proposed work corresponds to the source and level of funding anticipated for 2023 and work anticipated to be performed by the responsible parties. The proposal includes the following work:

- Human Health Issues including Residential and Community Property and Private Water Supply Remediation, Basin Property Remediation Program (BPRP); Lead Health Intervention Program (LHIP); and Recreation Use Activities.
- Repository and Waste Consolidation Area (WCA) Development and Management
- Remedial actions in the Upper Basin including source control actions, water treatment, and related human health activities provided for in the Upper Basin RODA.
- Remedial actions and/or Pilot Projects in the Lower Basin.
- Basin Environmental Monitoring Program
- Operation and Maintenance Responsibilities for Remedial Actions

1.1 HUMAN HEALTH ISSUES

Remediation in areas where human health exposures exist is a remedial action priority as defined in the OU-3 ROD. It includes maintaining the Institutional Controls Program (ICP) implemented by IDEQ and managed by the Panhandle Health District (PHD) and conducting cleanup in residential, and community and recreational areas in the Upper and Lower Basin. The RODA addresses source control remedies, water treatment remedies, and ecological cleanup projects with related human health activities.

1.1.1 Residential and Commercial Property Remediation

During 2022, the Trust's Basin Property Remediation Program (BPRP) remediated three properties and sampled five including residential, rights-of way, and private drinking water sources. Properties remaining to be sampled and/or remediated in the Upper and Lower Basin are those whose owners have refused access or have been unresponsive to repeated contact attempts by the CDA Trust and IDEQ.

The goal for 2023 is to complete sampling and remediation if sampling results are above action levels on parcels whose owners have granted access. Currently, about 204 properties in the Upper and Lower Basin require sampling and 39 properties require remediation based on previous sampling. A total of 3931 properties in the Basin and 3236 properties in the Box have been remediated at the conclusion of 2022. Nine properties in the Box remain to be remediated once owners grant access.

In 2023, EPA will continue to direct and oversee the CDA Trust BPRP work. IDEQ will continue an oversight and coordination role initiated in 2015 and will continue to encourage property owners to have their properties sampled and remediated, if necessary.

1.1.2 Lead Health Intervention Program (LHIP)

Screening of children for elevated blood lead levels has been occurring annually in the CDA Basin since 1996 as a public health service to identify children with elevated blood lead levels and to provide follow-up from a public health professional to identify ways to reduce lead exposures. The screening program also provides information to the Basin cleanup efforts; however, cleanup decisions are not based on annual blood lead testing results since the cleanup goal is to prevent lead exposures that could result in elevated blood lead levels.

In early 2012, the Centers for Disease Control & Prevention (CDC) changed its "level of concern" associated with childhood lead poisoning from a blood lead reference value (BLRV) of 10 micrograms per deciliter (μ g/dl) to a new BLRV of 5μ g/dl. On 10/28/2021, the CDC again lowered the BLRV to 3.5 (μ g/dl) in children. This new lower value means that more children will be identified as having lead exposure allowing parents, doctors, public health officials, and communities to act earlier to reduce the child's future exposure to lead.

Panhandle Health District (PHD) will continue to offer free blood lead screening for residents living within the Bunker Hill Superfund Site boundaries. In addition, PHD will be conducting its annual summer screening with a \$50 incentive for children between ages 6 months to 6 years of age residing within the Basin for 2023.

When an individual is identified with an elevated blood lead, it is recommended their physician be notified and Panhandle Health District will make an appointment for a home visit to identify potential sources of exposure in and around the home. These in-home consultations help PHD, and individual

families identify ways to reduce exposure risks. In addition, PHD can help identify potential exposure pathways the cleanup project can address to prevent lead exposures.

Additional Services offered by PHD's LHIP:

- Year-round blood lead screening and free follow-ups
- HEPA vacuum loan program for cleaning residences
- Education, outreach, and awareness for parents, children, community members, recreationalists, and visitors
- Education classes in local school's grades K-12
- Annual Environmental Science and Health Fair
- Education and outreach at community events
- Sampling of soil, dust, paint, water, and other media as appropriate
- Education and outreach at community events

1.1.3 Recreation Use Activities

In 2016, a Recreation Sites Program was created to address and manage human health risks from exposure to lead and other metals that can occur during recreation activities throughout the Upper and Lower Coeur d'Alene Basin. A strategy document was developed to lay out goals, ways to inventory recreation areas, possible ways to manage risks to people, and current outreach activities. This strategy was issued for public and stakeholder comments and suggestions.

Addressing contamination at recreation sites is different than other cleanup activities. Many places are re-contaminated with each high water or flood event making it difficult to just remove contaminated soil and replace it with clean soil. Other recreation areas are remote, hard to access, and spread out, like hiking trails or ATV areas, making cleanup of the entire area difficult. Overall, different approaches are needed for the various types and locations of recreation sites. In addition, community outreach and education are important ways to help people manage health risks while recreating. An outreach and education program has been in place for years and will continue to be implemented and expanded.

During 2023, the Recreation Sites Program, which includes EPA, IDEQ, PHD, CDA Tribe, BEIPC and the CDA Trust, will meet at least biannually to evaluate and discuss priorities. In the Basin, the CDA Trust expects to start design and cleanup at Lower Basin beach areas, sample other Upper and Lower Basin areas that are known to have high usage by young children and continue to update and install new signage at identified recreation sites. In the Box, IDEQ and PHD will continue to update signage and evaluate access controls at mine and recreation sites where public use has been identified. Recreation sites that were sampled last year will receive signage, as necessary, and removal of material waste piles found in unrestricted areas will be coordinated. Planning for further remediation at the sampled recreation sites will continue. The overall goal is to address and manage human health risks from exposure to lead and other metals while maintaining the benefits of recreation for people's health and the local economy.

1.2 REPOSITORY AND WASTE CONSOLODATION AREA (WCA) DEVELOPMENT AND MANAGEMENT

Repository Background

There are currently three operating repositories within OU-3; Big Creek Repository (BCR), which includes the Big Creek Repository Annex (BCRA), East Mission Flats Repository (EMFR) and Lower Burke Canyon Repository (LBCR). The Page Repository provides for disposal of remedial and ICP wastes in the Box (OU-1 and OU-2).

Repository development and management is an ongoing process that must meet the demand for disposal of historic mining-related contamination for the Basin environmental and human health related cleanup program. This includes the BPRP, and other cleanup actions performed by IDEQ, EPA, and the CDA Trust. It also includes waste generated by private parties and local government agencies under the ICP.

BCR is located at the mouth of Big Creek Canyon and primarily serves the Upper Basin. The BCR has received waste since 2002. The BCR has undergone expansions in 2009 (200,000 cy), 2011 (126,000 cy), and 2017 (127,000 cy) increasing its waste holding capacity. BCR currently has a remaining capacity for approximately 86,322cy. BCRA was constructed in 2015 and is located adjacent to the original BCR, just southwest of the original site on the west side of Big Creek. BCRA uses the existing BCR access, decontamination, and ICP staging facilities. The initial design waste capacity of BCRA was approximately 190,000 cy and has approximately 169,461 cy remaining.

EMFR is located north of Interstate 90 off Exit 39, near Cataldo, and primarily serves the Lower Basin. EMFR has been receiving waste since 2009. The EMFR was designed with a waste capacity of approximately 410,000 cy. At the current and estimated future waste disposal rates the EMFR is estimated to reach the design capacity in approximately 30 years. EMFR has approximately 162,960 cy of volume remaining.

LBCR is located in Burke Canyon on the Star Tailings Impoundment near the community of Woodland Park. The Trust completed the LBCR design and construction in 2015. The remaining capacity at LBCR is about 1,034,796 cy.

The Page Repository is located in the Box just west of Smelterville. Having reached its previous design capacity in 2010, Page is being expanded westward to provide capacity for an additional 700,000 cy of waste. At the end of 2020, 518,522 cy of disposal space was available at Page as noted by the year-end survey. Page will continue to receive Box remedial action and ICP waste in 2023.

Repository Objectives

The Repository Work Plan focuses on the following objectives:

- (1) Box repository operations
- (2) Continued development of Box repository capacity to support remedial action projects in the near term and sustain ICP support in-perpetuity
- (3) Operating BCR, BCRA, EMFR, and LBCR
- (4) Increasing repository volume in the Upper Basin
- (5) Managing the Waste Management Strategy (WMS) including considerations for waste reduction or consolidation.

Specific tasks to achieve these objectives are summarized below:

Box Repository Operations

Page Repository operations will include but are not limited to the following tasks:

- Receipt and placement of ICP and remedial action waste
- Segregation and appropriate re-use or disposal of non-soil waste such as wood and root wads, concrete, asphalt, large (greater than 6 inch) rock fragments and miscellaneous demolition debris.
- Equipment decontamination, site stabilization, erosion and sediment control installation.
- Surface and ground water monitoring and associated reporting.
- Waste stream management to minimize disposal and maximize re-use of high-volume waste materials.

Increasing Box Repository Capacity

2023 work will include placement of concrete debris to continue construction of starter berms and foundation mattress in the Page expansion cells. Geotechnical monitoring equipment will be installed in the new expansion cells.

Basin Repository Operations

In 2023, Basin repositories will be operated to accept waste from some minor remedial actions, the BPRP and ICP. There is significant uncertainty in waste volume projections for infrastructure (ICP) waste. However, Basin repositories are estimated to potentially receive as much as 25,500 cy from all projects in the Basin. Anticipating those needs, the Basin repository operations include but are not limited to the following tasks:

- Receipt and placement of some minor remedial action waste, the BPRP and ICP.
- Segregation and appropriate re-use or disposal of non-soil waste such as wood and root wads, concrete, asphalt, large (greater than 6 inch) rock fragments and miscellaneous demolition debris.
- Equipment decontamination, site stabilization, erosion and sediment control installation.
- Surface and ground water monitoring and associated reporting.

Waste Consolidation Area Development and Operations

There are two Waste Consolidation Areas (WCAs) in the Upper Basin: The East Fork Ninemile (EFNM) WCA and the Canyon Complex Repository (CCR)/WCA.

Development of the EFNM WCA began in 2013. This WCA is being developed to consolidate mine waste materials, including waste rock and tailings from cleanup activities throughout the Ninemile Basin. Wastes from the completed Interstate-Callahan Mine/Rock Dumps, the Success Complex, the Interstate Millsite, and a portion of the Lower East Fork Ninemile Riparian Area cleanups have already been placed and consolidated at this site.

Expansion of the original footprint of the EFNM WCA began in 2019 to provide capacity for waste materials from other Ninemile Basin source sites. Starting in 2022, waste materials from the multi-year Tamarack Complex and Dayrock Complex cleanups began to be placed in the expansion area. These cleanups are estimated to be completed in 2024 after which construction of the final EFNM WCA cover system will begin in 2025 and completed in 2026. In 2019 construction began on the Canyon Complex Repository CCR/WCA, which will receive waste material from Canyon Creek Drainage remedial actions and the material moved from the SVNRT repository site eliminating the contaminated springs discharge. While the facility was designed as a repository, it will function as a WCA for the foreseeable future, accepting waste materials from Canyon Creek cleanups. The CCR/WCA is designed to accommodate approximately 1,200,000 cy in addition to the transferred volume of the SVNRT Repository. In 2023, it is anticipated that approximately 35,000 cubic yards of mine wastes from the Hecla Star Mine Complex cleanup will be placed in the CCR/WCA.

Increasing Upper Basin Repository and WCA Capacity

Increasing Basin long-term repository and WCA capacity will be needed to dispose of the waste material generated by the cleanups identified in the OU-3 ROD and the Upper Basin RODA. The Upper Basin RODA adopted a two-part approach to waste management that utilizes both the WCAs and repositories

A repository siting process, with community input, was developed in 2009 to identify new repository sites to support cleanup activities in the Upper Basin. Based on this process, the LBCR was developed and began receiving waste materials in 2015. Baseline site characterization data was collected, and a 30% design was completed in 2011 at Osburn Tailings Impoundment (OTI) area. Considering remedial project planning, as described in the RODA, the OTI design was put on hold to focus on the more immediate needs for repository capacity in Canyon Creek Drainage.

Lower Basin WCA Development

During 2020, EPA began seeking public opinion for WCAs siting considerations in the Lower Basin. Remedial design work is underway for cleanup of contaminated areas in the Lower Basin; however, waste disposal volumes have not yet been defined. It is anticipated that WCAs in the Lower Basin will be located in close proximity to future project sites if possible.

The repository and WCA design programs are dynamic processes driven by many factors, including waste stream volume estimates, priority cleanup site locations, funding availability and operating mine activities. As cleanup implementation plans are finalized and waste stream volume generation schedules are developed, repository and WCA designs, technical evaluations, and needed property acquisition will proceed at the sites identified through the public planning process.

Waste Management Strategy (WMS) Update

The WMS is a key document that guides repository and WCA siting and waste disposal or re-use. It contains the most current estimates of future waste volumes and implementation schedule forecasts within geographic areas. The WMS is updated, as needed, to incorporate additional information regarding the projected waste volumes generated by OU-2 and OU-3 remedial activity and remaining repository and WCA capacities. The WMS was developed and is amended by EPA and the CDA Trust in coordination with IDEQ and PHD. The Technical Leadership Group and/or the Repository Project Focus Team (PFT) also are involved during key planning intervals.

1.3 REMEDIAL ACTIONS

1.3.1 Upper Basin Remedies

This work includes remediation identified for the Upper Basin, which includes the South Fork Coeur d'Alene River (SFCDR) and its tributaries above its confluence with the North Fork.

The 2012 Upper Basin Interim RODA identified \$635 million dollars of work in the Upper Basin including potential work at 125 mine and mill sites. The 2016 EPA Superfund Cleanup Implementation Plan (SCIP) identifies the priority setting process and outlook for sequencing the work over the next ten years. This document is updated at a minimum of every 5 years, as part of the adaptive management process to incorporate lessons learned as the work moves forward. Additional information about the RODA and prioritization of cleanup actions including technical memos, meeting presentations, and community involvement documents are located at the following web site:

https://www.epa.gov/superfund/bunker-hill

The goals of the RODA include:

- Prioritizing Upper Basin/Box source areas for cleanup to improve water quality and address risks to human health and the environment
- Moving forward on the Operable Unit 2 (OU-2) Phase 2 cleanup to improve water quality in the SFCDR
- Addressing changes in water treatment to accommodate additional contaminated water
- Focusing on source control actions that address particulate lead which poses a risk to human health and ecological receptors, and
- Protecting remedies in community areas from tributary flooding and heavy precipitation events (the construction portion of this work was finalized at the close of 2019 with completion of the Remedy Protection Program).

The prioritized cleanups under the RODA are expected to provide significant improvement to surface water quality and will reduce the contribution of contaminated groundwater to surface water. There will also be reduced particulate lead in the CDA River and downstream areas as a result of this work. These actions in turn are expected to reduce the recontamination potential in the Lower Basin and other downstream areas and reduce risks to humans and wildlife from exposure to contaminated mine waste.

This BEIPC 2023 work plan focuses on those cleanup actions that have either already started or been planned for the coming year. The following is expected to be the focus of the CDA Trust in the Upper Basin during 2023:

East Fork Ninemile Basin

<u>Tamarack Complex Cleanup</u>: The prioritization of the Tamarack Complex cleanup is based on metals loading, accessibility to the public, impacts to adjacent roadways, and the upstream location of the sites relative to other source sites in Ninemile Basin. The design of the Tamarack Complex is complete, and construction is currently underway. Construction will continue in 2023 and is expected to be completed in 2024.

Dayrock Complex and Lower East Fork Ninemile Creek Riparian Area:

Cleanup of the East Fork Ninemile (EFNM) Creek riparian area is divided into Upper and Lower EFNM. Remediation of the upper section of EFNM Creek was completed in 2021. The design for Lower EFNM was combined with the Dayrock Complex design and was completed in late 2021. Construction of the Dayrock Complex/Lower EFNM Creek section is currently underway. Construction will continue in 2023 and is expected to be completed in 2024.

East Fork Ninemile Waste Consolidation Area: First developed in 2013, the EFNM Waste Consolidation Area (WCA) provides a location to consolidate mine waste materials, including waste rock and tailings, from cleanup activities throughout the Ninemile Basin. Wastes from the completed Interstate-Callahan Mine/Rock Dumps, Success, Interstate Millsite, and the Upper East Fork Ninemile Riparian Area cleanups have already been placed and consolidated at this site. Currently, wastes from the Tamarack and the Dayrock Complexes are being placed in the expansion area of the EFNM WCA. These cleanup actions are expected to be completed in 2024 after which a final cover will be installed on the EFNM WCA.

Canyon Creek Basin

SVNRT Repository Remediation and Canyon Complex Repository/Waste Consolidation Area: Similar to the EFNM WCA, the Canyon Complex Repository (CCR)/WCA is being constructed to receive and consolidate wastes from the numerous source areas that will be cleaned up in the Canyon Creek Basin. Construction of the CCR/WCA began in 2019 and was completed in 2022. As part of this work, mine waste from the old SVNRT repository was moved into the new repository in 2021, and in 2022 a final cover system was installed over the wastes placed in the facility. The facility will take mine waste from other cleanup sites in the Canyon Creek area beginning in 2023.

Canyon Creek Quarry: As part of the construction activities at the CCR/WCA, the CDA Trust purchased a 23-acre parcel that is used as a source of uncontaminated rock and gravel to use as clean fill materials. This quarry property is located 2.7 miles east of CCR/WCA. In 2023, work will continue at the Quarry to haul uncontaminated rock and gravel fill for future use at cleanup sites in the Canyon Creek area.

Hecla Star Mine Complex: The Hecla Star Mine Complex design was finished in 2022. Cleanup of the Hecla Star Mine Complex will begin in 2023 and will include removal of mine wastes, placement of clean backfill materials, reconstruction of Burke Road and Canyon Creek following removal of mine wastes, and installation of a concrete box culvert to convey Canyon Creek flows through a portion of the site. Cleanup will last 4 construction seasons and is anticipated to be completed in the fall of 2026.

<u>Canyon Creek Designs/Investigations</u>: Design activities for the Flynn and Black Bear Fraction Mine sites were initiated in 2022 and the design is planned to be completed in 2023. Design investigations also will continue in 2023 at the Standard-Mammoth Reach, the Frisco Reach, the Gem Complex, and the Lower Canyon Creek Riparian Area.

Central Treatment Plant/Central Impoundment Area

In Kellogg, work under the Corps of Engineers Design/Build/Operate Contract to AMEC/Foster Wheeler (now Wood) is completed for construction of the Central Treatment Plant (CTP) Upgrades and new Groundwater Collection System (GCS). In October 2021, IDEQ assumed operations and maintenance of the CTP/GCS using Hecla settlement monies that had been placed in a Registry Account Fund for the purposes of performing mine impacted water collection and treatment.

The CTP upgrades were necessary to treat additional influent flow from the GCS, improve system reliability, meet current, more stringent discharge requirements, and to operate in High-Density Sludge (HDS) mode. These upgrades were necessary for some time to provide dependable and more efficient water treatment of the Bunker Hill Mine discharge water and the groundwater to be collected from the GCS near the Central Impoundment Area (CIA). The Bunker Hill Mine water has been and continues to be treated at the CTP. The upgraded CTP was designed to treat influent flows at rates that nearly triple the current rate of base flows from the Bunker Hill Mine. Excess flow from the Bunker Hill Mine will be diverted to in-mine storage. The old plant was not capable of meeting discharge standards when operated in HDS mode; the newly upgraded plant, operating in HDS mode, results in much less sludge production, more efficient operating conditions, and the need for fewer sludge ponds being constructed over time.

The GCS project includes an approximate 8,000-linear feet cutoff wall between the CIA and Interstate 90 (I-90), a series of extraction wells, and a conveyance pipeline to the CTP that extends along the north side and over the top of the CIA. Groundwater flow and strength (concentration of metals) varies from base flow/strength (late summer/winter) through maximum flow/strength (spring runoff).

Following treatment, the effluent (combined mine water and extracted groundwater) discharged from the CTP to the SFCDAR must be in compliance with current water quality standards. The removal efficacy from the newly upgraded CTP is excellent, showing over 99% removal for zinc. EPA is also monitoring phosphorus and the removal efficacy ranged from 92% to 99% between August 2020 and September 2021, which is also very good! On an average basis, the GCS is expected to result in significant removal of dissolved metals, the most notable of which is zinc that was being discharged to the SFCDAR from groundwater interaction.

1.3.2 Lower Basin Remedies

Work described in the OU-3 Interim ROD for the Lower Basin includes actions for wetlands and lateral lakes, riverbanks, splay areas, riverbed dredging, and cleanup at identified recreational areas along the Coeur d'Alene River. Objectives of remediation in the Lower Basin focus on reducing human exposure to lead-contaminated soils and sediments, improving water quality and reducing particulate lead and other heavy metals in the Basin ecosystem.

The Draft Final Riverbed Management Plan (RMP) was completed in June 2021. The purpose of the RMP is to guide the interim remedy for the Lower Basin riverbed and banks by providing information and analyses for selected integrated remediation scenarios for the riverbed and identifying high-priority riverbank segments for removal or stabilization. The RMP targets areas within the channel for active remediation and divides the riverbed into sediment management areas (SMAs), evaluates the effects of remedial technologies, and identifies areas for natural recovery; the RMP will feed into a broader Lower Basin Prioritization Plan (LBPP) that is currently under review. The purpose of the LBPP is to provide an initial approach toward remedial action and related data gap prioritization, to aid in pilot project selection, and to apply an adaptive framework to guide pilot projects and remedial actions in the Lower Basin. Additional investigation in the channel and the floodplains will be used to inform the conceptual design and feasibility of specific pilot projects that are being considered for implementation over the next two to five years under the LBPP. The results of these efforts continue to be shared with the subgroups of the BEIPC (e.g., Lower Basin PFT (LBPFT), TLG and CCC), interested stakeholders, and citizen groups.

Informed by the Lower Basin Project Selection Process and LBPP, EPA will continue to coordinate with the Restoration Partnership and various landowners in 2023 to characterize and identify off-channel areas for remedial actions. Construction is underway at IDFG-owned Gray's Meadow to create clean

waterfowl feeding habitat at one of the habitat areas that scored well using the multiple objective decision analysis process. Remedial action and restoration construction will continue at Gray's Meadow in 2023 and is planned for completion in 2024. Two important infrastructure projects associated with Gray's Meadow were completed in spring of 2022: 1) relocating the Cave Lake discharge point from Black Lake to the CDA River (completed in March 2021); and 2) relocating the Lamb Peak pump discharge from Black Lake to the CDA River, widening the access road and replacing the vehicular bridge (completed in June 2022). During the agricultural land use period, nutrient-rich water from Gray's Meadow was discharged to Black Lake, affecting water quality in the lake. Relocating the water transfer locations, remediating the soil, and improving processes for managing water levels at is expected to improve water quality in Black Lake and throughout the watershed.

To address contaminated sediment transport in the CDA River channel, the CDA Trust has begun planning and remedial design characterization for an in-channel pilot project to be implemented in the upper part of the River's Dudley Reach. The exact location may be adjusted or the technology may be modified, through adaptive management, as new information is obtained. Currently the focus area is an approximate one-half mile scour hole located about two miles downstream of the Mission Boat Launch (near River Mile 157). The Dudley Reach is considered the most significant upstream lead loading segment in the river system. The technologies to be constructed are a cap/dredge hybrid. Unarmored riverbanks adjacent to the pilot segment will be addressed along with the pilot project. The pilot will help inform future approaches to cleaning up mine waste in the river channel and allow evaluation of methods to prevent mine waste from moving downstream while getting some cleanup done. In fall 2022, sediment cores will be measured and collected from the riverbed and side slopes of the Dudley Reach for geotechnical and environmental analysis. This riverbed pilot design will be developed to the 30% stage but may not proceed until further analysis of disposal alternatives to serve this project are completed.

In 2022, the CDA Trust also began remedial design characterization in the Cataldo Reach of the CDA River. Characterization activities in the Cataldo Reach will continue in 2023 and the information obtained will be used to inform prioritization of potential pilot projects to address contaminated sediment transport in this reach.

Several recreation areas will be considered by the recreation subgroup to address lead exposure associated with recreating along the river channel as it is an ongoing concern, as discussed in the Recreation Use Activities Section.

Future remedial work in the Lower Basin requires design and construction of Waste Consolidation Areas (WCAs). The WCA is similar to the Upper Basin repositories in that it will undergo strict engineering design to prevent the release of held contamination to surface and groundwater as well as prevent release to the air. Once closed, a WCA will also follow an operations and maintenance plan which will include monitoring for contaminant release. While the WCA is similar to a repository, notable differences include:

- 1) The WCA is to be placed in close proximity to the project site in order to support remedial technologies chosen, reduce transportation costs, and decrease impacts on local communities,
- 2) The WCA will remain in operation until the project waste capacity is reached, be secured, undergo the prescribed operations and maintenance plan, and be and monitored into perpetuity,

3) The WCA will only accept waste from the specific project and will not take on ICP or other project wastes.

During 2021, geotechnical evaluations and surveying were performed on two CDA Trust-owned properties in consideration for a potential future WCA site. The WCA would support the waste disposal needs of the Lower Basin Dudley Reach Pilot Project(s). During 2022, the properties were monitored to assess groundwater elevations.

In 2022, the CDA Trust started preliminary design of the South River Road Quarry (SRRQ) near Rose Lake. The SRRQ will support various Remedial Actions being conducted as part of the environmental-cleanup-related actions in the Lower Basin of the Coeur d'Alene River. When completed the SRRQ will provide clean construction materials including general fill, crushed gravel of various gradations, road surfacing materials, riprap) for the various Remedial Action (RA) sites. The design is currently at 30% and on hold until development of the WCA.

This work in the Lower Basin will be accomplished while continued cleanup focuses on human health and addressing source stabilization in the Upper Basin. The Upper Basin cleanup is expected to compliment cleanup activities in the Lower Basin by reducing the loading of contaminated materials to the watershed and reducing the potential for recontamination from the Upper Basin to the Lower Basin.

1.4 BASIN ENVIRONMENTAL MONITORING

EPA has continued to optimize and restructure the Basin Environmental Monitoring Program (BEMP). For over 15 years, EPA has implemented the Basin Environmental Monitoring Program (BEMP) to meet the following objectives:

- Assess long-term status and trends of surface water, sediment, groundwater, and biological resource conditions in the Basin.
- 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.

Highlights of the data collected through the BEMP are in the 2020 Five Year Review (9/2021). More details are included in the USGS document: Trends in Concentrations, Loads and Sources of Trace Metals and Nutrients in the Spokane River Watershed, Northern Idaho, Water Years 1990-2018 (Zinsser, 2020), which is posted on the USGS publications website (https://pubs.er.usgs.gov/publication/sir20205096). Annual USGS surface water sampling results are made available on the EPA Webpage. Results for 2021 are summarized in the following report: Coeur d'Alene Basin Environmental Monitoring Program – Surface Water, Annual Data Summary – Water Year 2022 - https://semspub.epa.gov/src/document/10/100421937

EPA continues to work with the CDA Trust, IDEQ, USFWS, USGS, and the CDA Tribe to update the Basin Environmental Monitoring Plan to guide the collection, analysis, and interpretation of environmental data while providing flexibility for adaptive management as remediation work is completed and information regarding site conditions evolves (Maul Foster & Alongi [MFA], 2021).

The updated and revised BEMP finalized in 2021 is structured into three geographically based tiers:

- Site-specific remedial action (RA) effectiveness and performance monitoring.
- Area-wide monitoring focused on geographically related areas and typically encompassing multiple RA sites (e.g., watersheds)
- Bunker Hill site-wide and long-term monitoring with a focus on surface water throughout the entire site.

The updated BEMP and the Area-wide Remedial Action Effectiveness Monitoring Plan for Ninemile Basin were distributed for broader review and revision throughout 2020 with finalization in 2021. In 2022, a draft Area-wide Remedial Action Effectiveness Monitoring Plan for the Canyon Creek Basin was developed and will be finalized in 2023. A BEMP workgroup meeting was reestablished in 2021, with annual meetings during Spring field planning season to effectively coordinate and communicate BEMP activities across agencies/organizations.

Operation and maintenance of the Groundwater Collection System (GCS) adjacent to the CIA in Kellogg and the upgraded Central Treatment Plan (CTP) is performed by IDEQ since the system was transferred to IDEQ in October 2021. As part of the BEMP surface water monitoring network, the USGS collects discharge and water-quality samples from two stations located at Kellogg and Smelterville on the SFCDA river above and below the GCS. For a limited period following construction and optimization, additional groundwater and surface water samples will be collected more frequently to ascertain the overall efficacy of the GCS. Additionally, the USGS conducted a baseline seepage investigation in August 2017 (prior to construction) to define the distribution of groundwater seepage to the SFCDAR in the reach between Kellogg and Smelterville, and to quantify the metal loading from both groundwater and surface water along the reach adjacent to the CIA. The information gained from this investigation will be compared to a similar study performed following remediation with the GCS in place. The post-remedial seepage investigation was completed in October 2022 and results will be available for review and analysis in 2023.

RA Effectiveness monitoring has been ongoing in Ninemile Creek Drainage since 2012 to establish baseline conditions, help prioritize work, and assess the effect of source area cleanups. The source areas in EFNM Creek continue to contribute, in aggregate, the largest lead and zinc loads to Ninemile Creek. Four remedial actions (RAs) were completed by the end of 2020: Interstate Callahan Rock Dumps, Rex Complex, Success Complex, and Interstate Millsite. The remainder of the priority Ninemile RAs are the Tamarack Complex (2022 through 2024), lower portion of EFNM Creek riparian area, and the Dayrock Complex (2022 through 2024). A portion of lower EFNM riparian area extending downstream from the Success Complex site approximately 1,400 feet was addressed in 2021.

RA Effectiveness monitoring has also been ongoing in the Canyon Creek Basin since 2015 to establish baseline conditions, help prioritize work, and assess the effect of source area cleanups. RA was completed in 2022 at the SVNRT Repository and RA at the Star Complex will begin in 2023. The remainder of RAs in Canyon Creek are being prioritized for cleanup work in the coming years.

1.5 OPERATION AND MAINTENANCE RESPONSIBILITIES FOR REMEDIAL ACTIONS

CERCLA prohibits EPA from use of funds from the Superfund Account on operation and maintenance (O&M) of remedies. The entity responsible for O&M on completed and accepted remedial work may vary. In general, O&M on EPA selected cleanup actions will be performed by the CDA Trust; the State of Idaho; local governmental jurisdictions or parties who are required to perform O&M activities by

judicial or administrative settlement, environmental agreements, covenants, and conservation easements such as projects constructed under the Remedy Protection and Paved Roads Programs or the Institutional Control Program.

PART 2 – OTHER ACTIVITIES AND RESPONSIBILITIES

For Part 2, the scope of this work plan recognizes a number of work items that the BEIPC will be involved in and items of work needed to accommodate some of the recommendations of the 2005 NAS study; BEIPC and agency communications and public involvement activities; State of Washington activities; implementation of the Lake Management Plan by the State of Idaho and CDA Tribe and coordination with activities of the Natural Resource Trustees (Restoration Partnership).

The plan includes the following work:

- IDEQ Lake Management Activities
- Coeur d'Alene Tribe Lake Activities
- Flood Control, and Infrastructure Revitalization
- Communications and Public Involvement
- State of Washington Activities
- Coordination with the Restoration Partnership

2.1 IDEQ LAKE MANAGEMENT ACTIVITIES

The OU-3 Interim ROD did not include Coeur d'Alene Lake in the Selected Remedy. The OU-3 Interim ROD anticipated that the State, Tribe, federal agencies, and local governments would implement a Coeur d'Alene Lake Management Plan (LMP) outside the CERCLA (Superfund) process using separate regulatory authorities. The updated LMP was approved in 2009 and implementation has been underway. The Upper Basin RODA indicated that a remedy for lakebed contamination is deferred contingent upon successful management through the LMP. The LMP's goal is to manage metals in contaminated lakebed sediments through reduction of nutrient inputs basin-wide from point and nonpoint sources. The LMP includes actions related to lake water quality monitoring, coordination among basin stakeholders, education and outreach, and identification of funding sources for lake management efforts.

As of the Summer of 2018, the Coeur d'Alene Tribe (CDA Tribe) asserted that the LMP is inadequate, in itself, as an effective tool to protecting water quality in the Lake due to water quality triggers for lead, phosphorus and dissolved oxygen, in particular, being exceeded. These triggers were developed by the Tribe and IDEQ in the 2009 LMP. As stated in the LMP, if trends show these trigger levels are approached, this will prompt a comprehensive review to guide future management actions.

In response to trends showing some trigger levels being approached (and some exceeded), the State of Idaho enlisted the National Academy of Science (NAS) to perform a third-party review of data to provide insight into nutrient, metal, and dissolved oxygen trends and offer recommendations in data collection to better inform lake management efforts moving forward. The review was sponsored by IDEQ, Kootenai County, and EPA, with support from the Tribe. Observations and recommendations from the 2022 National Academy of Sciences (NAS) report will be used to help inform an appropriate response to undesirable water quality trends. IDEQ staff continues to operate under the LMP as discussions with the Tribe and EPA continue. This work plan includes activities planned for implementation by IDEQ and Tribal staff.

Below are the objectives outlined in Section 3 of the LMP: These objectives are listed in the order they appear in the LMP, which does not necessarily reflect any prioritization.

- 1. Improve Scientific Understanding of Lake Conditions through Monitoring, Modeling, and Special Studies.
- 2. Establish and Strengthen Partnerships to Maximize Benefits of Actions under Existing Regulatory Frameworks.
- 3. Finalize and Implement a Nutrient Reduction Action Plan.
- 4. Increase Public Awareness of Lake Conditions and Influences on Water Quality.
- 5. Establish funding mechanisms to support LMP goal, objectives and strategies.

In 2023, IDEQ staff will implement the following efforts to address objectives outlined above:

Increase Scientific Understanding (LMP Objective 1):

- 1. Conduct water quality monitoring in Coeur d'Alene Lake for metals, nutrients, and physical parameters
- 2. Coordinate with the Tribe and EPA to review NAS conclusions and recommendations to develop a response to lake trends
- 3. Develop modeling objectives to guide selection of appropriate tools for lake management (utilizing NAS recommendations)

Nutrient Reduction and Implementation (LMP Objective 3)

- 1. Work with funding recipients under the Leading Idaho (LI) initiative for phosphorus reduction in Coeur d'Alene Lake to continue developing project agreements and ensure successful implementation
- 2. Work with LI applicants that were not funded to identify other potential funding sources and assist in further project proposal development, where needed
- 3. Analyze lake tributary monitoring collected 2019-2022 to fill gaps in nutrient loading data identified in the nutrient inventory report
- 4. Share relevant data gap monitoring results with stakeholders to aid in decision-making and potential project ranking
- 5. Continue to collaborate on water quality improvement efforts in the Coeur d'Alene Basin with the Coeur d'Alene Lake Advisory Committee, Restoration Partnership, Avista Corporation, the Natural Resource Conservation Service (NRCS), the Soil & Water Conservation Districts, Counties, Cities, and others
- 6. Identify opportunities to align nutrient reduction and remedial efforts in the Lower Basin.
- 7. Continue implementing aquatic plant surveys within the northern lake

Increase Public Awareness (LMP Objective 4)

- 1. Continue to partner with Coeur d'Alene Tribe, University of Idaho (UI), CDA Vision 2030, Coeur d'Alene Regional Chamber of Commerce, and other stakeholders to share information with the basin-wide community through the Our Gem Coeur d'Alene Lake Collaborative
- 2. Continue to participate in The Confluence Project to support Basin high schools by providing workshops and guidance for teachers and students involved in field-based watershed science

- 3. Partner with UI, Coeur d'Alene Tribe, and area high schools and environmental organizations to host the annual Youth Water Summit, the culminating event of The Confluence Project (as pandemic restrictions allow)
- 4. Partner with UI/Community Water Resource Center to support the Bay Watchers program to provide land management information and resources to residents around Coeur d'Alene Lake
- 5. Support the Local Gems program to recognize businesses and organizations that are taking action to protect basin water quality
- 6. Participate in other joint educational and outreach opportunities as time allows

Continued coordination with BEIPC forums will maximize opportunities for information exchange and advice for all the parties that participate in the BEIPC activities. Future coordination with the BEIPC recognizes that IDEQ retains their respective decision-making authorities under CERCLA and the Clean Water Act (CWA) with regards to implementation.

2.2 COEUR D'ALENE TRIBE LAKE ACTIVITIES

As noted, the Lake Management Plan (LMP) was approved in 2009. However, after collecting and analyzing water quality data under an EPA approved Quality Assurance Program Plan (QAAP) the Coeur d'Alene Tribe retracted their support of the LMP in 2019, as an adopting government. The Tribe continues to be concerned about increased pressure on the landscape that may lead to declining water quality, as well as a myriad of other concerns prompted by the Tribe's retraction of support of the LMP. The Tribe detailed their concerns about LMP effectiveness in a written critique. The Tribe has asked EPA to formally evaluate how they will use their CERCLA authorities to address the legacy of mining pollution in Coeur d'Alene Lake. In 2023, the Tribe will conduct the following activities outside of the LMP process:

- Continue to improve scientific understanding of lake conditions through monitoring and modeling of metals, nutrients, and physical parameters.
- Tribal staff will continue to utilize the AEM3D and USGS, WRTDS models data collected from the Lake, meteorological stations, and USGS gage stations
- Tribal staff will continue to implement a Eurasian watermilfoil Treatment Program as well as monitor aquatic plant communities in the southern lake.
- Tribal staff will continue to work with EPA to identify potential opportunities to align nutrient reduction and remedial efforts in the Lower Basin through modeling and coordination. Tribal staff will also continue to participate in the Lower Basin Project Focus Team to assist EPA and the Work Trust on identifying locations for Lower Basin Waste Consolidation Areas.
- Provide updates to draft Lake Status Reports to the TLG for feedback prior to distribution to the BEIPC.
- Tribal staff will continue to partner with the University of Idaho-Community Water Resource Center (U of I CWRC), CDA2030, PHD, CDA Regional Chamber of Commerce, interested citizens, and IDEQ to support the Basin high school students through The Confluence Project (a hands on 'place based' learning program addressing watershed science based solutions), the Bay Watchers Program (a citizen science program with landowners around the Lake), and the Our Gem Coeur d'Alene Lake Collaborative.

- Tribal staff will continue to support The Local Gems program for local businesses through 2023. This program recognizes businesses and organizations that are taking action to protect basin water quality.
- The Tribe will engage with IDEQ on how to assess the findings of the NAS for their 'Status Review and Analysis of Coeur d'Alene Lake Water Quality." The Tribe will continue to request that EPA develops criteria and conducts a review/ evaluation of their decision to "defer" a remedy for the Lake.

2.3 FLOOD CONTROL AND INFRASTRUCTURE REVITALIZATION

Under a 2018 MOA, participating governments of the BEIPC and the Upper Basin jurisdictions (Local Flood Group) will continue to work on potential flooding issues on the SFCDAR and Pine Creek. During 2023 the Local Flood Group and the BEIPC will continue to work with the U.S. Army Corps of Engineers (COE) and Federal Emergency Management Agency (FEMA) to complete a LOMAR to update the 2009 Flood Inundation Maps based on the current flood zone analysis by the COE on a portion of the River from Elizabeth Park to the Theater Bridge in Smelterville. Based on the new flood maps it is anticipated that updated analysis of the need for certified levees in the SFCDAR will be completed in 2023. The working group will continue to support the City of Pinehurst's request for COE assistance in performing a similar flood zone analysis in Pine Creek. Although much of the needed work outlined in the 2009 Drainage Control Infrastructure Revitalization Plan (DCIRP) is now complete, the BEIPC Executive Director will continue to assist Upper Basin communities and utilities in pursuing funding to implement the remainder of the DCIRP.

2.4 COMMUNICATIONS AND PUBLIC INVOLVEMENT

During 2023, the BEIPC Assistant to the Executive Director and agency Community Involvement Coordinators (CICs) will work together to carry out public involvement, communication, and education related to BEIPC and agency activities. Agency CICs may include staff from EPA, IDEQ, and PHD.

The Office of the BEIPC Executive Director, the CCC and agency CICs continue to facilitate the public involvement process in the Basin. The BEIPC Executive Director and/or Assistant, Project Focus Team Chairpersons, and CCC Chairperson may request CIC support for public outreach regarding BEIPC activities. The CICs may in turn request BEIPC support for their agencies' public involvement activities.

Following is a partial list of community engagement activities and coordination opportunities for 2023:

- As required, the BEIPC will hold quarterly meetings open to the public. The CCC will hold meetings open to members and the public as issues or opportunities arise or discussions are warranted.
- The BEIPC will coordinate its annual tour in August of the Basin cleanup with publicity support from the CICs and technical support from agency project managers. The tour is open to everyone.
- The BEIPC/CCC and agency CICs will continue to sponsor activities such as open houses, workshops, training, or public meetings. The BEIPC Assistant and CICs may assist each other to coordinate public education and outreach associated with these events.

- The BEIPC/CCC will lead the development, production and distribution of BEIPC related items and the agency CICs will lead the development, production and distribution of agency items. The BEIPC/CCC and agency CICs will create and process flyers, public notices, newspaper ads, and posting to their respective websites of their meetings and other information. The BEIPC/CCC will also create, process, and distribute their meeting announcements, agendas, and their meeting summary notes and other information by e-mail to CCC members and interested parties. The BEIPC Assistant will update and maintain the BEIPC website.
- CICs will continue to support the CCC meetings, support BEIPC communications, and explore
 ways to maximize the CCC's value to interested local people. Upon request, CIC's may support
 BEIPC with suggestions for publicizing BEIPC events and meetings, participate in distributing
 meeting announcements, posting to social media, or by proposing and/or helping to implement
 communications strategies.
- Upon request, the BEIPC Executive Director will make presentations to public groups and participate in educational forums such as school district Science, Technology, Engineering and Math (STEM) fairs, etc. Assistance from agency CICs may be requested for these efforts. The Director will participate in quarterly press availability sessions, as scheduled by EPA.
- The BEIPC and agency CICs will help organize and participate in a joint booth for public outreach/education at the North Idaho Fair.
- The EPA will publish BEIPC/CCC information upon request in its triannual Basin Bulletin and on the CDA Basin Facebook page.
- CICs work directly with EPA, IDEQ, PHD, and BEIPC project managers as needed to tailor communications outreach and/or education for specific projects under the programs listed in this work plan.
- CICs will report their outreach activities at the quarterly Basin Commission meetings, and activities are often reported and discussed at CCC meetings.

2.5 STATE OF WASHINGTON ACTIVITIES

The Washington State Department of Ecology will continue to monitor the status of previous cleanups along the Spokane River. A sampling initiative started in fall 2022 will be continued. Three beach sites will be sampled for soil, sediment, and surface water, along with measurements of suspended and settled sediment, at low, medium, and high river flow rates. Once completed, Ecology will prepare a report documenting the results. Fall site visits will be performed, along with visual documentation of cap performance and sediment accumulation. A portable XRF will be used to measure contaminant concentrations.

2.6 RESTORATION PARTNERSHIP

The Restoration Partnership (Partnership) is a consortium of the Coeur d'Alene Basin Natural Resource Trustees, comprising representatives of agencies/governments who have management and stewardship responsibilities for fish, wildlife, and other natural resources in the Basin. They are the U.S. Department of Agriculture, represented by the U.S. Forest Service (USFS); the U.S. Department of the Interior, represented by the U.S. Fish and Wildlife Service (USFWS) and Bureau of Land Management (BLM); the Coeur d'Alene Tribe (Tribe); and the State of Idaho, represented by the Idaho Department of Fish and Game (IDFG) and Idaho Department of Environmental Quality (DEQ).

The following natural resource restoration projects will continue to be implemented in 2023.

- Conservation Easements along the Coeur d'Alene River corridor sponsored by the USFWS.
- o Management of a native willow plant nursery adjacent to Hepton Lake on the St. Joe River sponsored by the Tribe.
- o Wetlands enhancement at Hepton Lake on the St. Joe River sponsored by the Tribe.
- o Projects for the replacement of injured/lost tribal cultural services (fish and culturally significant plants) in the Hangman Creek Watershed sponsored by the Tribe.
- o Coeur d'Alene Lake monitoring and modeling sponsored by the Tribe.
- Wetlands restoration implementation/construction at Gray's Meadow along the Lower Coeur d'Alene River by IDFG. This is a joint project with EPA conducting the remediation and the Restoration Partnership conducting the natural resource restoration sponsored by IDFG.
- o Gene Day Pond Public Access Improvements with the Shoshone County Sportsman Association and sponsored by IDFG.
- o Ongoing operations and maintenance for the Schlepp Agricultural to Wetlands Conversion Project with the landowner sponsored by USFWS.
- o North Fork Coeur d'Alene River Conservation Easement sponsored by IDFG.
- Cougar Bay Preserve Wetlands Enhancement and Stream restoration with BLM as the primary sponsor with assistance from USFWS.
- o Lake Creek Watershed Restoration sponsored by the Tribe.
- o Prichard Creek Phase 1: Conservation Easement and Restoration Planning with the Idaho Forest Group and Trout Unlimited and sponsored by IDEQ.
- o Red Ives Creek Restoration Phase II sponsored by the USFS.

In 2023, there will be ongoing coordination with EPA and the CDA Trust on remedy and restoration activities and participation in BEIPC and associated groups and committees. The Trustees will continue to work with the Public Affairs Officers and Communications staff among the Trustees on an Outreach Plan for future restoration project solicitation from the public.

For more information, refer to www.restorationpartnership.org.

DRAFT BASIN COMMISSION (BEIPC) 2023 – 2027 FIVE YEAR WORK PLAN

Draft BEIPC Coeur d'Alene Basin Five-year (2023-2027) Work Plan

INTRODUCTION

This plan for calendar years 2023-2027 covers environmental cleanup and improvement activities in the Coeur d'Alene (CDA) Basin (the Basin) planned by the Basin Environmental Improvement Project Commission (BEIPC) and cooperating agencies and governments in accordance with responsibilities as stated in the Memorandum of Agreement establishing the BEIPC. This plan has been prepared by the Executive Director with review and approval by the Technical Leadership Group (TLG) and review by the Citizen Coordinating Council (CCC) and is based on their recommendations for activities and work to be performed in the 5-year period, 2023-2027. Annual work plans will address specific actions from this five-year plan. This proposed five-year work plan is organized as follows:

Part 1 - Environmental cleanup work performed through the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) by the U.S. Environmental Protection Agency (EPA) and State of Idaho or work performed by responsible parties.

Part 2 - Other Activities and Responsibilities

Part 1 includes work to implement the 2002 Interim Record of Decision (ROD) for Operable Unit 3 (OU-3) and the 2012 Upper Basin Interim ROD Amendment (RODA) for OU-2 and 3.

Part 2 includes work and responsibilities concerning management of Coeur d'Alene Lake by the Coeur d'Alene Tribe (CDA Tribe) and State of Idaho, restoration of natural resources by the Natural Resource Trustees (Restoration Partnership) and work the BEIPC has assumed based on recommendations from the 2005 National Academy of Sciences (NAS) Study and requests from the government agencies, citizens, and communities of the Basin.

PART 1 - ENVIRONMENTAL CLEANUP WORK

For Part 1, the scope of the proposed five-year work plan corresponds generally to the level of federal and state funding and the funding sources anticipated and work expected to be performed by the Coeur d'Alene Custodial Work Trust (CDA Trust) over the five-year period, 2023-2027. The 2023-2027 Work Plan proposes a cleanup approach and a listing of priority activities for the 5-year planning period. The proposal includes the following work:

- Human Health directed activities including Residential and Community Property and Private Drinking Water Supply Remediation (Basin Property Remediation Program, BPRP), and the Recreation Use Activities Program.
- Lead Health Intervention Program (LHIP)
- · Repository and Waste Consolidation Area Development and Management
- Remedial actions in the Upper Basin including source control actions, water treatment, and related human health activities provided for in the Upper Basin Interim RODA.
- Remedial actions and/or Pilot Projects in the Lower Basin and risk reduction activities associated with recreational areas.
- Basin Environmental Monitoring (BEMP)
- Operation and Maintenance Responsibilities for Remedial Actions

PROPOSED ACTIVITY	SCOPE	OBJECTIVE	* LEAD AGENCY
Human Health directed activities including the Basin Property Remediation (BPRP), and Recreational Use Activities programs.	Complete remediation of any identified residential and community property sites and private drinking water sources as they are identified during the 5-year planning period. Address human health risks associated with basin wide recreational activities. Provide educational resources and health advisories to manage the potential for metals exposure through the consumption of fish. Incorporate human health related activities in the environmental cleanup projects as needed.	Remediate properties as they are identified and sampled and accepted for work. Most properties remaining to be sampled and/or cleaned-up will be properties whose owners have withheld access or properties whose owners have not responded to numerous contact attempts. For these reasons, it is anticipated that most of the remaining remediation will occur after property transfer or sales occur. Remediation of high-risk properties will continue as agencies and the CDA Trust become aware of them. Implement actions to address human health risks from exposure to lead and other metals that can occur during recreational activities throughout the Upper and Lower Basin.	IDEQ EPA CDA TRIBE PHD

PROPOSED ACTIVITY	SCOPE	OBJECTIVE	* LEAD AGENCY
Lead Health Intervention Program (LHIP)	The Panhandle Health District (PHD) administers the LHIP which provides a variety of services to prevent elevated blood lead levels in children and others living or recreating within the Bunker Hill Superfund site. These services include education and awareness about the risks associated with lead contamination and annual voluntary blood lead screenings. The purpose of these blood lead screenings is to identify children with elevated blood lead levels and provide in-home follow-up services from a public health professional to identify sources of and ways to reduce lead exposures. Information from blood lead screenings provides the PHD with valuable information on the effectiveness of the LHIP, as well as other site cleanup programs such as interior house dust monitoring, yard remediations, and the Institutional Controls Program (ICP). The goal of each of these programs is to prevent lead exposures that could result in elevated blood levels. Community and area-wide results are made available to the public.	The Centers for Disease Control has established a reference value for blood lead levels in young children at 3.5 micrograms per deciliter of lead in blood. The reference is not health based and is not a regulatory standard. Stats independently determine action thresholds based on state laws, regulations, and resource availability. In response to this, PHD uses the 3.5 micrograms per deciliter as the trigger for follow up. Blood lead screening will continue during this 5-year period.	PHD

PROPOSED ACTIVITY	SCOPE	OBJECTIVE	* LEAD AGENCY
Repository and Waste Consolidation Area (WCA) Development and Management	Repository and WCA activities center on these objectives: (1) operations at Big Creek Repository (BCR); (2) operations at the Big Creek Repository Annex (BCRA), East Mission Flats Repository (EMFR), Lower Burke Canyon Repository (LBCR), and Page Repository; (3) continued development and use of the East Fork Ninemile Canyon WCA for disposal of remedial action waste materials from the Ninemile drainage; (4) continued development and use of the Canyon Complex WCA and Quarry for remedial actions in Canyon Creek drainage; the siting and development of WCAs in the Lower Basin for implementation of remedial actions there.	Continue operation at BCR, BCRA and LBCR for Upper Basin remediation and the Institutional Controls Program (ICP). Continue operation at EMFR for remediation and ICP in the Lower Basin. Continue operation and expansion at Page to accommodate ICP wastes in OU-1 and 2 (the Box). Continue to utilize the WCAs in East Fork Ninemile and Canyon Creek for specific site remediation. Continue implementation of the Waste Management Strategy within the Area of Contamination. Evaluate repository and WCA cover design criteria and alternatives and develop cover plans which will include the final designs and monitoring plans. Consider the feasibility of future use options in the cap design phase for repositories and WCAs. Continue to explore potential sites and development plans for WCA sites in the Lower Basin.	IDEQ EPA PHD

PROPOSED ACTIVITY	SCOPE	OBJECTIVE	* LEAD AGENCY
Upper Basin Remedies	Implement the source control and water treatment remedies, ecological cleanup projects, and related human health activities identified in the Upper Basin Interim RODA along with any accompanying coordination on natural resource restoration actions. Operate the groundwater collection system and upgraded Central Treatment Plant (CTP) in the Box to accommodate mine-impacted water from OU-2. Source control actions in the Ninemile and Canyon Creek watersheds will continue to be the focus for the 5-year period.	The Upper Basin RODA primarily includes source control remedial actions to address contaminated surface water, soil, sediments, and source materials. Upper Basin and Box remedies are prioritized in order to reduce human health exposures and reduce the contribution of contaminants to downstream areas including the Lower Basin. Those cleanup actions will be coordinated with natural resource restoration actions. The inherent adaptive management process will help ensure human health exposure is prioritized and that the most effective actions are taken in Ninemile and Canyon Creek watersheds which are the sources for the most significantly impacted water quality outside of the Box.	EPA IDEQ CDA Trust with Restoration Partnership (RP)

PROPOSED ACTIVITY	SCOPE	OBJECTIVE	* LEAD AGENCY
Lower Basin Remedies	Evaluate and prioritize potential ecological and source control remedies noted in the OU-3 Interim ROD. Data sources to support this include Remedial Investigation/Feasibility Study (RI/FS) data, Clean Water Act (CWA) projects, and current data collection activities. Conduct pilot projects to address contaminated riverbed source areas and implement, as appropriate, remedies that are captured in decision documents and that have a low potential for recontamination and/or that may inform future remedy decisions. Characterize and prioritize additional riverbank segments for stabilization. Capture any such actions in annual work plans. Ensure that remedies are coordinated with natural resource restoration activities and the EPA's management plan. Coordinate as needed with the governmental structure that manages the Trail of the Coeur d'Alene's remedy. Identify recreation areas for remediation or develop substitute clean areas along the South Fork and main stem CDA River. Identify and implement programs to educate recreation site users regarding human health risks along the river corridor and how to minimize those risks.	Addressing risks to human health will remain a top priority through additional property cleanups, recreation site remedial actions, and education. Utilize information and recommendations from the Enhanced Conceptual Site Model (ECSM) for the Lower Basin, recent data collection efforts, and the sediment transport model to inform management plans (Lower Basin Prioritization Plan and Lower Basin Adaptive Management Plan) that target areas for active remediation over the next 3 to 5 years, evaluate the effects of remedial technologies, and identify areas for natural recovery. Utilize the Lower Basin Project Focus Team (PFT) process to evaluate multiple objectives for source control, cleanup of channel habitat, and protecting human health. Examine Lower Basin remedies previously selected in the 2002 OU- 3 Interim ROD as well as pilot projects to test supplemental actions that are not explicitly identified by the ROD with the goal of addressing riverbed mine waste source areas and reducing the downstream transport of lead and other mine waste contaminants. A ROD Amendment or Explanation of Significant Differences (ESD) may be necessary if additional actions are deemed necessary to address riverbed source areas.	EPA with State and Federal agencies, CDA Tribe, and RP

PROPOSED ACTIVITY	SCOPE	OBJECTIVE	* LEAD AGENCY
Lower Basin Remedies (continued)		Plan and implement habitat area design and remediation (including treatability studies for soil capping and amendments) and riverbed pilot projects. Continue to implement the Grays Meadow Remediation and Restoration Project in cooperation with the Idaho Department of Fish and Game (IDFG) and the Restoration Partnership. Evaluate and further characterize additional wetland properties for increasing feeding habitat for waterfowl. Begin implementation of a riverbed management plan to address contaminants mobilized in the Dudley Reach and begin planning actions for the entire river system. Update the inventory of recreational beaches and banks to identify those beaches or banks that may be considered for remediation during the immediate 5-year period and beyond. Adaptive management will be a key component of any implementation actions and management plans.	EPA with State and Federal agencies, CDA Tribe, and RP.

PROPOSED ACTIVITY	SCOPE	OBJECTIVE	* LEAD AGENCY
Basin Environmental Monitoring	Continue to implement remedy effectiveness and long-term monitoring. Analytical results from site surface water, sediment, and groundwater sampling through 2015 are available through WQX, EPA's Water Quality Exchange; data management for the Bunker Hill Site is transitioning to Scribe.net, an EPA data management system that will be administered by Bunker Hill stakeholders including EPA, IDEQ, and the CDA Trust with support from the EPA Environmental Response Team.	Continue implementing the CDA Basin environmental monitoring plan (BEMP) under updated, optimized management plan produced in 2020. The goal of the updated BEMP is to provide a framework and metrics for remedy-specific effectiveness monitoring, area-wide monitoring, and long-term/site wide monitoring to evaluate the progress of cleanup actions, and for adjusting the monitoring program to inform ongoing and upcoming near-term cleanup actions.	EPA with IDEQ, USFWS, USGS and CDA Tribe.
	*Note with planning and implem lead agencies will coordinate with agencies as appropriate.		

OPERATION AND MAINTENANCE (O&M) RESPONSIBILITIES FOR REMEDIAL ACTIONS

Operation and maintenance responsibilities for remedial actions and cleanup work on the Site are as follows:

- Individual owners of properties remediated under the BPRP are responsible for operation and maintenance of the remedy and barriers on their properties in accordance with the Institutional Controls Program (ICP) administered by the Panhandle Health District (PHD).
- Operation and maintenance for public gravel and paved roads remediated in the gravel roads and paved roads remediation programs are the responsibility of the local governments with jurisdiction over those roads. Those jurisdictions include the East Side Highway District and Shoshone County, and the cities of Kellogg, Mullan, Pinehurst, Osburn, Smelterville, Wallace and Wardner.
- Operation and maintenance of projects constructed under the Remedy Protection Program are the responsibility of the governmental jurisdictions noted as the "Holder" of the Environmental Covenants executed for these projects and filed as riders to the deeds for the properties on which the work was performed. If no governmental jurisdiction is noted as the "Holder" the property owner holding title to the property involved is responsible.
- Generally, operation and maintenance for remedial work performed by the Coeur d'Alene Custodial Work Trust (CDA Trust) is the responsibility of the CDA Trust. However, there are exceptions such as with the roads and remedy protection projects. Other project examples where the CDA Trust will not be taking on long-term O&M include Gray's Meadow where Idaho Department of Fish & Game will take over O&M after the first five years.
- Operation and maintenance of the Central Treatment Plant (CTP) and Ground Water Collection System (GWCS) in Kellogg are the responsibility of the State of Idaho for the life of the registry funds from the Hecla settlement.
- Operation and maintenance of remedies performed by various parties under CERCLA authorities utilizing funding from appropriated funds and other sources placed in EPA's Superfund Account are the responsibility of the State of Idaho.
- Operation and maintenance of remedies on Bureau of Land Management (BLM) and National Forest System Administered Lands within the Site and in the North Fork CDA River Drainage are the responsibility of the BLM and U.S. Department of Agriculture (USDA) Forest Service.

PART 2 – OTHER ACTIVITIES AND RESPONSIBILITIES

For Part 2, the scope of the five-year work plan recognizes a number of work items that the BEIPC will be involved in and items of work needed to accommodate some of the recommendations of the 2005 NAS study; it also includes implementation of the Lake Management Plan by the State of Idaho and CDA Tribe, and coordination with the activities of the Natural Resource Trustees. The plan includes the following work:

- Lake Management Activities
- Flood Control, and Infrastructure Revitalization
- Communications and Public Involvement
- Coordinate with the Restoration Partnership

2.1 LAKE MANAGEMENT ACTIVITIES

The OU-3 Interim ROD did not include CDA Lake in the Selected Remedy. The OU-3 Interim ROD anticipated that the State, Tribe, federal agencies, and local governments would implement a Lake Management Plan (LMP) outside the CERCLA (Superfund) process using separate regulatory authorities. The updated LMP was approved in 2009 and implementation has been underway.

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In response to trends showing some trigger levels being approached (and some exceeded), the State of Idaho enlisted the NAS to perform a third-party review of data to provide insight into nutrient, metal, and dissolved oxygen trends and offer recommendations in data collection to better inform lake management efforts moving forward. The review was sponsored by IDEQ, Kootenai County, and EPA, with support from the CDA Tribe. Observations and recommendations from the 2022 National Academy of Sciences (NAS) report will be used to help inform an appropriate response to undesirable water quality trends. IDEQ staff continues to operate under the LMP as discussions with the CDA Tribe and EPA continue. This work plan includes activities planned for implementation by IDEQ and CDA Tribal staff.

Objectives of the LMP (as outlined in Section 3) include the following:

- 1. Improve Scientific Understanding of Lake Conditions through Monitoring, Modeling, and Special Studies.
- 2. Establish and Strengthen Partnerships to Maximize Benefits of Actions under Existing Regulatory Frameworks.
- 3. Develop and Implement a Nutrient Reduction Action Plan.
- 4. Increase Public Awareness of Lake Conditions and Influences on Water Quality.
- 5. Establish Funding Mechanisms to Support the LMP Goal, Objectives, and Strategies.

Below are activities envisioned for implementation throughout the 5-year planning period: These activities are categorized broadly under objectives 1, 3, and 4 from the LMP; Objectives 2 and 5 are intertwined throughout all objectives.

Table 2-1 Summary of Coeur d'Alene Lake Management Activities Proposed for Implementation for 2023-2027

	Objective 1. Increase scientific	understanding	
Proposed Activity	Scope	Additional Objective(s)	Lead Participants
Continue core lake water quality monitoring	Continue monitoring throughout CDA Lake for metals, nutrients, physical parameters, and biological communities.	Facilitates Objective 5	IDEQ CDA Tribe Support from EPA
Evaluate Third- Party Review	Analyze and utilize the NAS third- party review of lake data, coordinate on future data collection priorities, and strategize on the path forward.	Objectives 2, 3, 4	IDEQ CDA Tribe EPA
Science reporting	NAS report will be presented to the BEIPC and throughout the community.	Objective 2	IDEQ CDA Tribe
Objec	tive 3. Develop and implement a nut	trient reduction action pla	n
Proposed Activity	Scope	Additional Objective(s)	Lead Participants
Basin-wide nutrient inventory	Nutrient monitoring data from lake tributaries collected through the end of 2022 will be analyzed and reported. Results will be shared with stakeholders to inform decision-making	Objectives 1, 2, and 5	IDEQ
Bank erosion inventory	Bank erosion inventories will be updated as appropriate.		IDEQ AVISTA SWCDs

Implementation coordination	Continue to collaborate with the Coeur d'Alene Lake Advisory Committee (CLAC), Restoration Partnership (RP), AVISTA Corporation, the Natural Resource Conservation Service (NRCS), the Soil & Water Conservation Districts (SWCDs), Counties, Cities, and others to identify water quality improvement projects	Objectives 2 and 5	IDEQ CLAC RP CDA Tribe AVISTA NRCS SWCDs
Aquatic Invasive Species	Continue implementing aquatic plant surveys. Identification of invasive species will be reported to AVISTA Corporation and Idaho State Department of Agriculture.	Objective 1	IDEQ CDA Tribe AVISTA ISDA Kootenai County
Remedy implementation support	Continue to participate in the Lower Basin PFT and TLG and support implementing projects identified in the 2002 OU-3 Interim ROD.	Objective 2	IDEQ CDA Tribe EPA BEIPC

Objective 4. Increase public awareness of lake conditions and influences on water quality			
Proposed Activity	Scope	Additional Objective(s)	Lead Participants
LakeASyst	LakeASyst (Lakeshore Assessment System) materials will continue to be utilized.	Objectives 2, 3 and 4	IDEQ CDA Tribe U of I
Demonstration sites	Improvement projects will be utilized to demonstrate effective strategies and encourage further implementation. Utilize Leading Idaho projects for public outreach opportunities.	Objectives 2 and 3	IDEQ CDA Tribe SWCDs Stakeholders
Our Gem Coeur d'Alene Lake Collaborative	Participate in the Our Gem CDA Lake Collaborative education subgroup to share information and get feedback from the basin-wide community	Objectives 2 and 4	IDEQ CDA Tribe Stakeholders
K-12 Education	Continue to work with the CDA Tribe, University of Idaho, and area educators to incorporate water quality education into classroom programming.	Objective 2	IDEQ CDA Tribe U of I K-12 schools
General Outreach	Continue to participate in relevant education and outreach opportunities as time and resources allow	Objective 2	IDEQ CDA Tribe U of I
Local Gems	Continue to support the Local Gems Recognition and Awards program in Collaboration with the CDA Regional Chamber of Commerce.	Objectives 2 and 3	IDEQ CDA Tribe CDA Chamber

Coordination with BEIPC forums will maximize opportunities for information exchange and advice working under the BEIPC Memorandum of Agreement (MOA) and work plans. Future coordination with the BEIPC recognizes that IDEQ and the CDA Tribe retain their respective decision-making authorities under CERCLA and the Clean Water Act (CWA).

2.2 FLOOD CONTROL AND INFRASTRUCTURE REVITALIZATION

Under a 2018 MOA, participating governments of the BEIPC and the Upper Basin jurisdictions (Local Flood Group) will continue to work on potential flooding issues on the South fork Coeur d'Alene River (SFCDAR). During this 5-year planning period, the Local Flood Group and the BEIPC will continue to work with the U.S. Army Corps of Engineers (COE) and Federal Emergency Management Agency (FEMA) to implement an update to the 2009 Flood Inundation Maps based on the current flood zone analysis by the COE on a portion of the river from Elizabeth Park to the Theater Bridge in Smelterville. Based on the new flood maps it is anticipated that updated analysis of the need for

certified levees in the SFCDAR will also be initiated in the planning period. The working group will also continue to support the City of Pinehurst's request for COE assistance in performing a similar flood zone analysis in Pine Creek. Although much of the needed work outlined in the 2009 Drainage Control Infrastructure Revitalization Plan (DCIRP) is now complete, the BEIPC Executive Director will continue to assist Upper Basin communities and utilities in pursuing funding to implement the remainder of the DCIRP. The Executive Director will also coordinate with the local infrastructure jurisdictions on an Operation and Maintenance plan for existing drainage structures in the Upper Basin.

2.3 COMMUNICATIONS AND PUBLIC INVOLVEMENT

During the 5-year planning period, the agencies will continue to address issues and facilitate public involvement and education in BEIPC activities. The agencies will also facilitate communication between the Basin community, the BEIPC, the Superfund cleanup, and natural resource restoration implementing agencies. The CCC will continue to be the focus organization to assist in implementing this process.

2.4 RESTORATION PARTNERSHIP

The CERCLA natural resource trustees in the Coeur d'Alene Basin are the United States (represented by the USDA Forest Service, U.S. Fish and Wildlife Service, and U.S. Bureau of Land Management), the Coeur d'Alene Tribe, and the State of Idaho (represented by the Idaho Department of Fish and Game and Idaho Department of Environmental Quality). A series of lawsuits followed the Superfund designation in the Coeur d'Alene Basin for response costs and natural resource damages. Natural resources injured by contamination included but are not limited to; surface and groundwater, fish, birds, riparian resources, macroinvertebrates and phytoplankton.

Under CERCLA, settlements were reached with all parties. Following the final 2011 settlement agreement, the Trustees entered into a MOA to address the planning and implementation of restoration for natural resources and associated services injured, destroyed or lost as a result of the release of mining-related hazardous substances into the Coeur d'Alene Basin.

As specified in CERCLA the funds will be dedicated to projects that restore, rehabilitate, replace, and/or acquire the equivalent of the injured natural resources. The Trustees' goal is to restore the health, productivity, and diversity of injured natural resources and the services they provide in the Restoration Planning Area.

The Trustees will continue to implement their Restoration Plan which is a programmatic guide for restoration of injured natural resources in the Restoration Planning Area and those activities will be coordinated with remediation actions. During the 5-year planning period, the Partnership will continue to coordinate with the BEIPC and provide updates on restoration planning efforts and implementation of restoration projects that will be solicited by the Trustees and from interested parties. The Partnership will continue to coordinate closely with EPA and the CDA Trust to integrate restoration planning and implementation with remediation projects. See annual BEIPC Work Plans for more details or refer to www.restorationpartnership.org.