

**National Pollutant Discharge Elimination System (NPDES) Permit for
US Silver Corporation- Coeur and Galena Mines and Mills
NPDES Permit No. ID-0000027**

Response to Comments

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I. INTRODUCTION

This document provides a response to comments received on two draft National Pollutant Discharge Elimination System (NPDES) permits for the Coeur and Galena Mines and Mills, owned and operated by U.S. Silver Corporation (US Silver). This document also summarizes actions taken by EPA and the Idaho Department of Environmental Quality (IDEQ) that influenced some of the final permit conditions.

A draft NPDES permit for the Coeur and Galena Mines and Mills was issued for public notice on March 28, 2001 (hereafter referred to as the 2001 draft permit). A Fact Sheet that accompanied the 2001 draft permit described how the draft permit conditions were developed. The public notice initiated a 45-day public comment period. In response to requests from the Hecla Mining Company (Hecla) and the Shoshone Natural Resources Coalition (SNRC), the comment period was extended twice on May 8, 2001 and June 29, 2001 to end on August 3, 2001. A public meeting was held on June 5, 2001 for both the Hecla Lucky Friday Mine 2001 draft permit and the Coeur/Galena Mine 2001 draft permit.

The effluent limits for cadmium, lead, and zinc in the 2001 draft permit were based on wasteload allocations (WLAs) for the Coeur/Galena discharges specified in the Coeur d'Alene River Basin Total Maximum Daily Load (TMDL) that was issued by EPA and IDEQ on August 18, 2000. On September 6, 2001, the TMDL was declared null and void (for the non-reservation waters) in Idaho 1st District Court. Therefore, EPA could no longer use the TMDL as a basis for the effluent limits in the final permit.

In August of 2002, EPA received site-specific criteria (SSC) for cadmium, lead, and zinc for the South Fork Coeur d'Alene River (SFCdA or South Fork) from IDEQ for review and approval.

Because of these two actions (the court decision on the TMDL and receipt of the SSC for review), EPA decided that the cadmium, lead, and zinc effluent limits in the 2001 draft permit should be revised and that new effluent limits be developed subject to public review. A revised draft permit was issued for public notice on January 6, 2003 (hereafter referred to as the 2003 revised draft permit). Changes between the 2001 draft permit and 2003 revised draft permit included the following:

- Effluent limits for cadmium, lead, and zinc were no longer based on the TMDL, instead two sets of effluent limits for cadmium, lead, and zinc were calculated, one set based on the Idaho water quality criteria that was current in 2003 and the other set based on the proposed SSC.
- □ The mass-based effluent limits were revised based on updated outfall 001 and 002 flow information.
- □ The effluent limits for mercury and copper and the whole effluent toxicity (WET) triggers were recalculated using updated effluent and receiving water data.
- An additional river flow tier and effluent limits for the new flow tier was added as requested in the State's preliminary Clean Water Act (CWA) Section 401 certification.

- Limits on TSS were proposed based on a draft (now final) suspended solids TMDL prepared by IDEQ.
- The outfall 001 effluent limits for chromium VI were removed since the data used to calculate the chromium limits was based on total chromium, not chromium VI.
- A three-year compliance schedule for cadmium, lead, mercury, and zinc was added based on the State's preliminary 401 certification

The Fact Sheet for the 2003 revised draft permit described how the revised draft permit conditions were developed. The public notice initiated a 50-day public comment period. In response to requests from Hecla and SNRC, the comment period was extended on February 21, 2003 to end on April 11, 2003. A public meeting was held on February 6, 2003 for both the Hecla Lucky Friday Mine 2003 revised draft permit and the Coeur/Galena Mine 2003 revised draft permit.

This document provides a response to comments received on both the 2001 draft permit and the 2003 revised draft permit. The written comments and oral testimony (from the public meetings) that were provided to EPA have been assigned a number based on the date they were received. The list of commenters and their assigned numbers are shown in Appendix A. Table A-1 is a list of comments received on the 2001 draft permit. Table A-2 is a list of comments received on the 2003 revised draft permit. The tables also indicate where in this Response to Comments document, comments provided by the commenter (and the response) can be found.

Public comments have led to a number of changes to the Coeur/Galena permit. Information from actions by EPA and the State of Idaho have also resulted in changes to the final permit. The following summarizes the actions that influenced the permit conditions, the comments received on both the 2001 draft and 2003 revised draft versions of the permit, and EPA's responses to the comments. Appendix B includes tables that summarizes the changes from the 2001 draft permit to the 2003 revised draft permit to the final permit.

II. ACTIONS AFTER THE PUBLIC COMMENT PERIOD

A. Actions by EPA

Approval of Site Specific Criteria

As discussed in the introduction, the 2003 revised draft permit contained two sets effluent limits for cadmium, lead, and zinc. One set was based upon Idaho's federally approved water quality criteria at the time and one set was based upon proposed site-specific criteria (SSC) for the South Fork. Two sets of limits were proposed in the 2003 revised draft permit, because at the time that the permits were drafted, EPA had not yet reviewed the proposed SSC and it was uncertain whether or not the SSC would be approvable and thus used as the basis for the final limits. On February 28, 2003, EPA approved the SSC for the SFCdA River. EPA's approval of the SSC made them effective under the Clean Water Act (CWA) and, therefore, the SSC are the criteria

upon which the cadmium, lead, and zinc water quality-based effluent limits in the final permit are based. The Fact Sheet for the 2003 revised draft permit described how the effluent limits based on the SSC were developed.

Approval of Suspended Solids TMDL

The 2003 revised draft permit included mass-based (lbs/day) limits for total suspended solids (TSS) that were calculated using the wasteload allocation (WLA) provided in a draft South Fork Coeur d'Alene River Sediment Subbasin Assessment and TMDL. At the time the 2003 revised draft permit was being developed, IDEQ had not yet submitted the sediment TMDL to EPA for approval. However, on June 19, 2003, IDEQ submitted the May 17, 2002 TMDL to EPA and on August 21, 2003 EPA approved the TMDL. Therefore, the final TSS mass-based limits are based on the federally approved TMDL.

Permit Transference

By letter dated June 14, 2006, EPA was notified that Coeur Silver Valley sold the Coeur/Galena mines and mills to U.S. Silver Corporation (US Silver). The final permit reflects this change and is issued to US Silver.

Technical Error

The outfall 002 effluent limits for mercury for the high flow tier (>649 cfs) in the 2003 revised draft permit were incorrect. Table 2 of the 2003 revised draft permit showed effluent limits of 2.3 ug/l (maximum daily) and 1.2 ug/l (average monthly). These limits are the water quality-based limits for mercury calculated based on a 25% mixing zone (see the 2003 Fact Sheet). However, the Clean Water Act and NPDES regulations require that the more stringent of the technology-based limits and water quality-based limits apply. The technology-based limits for mercury in outfall 002 are the effluent limitation guidelines established in 40 CFR 440, Subpart J for Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores. The basis for the technology-based limits were described in the 2001 Fact Sheet (Appendix B) and the 2003 Fact Sheet (Appendix A). The technology-based limits are 2 ug/l (maximum daily) and 1 ug/l (average monthly). Since these limits are more stringent than the water quality-based limits, the technology-based limits were included in the final permit.

B. Actions by the State

Section 401 of the CWA requires EPA to seek certification from the State that the permit is adequate to meet State water quality standards before reissuing the final NPDES permit. The NPDES regulations (40 CFR 124.53) allow for the State to stipulate more stringent conditions in the permit, if the certification cites the CWA or State law references upon which that condition is based. In addition, the regulations require a certification to include statements of the extent to which each condition of the permit can be made less stringent without violating the requirements of State law.

The IDEQ issued a preliminary CWA Section 401 certification of the 2001 draft NPDES permit

on February 14, 2001 (IDEQ 2001). IDEQ issued a preliminary 401 certification of the 2003 revised draft NPDES permit on December 3, 2002 (IDEQ 2002) that was used as a basis for some of the changes in the 2003 revised draft NPDES permit. IDEQ issued a final certification dated September 29, 2006 (IDEQ 2006). The final certification conditions are the ones that apply to the permit. The following summarizes the final 401 certification requirements which were incorporated into the final permit:

Mixing Zones: In their 2002 preliminary certification, IDEQ specified mixing zones of 25% for copper and mercury for outfall 001 and 002 for all flow tiers (IDEQ 2002). In the 2006 final certification IDEQ authorized mixing zones from 25% to 75% for copper and mercury per the table below. Effluent limits for copper and mercury have been recalculated based on the mixing zones in the final certification. These calculations are described in Appendix C.

	Mixing Zone (%) for Outfall 001	
Flow Tiers (cfs)	Copper	Mercury
< 1.7	25	25
1.7 to 3.8	25	25
3.8 to 13.4	25	25
13.4 to 23	50	50
> 23	75	50
	Mixing Zone (%) for Outfall 002	
< 48	50	50
48 to 109	50	50
109 to 379	50	25
379 to 649	50	25
> 649	50	25

IDEQ also authorized a 25% mixing zone for calculating toxicity triggers for whole effluent toxicity (WET) testing. This same mixing zone was previously used to calculate the toxicity triggers in the 2003 revised draft permit, the toxicity triggers are therefore not revised from the 2003 revised draft permit.

Compliance Schedule: The 2002 preliminary 401 certification authorized a three year compliance schedule for cadmium (outfall 001 only), lead, mercury, and zinc (outfall 002 only) which was included in the 2003 revised draft permit. The 2006 final 401 certification authorized a four-year, nine-month compliance schedule for copper and mercury in outfall 001 and copper, cadmium, and zinc in outfall 002 for select flow tiers. The 2006 final certification required that the interim limits in the following table apply during the compliance schedule.

The 2006 final certification also required that US Silver submit written progress status reports to EPA and in accordance with the permit.

Compliance Schedule Interim Effluent Limits				
Outfall	Parameter	Average Monthly Limit, ug/l	Maximum Daily Limit, ug/l	Comments
Outfall 001	copper	15	15	Average monthly interim limit applies to all flow tiers; maximum daily interim limit applies to flow tiers 3 and 4 only
	mercury	0.1	0.1	Average monthly interim limit applies to all flow tiers; maximum daily interim limit applies to flow tiers 1 through 4
Outfall 002	copper	142	142	Average monthly interim limit applies to flow tiers 1 through 3; maximum daily interim limit applies to flow tiers 1 and 2
	cadmium	4	4	Average monthly and maximum daily interim limits apply to all flow tiers
	zinc	530	530	Average monthly and maximum daily interim limits apply to all flow tiers

With the exception of the zinc average monthly interim limit, the compliance schedule requirements were incorporated into Part I.A.5. (Table 3) of the final permit. The 530 ug/l average monthly interim limit for zinc was not included in the permit since that limit is higher than the technology-based effluent limitation guidelines (ELGs) that are applicable to discharges from the Coeur/Galena mills. The applicable ELGs for zinc are 1000 ug/l maximum daily and 500 ug/l average monthly (see 40 CFR 440.103(b) and the 2001 Fact Sheet, Appendix B). The statutory deadline for meeting ELGs was March 31, 1989 (see 40 CFR 125.3(a)(2) and CWA 301(b)). Compliance schedules are not allowed where statutory deadlines have passed (40 CFR 122.47(a)(1)). Since the CWA and NPDES regulations do not allow setting limits higher than the technology-based ELGs, the outfall 002 average monthly interim zinc limit specified in the final 401 certification cannot be included in the permit. The ELG value of 500 ug/l, instead was included as the average monthly interim limit.

Bioassessment Monitoring: The 2002 preliminary certification required annual instream bioassessment monitoring directly downstream of outfalls 001 and 002 consistent with the most recent DEQ Beneficial Use Reconnaissance Project workplan for wadeable streams. The 2006 final certification requires bioassessment monitoring as follows: “In order to ensure compliance with the Water Quality Standards, the permit shall include the requirement that US Silver conduct annual instream bioassessment using a sample design that will likely involve biomonitoring both upstream and downstream of the discharge. Bioassessment monitoring shall be conducted using a sample design that will allow DEQ to make a determination as to the impact of the discharges to the beneficial use. US Silver shall coordinate the sample design with the DEQ Coeur d’Alene Regional Office and shall submit a monitoring plan to the Coeur d’Alene office within 60 days of the effective date of the permit. The plan shall be implemented according to the dates set forth in the plan.”

The above requirements of the final certification were incorporated into the final permit at Part I.D.3.

Flow Tiers: The 2003 revised draft permit included effluent limits for five receiving water flow tiers for the two parameters (mercury and copper) that are allowed mixing zones. The water quality-based effluent limits in the permit were calculated from the minimum flow of each tier. The 2006 final certification stated that the flow tiers established in the permit will allow effluent limits to be increased while maintaining Idaho Water Quality Standards. The final permit, therefore, retained effluent limits based on five flow tiers. See Tables 1 and 2 of the final permit.

Total Suspended Solids: The 2006 final certification certified that the TSS effluent limits included in the permit meet the Idaho Water Quality Standards and comply with wasteload allocations set forth in the suspended solids TMDL. As discussed in Section II.A., above, the TSS limits in the final permit (Tables 1 and 2) are based on the TMDL.

Effluent Limits: The 2006 final certification stated that SSC for the South Fork be used for cadmium, lead, and zinc end-of-pipe limits. As discussed in Response to Comments Section II.A., EPA approved the SSC and these are the basis for the cadmium, lead, and zinc limits in the final permit (Tables 1 and 2).

IDEQ Notification: IDEQ requested that EPA require the permittee to notify IDEQ in conjunction with EPA in all areas where notification is required. The certification also requested that the timeline for EPA notification apply to the state as well. The permit was revised to include notification to IDEQ, as well as EPA, for the following:

- notification where receiving water will be used in WET testing control and dilution water (permit Part I.B.3.c.)
- notification requirements of Best Management Practices (BMP) Plan (permit Parts II.B., II.E.2., and II.G.3.)

All other parts of the permit that require EPA notification, already include notification to IDEQ.

Monitoring Comments: In the 2006 final certification, DEQ commented that they support steps to make monitoring requirements less expensive. Specifically, DEQ supports the position that WET testing should only be required at the end of the compliance schedule (four years, nine months after permit reissuance). In addition, DEQ recommends that US Silver be allowed to investigate sampling at upstream bridges or other structures to fulfill the upstream monitoring requirement.

EPA does not agree that it is appropriate to delay WET testing until the end of the compliance schedule. It is important to monitor the toxic effects of the discharge even as the facility is seeking to come into compliance with the metals limits in the permit. Therefore, quarterly WET testing has been retained.

The permit does not identify a specific location for upstream monitoring. The permit requires monitoring “directly upstream” of the outfalls (Part I.D.1.a.). US Silver can investigate sampling at upstream bridges or other structures so long as the sample collected is representative of water quality that would be expected directly upstream of the outfall.

Mercury Criteria Comment: In the final certification, DEQ points out that it removed the aquatic life criteria for mercury when it adopted the human health methylmercury fish tissue standard. DEQ believes the human health methylmercury fish tissue criteria will be protective of aquatic life and that EPA should approve removal of the aquatic life mercury criteria, and that the methylmercury fish tissue criteria should be applied in this and other NPDES permits.

While EPA approved the fish tissue criteria, EPA has not yet approved removal of the aquatic life mercury criteria upon which the mercury effluent limits are based. The mercury aquatic life criteria, therefore are the effective criteria under the Clean Water Act and are still the basis for mercury limits in the final permit.

III. COMMENTS RECEIVED IN THE 2001 DRAFT PERMIT

Following are the comments received on the 2001 draft permit and EPA's responses. Comments and responses are grouped according to the subject area of the comment. The individual comments under each subject area are identified with the commenter(s) assigned number. A list of the commenters that correspond to each number is included in Appendix A (Table A-1).

In some cases, the exact phrasing of detailed comments is presented. In other cases, substantive portions were excerpted or summarized from the comment. Where more than one commenter submitted similar comments, a summary of the comment was included following the list of numbers of all those that provided the comment. The Administrative Record files contain complete copies of each comment letter and the public hearing testimony and are available for review at EPA's Seattle office.

A. General Comments

Comment #1 - Support EPA. (commenter 1)

We support EPA efforts to reduce and eliminate pollution in our water.

Response: EPA acknowledges the comment.

Comment #2 - Do not allow mines to discharge. (commenter 28)

Do not issue the final permits for the Lucky Friday, Coeur, and Galena Mines. These mining facilities in the past have caused major environmental problems seriously polluting both air and water. Further permits will add to this pollution.

Response: The final permit for the Coeur and Galena Mines and Mills contains limits on the discharges that are designed to ensure that water quality standards protective of the South Fork are not exceeded. The new permit is more stringent than the old permit. The new permit includes requirements to monitor the effluent for numerous parameters including metals and toxicity and to monitor the South Fork

for metals and health of the biota. This information will be used to determine if discharges from the mine are causing environmental problems and to adjust the permit limits, if needed, in the future.

Comment #3 - Environmental commitment of mining companies.
(commenters 13, 16, 17, 19, 22, 33)

The commenters state that the mine operators in this valley are responsible people and have been managing their discharges at a standard above what their expired permits allow.

Response: EPA acknowledges the comment.

B. Economic Considerations

Comment #4 - Costs of treatment to meet limits. (commenters 5, 9, 15)

The commenters are concerned with the cost of treatment and that EPA has not yet made a case that treatment is necessary or feasible.

Response: As discussed in Section II of this Response to Comments Document, the effluent limits for cadmium, lead, and zinc in the final permit are based on the site-specific criteria (SSC). The SSC-based limits are greater than those in the 2001 draft permit and therefore, the cost to meet the limits is probably less than originally assumed. In addition, the permit includes compliance schedules for the facility to meet the limits that cannot currently be achieved (see Section II.B.).

Comment #5 - The permit will cause economic hardship to the community.

(commenters 3, 4, 5, 6, 7, 9, 10, 11, 12, 15, 16, 17, 20, 21, 22, 24, 29, 30, 31, 33, 34)

The commenters expressed concern regarding the economic impact of the draft permit on the mining industry and the community. The Silver Valley is already economically depressed and cannot withstand the closure of another mine. There is extreme concern that the permits will destroy the mining industry in the Silver Valley and therefore also the economy of the community. In addition, the uncertainty of the future is causing people to leave and/or not want to invest in the Valley's future. Some commenters provided details on the extent to which the mines and community would be impacted. One commenter provided news articles which indicate the state of economy in Shoshone County.

Response: EPA recognizes that unemployment in the area is greater than in the past and that the permits include new requirements for the mines. It is not our intent to issue permits that will put the mines out of business. The CWA requires that limits in permits be stringent enough to meet water quality standards and in some cases this can result in water quality-based effluent limits that can only be met through wastewater treatment. The CWA and NPDES regulations also allow some flexibility. The flexibility incorporated into the Coeur permit includes the use of flow-based limits and mixing zones for copper and mercury, and four-year nine-

month compliance schedules for meeting limits that cannot currently be achieved. In addition, the cadmium, lead, and zinc limits in the final permit are based on the SSC which allows for higher discharges of metals while still protecting aquatic life.

Although EPA and the state have provided Coeur flexibility, investments may be needed to update the Coeur and Galena wastewater management operations. EPA is optimistic that conventional pollution control technologies including water management (recycling process water and water storage during low stream flow) and treatment can meet the effluent limits. Other mining companies in the U.S. are successfully managing and treating their wastewater in compliance with the CWA.

C. Health of the South Fork and Permit Impacts

Comment #6 - The South Fork is healthy. (commenters 5, 9, 13, 21, 22, 33)

The South Fork Coeur d'Alene River is healthy and not polluted anymore. There is a native trout fishery and EPA must consider and recognize this fact.

Response: The fish community in the South Fork above Mullan is generally healthy and dominated by native species. Fish communities in some areas below Mullan are recovering. Based on this observation, the State and mines initiated work on developing water quality criteria specific to the South Fork. The SSC was approved by EPA in February 2003. The SSC, were translated into the effluent limits included in the final permit. The effluent limits based on the SSC allow higher levels of lead and zinc to be discharged than effluent limits based on the previous Idaho standards. The effluent limits are necessary to ensure that the mine discharges are maintained at levels which will not adversely impact the South Fork.

Comment #7 - The permitted mine discharges have little effect on water quality. (commenters 29, 30, 31, 34)

Commenters 29, 30, 31: As admitted by your agency, the permitted discharges are only 10 percent of the problem. Wouldn't it make more sense to use the time and money spent on these permits to clean up 90 percent of the problem? I understand that the Clean Water Act drives your action, but you have stated in public meetings that the permitted discharges will have no effect on the water quality.

Commenter 34: The majority of the metals loading to the river comes from existing tailings in the river itself. Some estimates indicate that 95% of the problem is due to these tailings. Therefore addressing 5% of the problem will be expensive and probably ineffective.

Response: When looking at the South Fork as a whole, EPA agrees that the discharges of metals from the permitted mines are a small percentage of the total load of metals in the river. However, when looking at discrete segments of the South Fork, individual sources of metals become significant.

Establishing water quality-based permit limits for the mines is not sufficient by itself to meet water quality criteria in the whole of the South Fork. However, eliminating all the other sources of metals would also not be sufficient to meet the criteria. This highlights the scale of the metals problem and points to the need to reduce loadings from both the permitted discharges and the other sources in the basin. EPA believes that reductions in metals loading from the permitted point sources and from non-permitted sources should proceed on a parallel path.

Comment #8 - Fish impacts due to mine water pollutants and temperature. (commenter 26)
What are the impacts of contaminated mine water reaching the South Fork, as it relates to cutthroat trout? Fish that seek cold water might be attracted to wastewater that was below river temperatures. The tailings pond water might also be above river temperatures - will this impact the aquatic organisms?

Response: The metals effluent limits in the permit were calculated based upon the water quality criteria. The water quality criteria are designed to be protective of aquatic life, therefore so long as the Coeur and Galena Mines discharges comply with the effluent limits, there should be no adverse effect on aquatic life in the South Fork. The final permit includes whole effluent toxicity (WET) testing of the effluent and bioassessment monitoring of the receiving water below each of the outfalls. If the results of this testing and monitoring indicate that adverse impacts are occurring, then effluent limits or other permit conditions may be modified. There was not enough information to determine whether or not temperature limits are needed in the Coeur/Galena permit. The permit requires temperature monitoring of the effluent and South Fork which will help answer the question as to whether temperature-related impacts to aquatic life may be occurring.

D. Water Quality Criteria Comments

Comment #9 - Support for the use of the TMDL and Gold Book criteria. (commenters 2, 26, 36)
The commenters support the use of the metals TMDLs and Gold Book standards to develop limits.

Response: cadmium, lead, and zinc: The effluent limits for cadmium, lead, and zinc in the 2001 draft permit were based upon the TMDL WLAs. The WLAs were based upon the Idaho water quality standards that were in effect at that time, which were the Gold Book criteria. As discussed in Section I., the TMDL was declared null and void in Idaho District Court and is no longer the basis for the effluent limits in the final permit. As discussed in Section II.A., the SSC for the South Fork are the effective criteria under the CWA and are therefore the criteria upon which the effluent limits in the final permit are based. EPA believes that the SSC and effluent limits based on the SSC are protective of the uses of the South Fork.

copper and mercury: The permit also includes effluent limits for copper and mercury. These limits are based on the Idaho water quality standards, which adopted the Gold Book criteria.

Total suspended solids: As discussed in Section II, the final permit includes mass-based (i.e., lbs/day) limits for total suspended solids based on the approved TMDL for suspended solids.

Comment #10 – Support the use of site specific water quality criteria.

(commenters 12, 13, 14, 17, 18, 19, 20, 21, 22, 29, 30, 31, 32, 34)

These commenters request that the SSC be adopted by the state, approved by EPA, and used in the new permit.

Response: As discussed in Section II.A., in January 2003 EPA public noticed a revised draft permit for the Coeur and Galena Mines that contained effluent limits based on the SSC. In February 2003, EPA approved the SSC for the South Fork and therefore, the cadmium, lead, and zinc effluent limits in the final permit are based on the SSC.

Comment #11 - Do not support site-specific criteria. (commenter 26)

The poor state of in-stream macroinvertebrates indicate that the biota are impacted by heavy metal pollution and that site-specific limits should not be used.

Response: IDEQ submitted extensive technical documentation supporting the development of the SSC and the protectiveness of the SSC to the species present in the South Fork. EPA thoroughly reviewed IDEQ's work during and after development of the SSC. In addition, EPA requested peer review of the documents that supported the SSC. Based on our review and the peer review, EPA believes that the SSC is protective of aquatic life in the South Fork and approved the SSC in 2003.

The SSC was already subject to a comment period. Changes to the SSC cannot be made in the context of an NPDES permit. Therefore, comments related to development of the SSC will not be responded to in detail in this Response to Comments document. EPA directs the commenter to the administrative record for the SSC which sets forth the basis for the SSC.

Comment #12 - Comments related to development of the SSC. (commenter 26)

There is strong scientific literature that uses taxonomic groups to indicate the impact of pollution. For example, it is well accepted that certain taxonomic groups are more susceptible to metal pollution than are others. Midges tend to be most tolerant, caddisflies less tolerant, and mayflies the least tolerant. Therefore, the presence or absence of certain species, in addition to metal levels in organisms, water and sediments, provides a full picture of the health of a stream. To justify site-specific levels it would need to be shown from current data that the most susceptible

taxonomic group (i.e., mayflies) are present in the South Fork at levels that would be predicted from nonsite-specific levels. Data from a 1998 study indicate that the South Fork does not support healthy, reproducing, populations of mayflies. The commenter presents references to support these statements.

Response: As discussed above, EPA believes that the SSC is protective of aquatic life in the South Fork. See response to comment #11, above.

E. Variance Comments

Comment #13 - Potential request for variance. (commenter 35)

In their comments on the draft permit, Coeur advised EPA that it may be applying for a variance from the State water quality standard for copper.

Response: The EPA has not received a variance request from the permittee as of the permit issuance date. Any requests will be processed after they are received.

F. Compliance Schedule

Comment #14 - Support the use of compliance schedules. (commenters 12, 13, 29, 30, 31, 32, 36)

The commenters request that EPA and the State of Idaho work together to set a compliance schedule that allows the Coeur and Galena Mines to achieve permit level limits over a reasonable period of time. Some commenters requested a compliance schedule of up to 5 years.

Response: As discussed in Section II.B., in its final 401 certification, IDEQ authorized a four-year, nine-month compliance schedule for copper and mercury in outfall 001 and copper, cadmium, and zinc in outfall 002. A compliance schedule was not authorized for other parameters, since, based on monitoring data, it appears that US Silver can comply with these limits. The compliance schedule time frame, interim limits, and conditions required by the CWA 401 certification were incorporated into the final permit in Part I.A.5.

Comment #15 – Compliance schedule for metals limits and monitoring requirements (commenter 35)

The draft permit significantly changes monitoring frequencies, effluent limits, and other provisions which cannot be immediately met because the costs of implementation and of reviewing alternatives is much higher than current costs. An engineering study will have to be completed for a new monitoring schedule that takes into account 24-hour compositing and continuous flow monitoring. A full treatability analysis, bench and pilot scale tests and final implementation of a water treatment plant will have to be completed. In order to implement water management, data collection with flow meters, review of the data, and design of a water management plan is needed. A water management plan is expected to take 12 months to design.

One year of internal waste stream sampling is needed in order to effectively understand and remove potential problem sources.

Coeur has developed an initial review of effluent quality compared with the proposed effluent conditions. It is anticipated that even with a water management plan, some form of mechanical/chemical treatment (i.e., conventional or membrane treatment) may be necessary to achieve the new effluent limits. It is unknown what the yearly operation and maintenance costs of a new treatment plant will be given the rise in electrical and heating costs (the estimate is from \$100,000 to \$200,000 per year). The projected increase in capital costs are as follows.

Estimated Cost Increases for Permit Compliance		
Element	Estimated Capital Cost	Estimated Annual Cost
Sampling & Analysis (over current costs)	\$10,000	\$69,300
Flow - Continuous Recording	\$100,000	\$5,000
Water Management	\$660,000	\$5,000
Additional Labor (2 at \$30,000)	\$0	\$60,000
Conventional Treatment	\$2,084,000	\$200,000
Membrane Treatment	\$2,261,250	\$200,000
Total with conventional treatment	\$2,854,000	\$339,300
Total with membrane treatment	\$3,031,250	\$339,300

For these reasons, Coeur is requesting four years and nine month compliance schedules for cadmium, chromium VI, copper, lead, mercury, zinc limits as well as for any new more stringent monitoring requirements.

Response: EPA has the authority to provide compliance schedules in NPDES permits only within the context of the states' final 401 certification. In accordance with Idaho's water quality standards, found at IDAPA 58.01.02.400.03, compliance schedules are only allowed for new water quality-based effluent limitations. Therefore, compliance schedules are not allowed for any new or more stringent monitoring requirements. As discussed in response to comment 14, above, and in Section II.B, the IDEQ provided a four-year, nine-month compliance schedule for certain metals.

G. Public Participation Process

Comment #16 - Public notice all permits at the same time. (commenters 10, 14)
 The commenters urged the EPA to notice all the permits (mines, municipalities, and Central

Treatment Plant) at the same time, so that the Public Hearing will encompass all the aspects of the permits. The commenters stated that this is desirable since: the public is less likely to attend 2 or 3 hearings on what is, essentially, the same subject; understanding the whole picture is the logical way to address the situation; by issuing the permits simultaneously the public can better address the burdens that are being placed on each discharger; and, people will be gone on vacation later in the summer.

Response: EPA acknowledges the desire to evaluate the permit actions and the Superfund Central Treatment Plant (CTP) action at the same time to understand how in total, they may affect the Silver Valley. However, it was not practical for EPA to combine all these different decisions into just one public comment process. While the permits for the mines were drafted for public notice, much more work needed to be done on the permits for the municipal treatment plants. EPA did extend the comment period for the 2001 draft mine permits so that it overlapped the comment period for the CTP proposed plan. Since the time that this comment was received, the draft permits for the three municipal treatment plants were public noticed on August 28, 2002 and reissued (effective August 1, 2004). The 2003 revised draft permits for the Lucky Friday Mine and the Coeur/Galena Mine were re-public noticed (January 6, 2003) and the permit for the Lucky Friday Mine was issued (August 2003).

Comment #17 - Insufficient time for public testimony. (commenter 6)

You have your public hearing, but you take up all the time and do not let the public have their say.

Response: At both the June 5, 2001 and the February 6, 2003 public hearings on the mine permits, time was allowed for all present and willing to speak.

Comment #18 - Insufficient notification of public hearing. (commenter 16)

I'd like to formally submit a complaint that there were no ads placed in Saturday's, Sunday's or today's local paper (the Shoshone News Press), to announce this meeting. That should have happened and we're disappointed that it was not in there. At the very least, there should have been a large ad in the Friday (1st), Saturday (2nd), Sunday (3rd), and Tuesday (5th), papers announcing the hearing and its time, date, and place. This kind of attention to detail (or lack of) is what disappoints us about the EPA. It indicates that the agency is not really wanting to hear what the public has to say.

Response: The public was notified of the public hearings via an announcement mailed to the mailing list and an advertisement in three local papers. The mailing list consisted of individuals that expressed interest in both the Superfund and NPDES actions. The level of public notification was consistent with notification that occurs in the Superfund program and more than what is normally provided for other NPDES permit public hearings.

Comment #19 - Monitoring the Media Coverage. (commenter 13)

The commenter asks EPA and the State to begin a program to start monitoring the media coverage. This may not have to do with the permit, but it does have to do with the EPA and the State and our property values and everybody that lives in this valley that are suffering from all the news media that is going on in and around this valley. The commenter is concerned with outside perceptions of the valley as being a place where the river runs black, there's no trees left, and we're all dying of lead poisoning, which is not true. EPA came in here and started the Superfund site, which started the entire down spiral, and I would ask that the state and the EPA begin to start trying to control that media.

Response: EPA and the State do not have the authority to control the media.

H. Permit Process

Comment #20 - Conduct of the permit process. (commenters 12, 21)

Commenter 12: The permitting process should continue in a cooperative manner with both the mining companies and the sewer treatment plants.

Commenter 21: In order for the agency to begin regaining its credibility and trust in these communities, we ask the EPA not to repeat the mistake of releasing important documents like the NPDES limits on the mines to the media or to others before the operators themselves.

Response: We acknowledge the importance of the comment and were very careful to ensure that the mining companies received copies of the 2003 revised draft permits before EPA issued a press release to the media. We will maintain this communication strategy in the future. EPA will continue to work cooperatively with the mining companies and the sewage treatment plant operators.

Comment #21 – Lack of peer review. (commenters 17, 20, 26)

Commenters 17 and 20 are concerned that EPA has nobody to judge them, to determine if their data is good, or whether everything has been done correctly. Commenter 26 states that the NPDES proposes to present scientific studies yet no peer-reviewed scientific studies are referenced. All studies that are mentioned are government or mining documents.

Response: The 2001 draft permit and the 2003 revised draft permit for the Coeur and Galena Mines were developed following EPA guidance and procedures (e.g., the *Technical Support Document for Water Quality-based Toxics Control*, EPA 1991a) that themselves have been peer reviewed. The data that was used to develop the permit effluent limits was largely collected by Coeur Silver Valley (not EPA). In response to commenter 26, the permit and Fact Sheet did not propose to present scientific studies. It is not clear what scientific studies are being referred to in the comment.

Comment #22 - Need for citizen oversight. (commenter 26)

The health of downstream aquatic life and over 400,000 Spokane area residents depends on the safe operation of the mining facilities. We would like EPA to include a provision that allows citizens to participate in the monitoring of discharges.

Response: The NPDES program is a self-monitoring program. That is, the permittee is responsible for monitoring their discharge and reporting the results to EPA. EPA and IDEQ conduct regular compliance inspections of major NPDES permitted facilities, including the Coeur and Galena Mines and Mills, to ensure that monitoring and reporting is conducted according to the permit requirements. The NPDES regulations do not include provisions for citizen oversight. However, should a citizen have a concern regarding a facility's discharge, they should contact EPA's NPDES permits compliance unit at (206) 553-1846 or 1-800-424-4372 (ask for NPDES permits compliance).

I. General Comment on Permit Limits

Comment #23 - The permits require the mine to eliminate more waste than they are creating. (commenters 3, 5, 6, 8)

Commenters 3, 5, 6: The commenters state that the mining companies will be required to clean up more contaminants than are present in their discharges.

Commenter 8: It is not logical to expect mining companies to try to clean up streams of minerals, so called pollutants, that are there from the water picking them up from the river sides and bottom. The mines should do what they can about their own discharge, but not for what they did not put there.

Response: The commenters did not provide supporting information related to the assertions that the 2001 draft permit would require Coeur to eliminate more metals than what is present in the discharge. However, as discussed in Sections I. and II., the effluent limits in the 2001 draft permit have since been revised. The effluent limits for cadmium, lead, and zinc are no longer based on the TMDL; instead they are based on the SSC. Implementation of the SSC allows higher levels of lead and zinc to be discharged while still protecting aquatic life in the South Fork.

J. Specific Comments on Permit Limits and Data Used to Calculate Limits

Comment #24 - EPA data skewed. (commenters 13, 17)

The commenters stated that the amount of minerals entering the creek will vary over time due to natural processes (erosion of ore bodies which outcrop). Commenter 13 was concerned that river sampling was done only once or twice, which is not enough to get an accurate level. Commenter 17 stated that since EPA sampling includes natural ore minerals, the data is skewed.

Response: The South Fork data used to develop the permit limits was based on samples collected by Coeur upstream of their discharges from November 1998 to December 1999 (see Appendix B of the 2001 Fact Sheet). Approximately 10 samples were collected upstream of each outfall in order to determine upstream river conditions. These data may include ore body erosion, however in response to comments on the TMDL, EPA noted that based upon a report by Maest, the effect of such erosion would be minor (see TMDL Response to Comments, Section 2.5, comment #2). Background conditions (whether they are natural or not) must be subtracted from the water quality criteria to insure that the discharge will not result in an exceedence of the criteria in the river (see Appendix A of the Fact Sheet for the 2003 revised draft permit). The permit does require monitoring of the South Fork to collect additional data and create a more robust data set that can be used to help establish background levels to support the development of revised water quality-based effluent limits (if needed) in the next permit.

Comment #25 – Where are samples collected. (commenter 23)

I want to know where exactly are your samples of water taken?

Response: The effluent data and upstream river concentrations used to calculate the NPDES permit limits were based on data collected by Coeur Silver Valley. The background monitoring locations in Lake Creek and the South Fork Coeur d'Alene River were immediately upstream of outfalls 001 and 002. The outfall locations are shown in the map in Appendix A of the Fact Sheet for the 2001 draft permit.

Comment #26 - Consideration of hardness consistent with Spokane River permits. (commenter 19)

The publicly owned treatment works (POTWs) discharging into the Spokane River have been given simulative capacity considerations due to the hardness of the water they discharge. Why isn't that same consideration applied to the mine permits?

Response: The effluent limits for the hardness-based metals were determined in two different ways:

(1) cadmium, lead, and zinc: The effluent limits for cadmium, lead, and zinc are based on the SSC. The SSC were calculated using the 5th percentile hardness of the effluent, since no mixing zone was authorized. This is discussed in Appendix A, Section II.A. of the Fact Sheet for the 2003 revised draft permit. This consideration (use of effluent hardness) is the same as the POTWs that discharge to the Spokane River.

(2) copper and mercury: The effluent limits for copper and mercury were calculated using the hardness at the edge of the mixing zone in the receiving water. The hardness at the edge of the mixing zone takes into account the mixture of the receiving water hardness and the effluent hardness (see Appendix A of the Fact Sheet for the 2003 revised draft permit). Some of the final effluent limits for

copper and mercury were recalculated in the final permit based on revised mixing zones. These calculations are shown in Appendix C.

The use of effluent hardness where a mixing zone is not authorized and edge of mixing zone hardness where a mixing zone is authorized is consistent with the approach used for NPDES permits issued to the municipalities discharging to the Spokane River.

Comment #27 - Mixing zone size. (commenters 32, 35)

Commenter 32: An increase in the mixing zones would not be applicable to the TMDL metals. However, a mixing zone of 75-100% would be applicable to the non-TMDL metals. SNRC would like you to evaluate these parameters based on an increase in the mixing zone to 75-100%. Commenter 36: Coeur will be applying for a mixing zone of 70% as opposed to a mixing zone of 25%.

Response: Effluent limits for copper, chromium VI (outfall 001 only), and mercury in the 2001 draft permit and 2003 revised draft permits were based on a 25% mixing zone. These mixing zones were based on the State's preliminary 401 certifications of these permits. No mixing zone is available for cadmium, lead, and zinc, since the receiving waters are impaired for these parameters. As discussed in Section II.B., above, the state is responsible for establishing mixing zones through the final 401 certification. IDEQ's final 401 certification authorized mixing zones for copper and mercury that ranged from 25% to 75%. These mixing zones were used to develop the effluent limits in the final permit. The calculations are provided in Appendix C.

Comment #28 – Differences between the load limits. (commenter 36)

In general, the maximum allowable concentrations are higher than those in the TMDL, however the monthly average values are exactly the same as the limits established in the TMDL. There is apparently some variability in the load limits for zinc: the maximum discharge limit for Coeur is 1,500 ug/L. While this variance is somewhat perplexing, it is apparently consistent with the TMDL as written.

Response: The average monthly limits for cadmium, lead, and zinc in the 2001 draft permit were based upon the TMDL WLAs. The TMDL WLAs were expressed as mass or load (lbs/day). The TMDL did not establish maximum daily limits, therefore the maximum daily limits for cadmium, lead, and zinc were technology-based limits based upon the effluent guidelines (see Appendix B, Sections IV.A. and II. of the 2001 Fact Sheet). The technology-based limits are expressed in terms of concentration. As discussed in Section II. of the Response to Comments, above, the cadmium, lead, and zinc effluent limits in the final permit have been revised and now are based upon the SSC. Concentration-based limits were derived from the SSC. Mass-based limits were calculated by multiplying the concentration-based limits by the effluent flow.

Comment #29 - Flow tiers (commenter 35)

Flow tiers were developed for four specific target sites in the TMDL. These target sites were used to set effluent limits for cadmium, lead, and zinc from both outfalls 001 and 002. The flow tiers are too broad to match actual compliance levels allowable under the loading methodology used to determine permit effluent limits. If additional flow tiers are used, there will be a more accurate representation of actual stream flows. This will result in a better definition of allowable effluent limits. The following ten flow tiers are recommended.

Flow Tier Recommendations for Outfall 001 and 002

Draft Permit		Recommended	
Target Flow Tiers (cfs)	Flow Percentiles	Flow Percentiles	Target Flow Tiers (cfs)
<97 cfs	<10th	<10th	<97cfc
≥97 to <268	10 th - <50th	≥10 to <20	≥97 to <140
≥268 to <1290	≥50 th to <90th	≥20 to <30	≥140 to <182
≥1290	≥90th	≥30 to <40	≥182 to ≤225
		≥40 to <50	≥225 to <268
		≤50 to <60	≥268 to <524
		≥60 to <70	≥524 to <780
		≥70 to <80	≥780 to <1034
		≥80 to <90	≥1034 to >1290
		≥90	≥1290

Response: The development of effluent limits based on receiving water flow tiers is not a regular practice in NPDES permitting. However, because four flow tiers were developed in the Coeur d'Alene Basin TMDL for cadmium, lead, and zinc they were also included in the 2001 draft permit. EPA also included flow tiers for parameters other than cadmium, lead and zinc for consistency purposes.

IDEQ's 2002 preliminary 401 certification, requested that one additional flow tier be added to the previous 2001 draft permit. The fifth flow tier allows effluent limits to be increased slightly while maintaining consistency with Idaho's water quality standards. The largest gap in the four tiers occurs between the 50th and 90th percentiles, therefore EPA added one additional flow tier at the 70th percentile for outfalls 001 and 002. See the 2003 Fact Sheet for the revised draft permit for details.

The Coeur d'Alene River Basin TMDL that included four flow tiers for cadmium, lead and zinc was declared null and void in Idaho 1st District Court on September 6, 2001. Without the TMDL, the effluent limits for cadmium, lead and zinc must be protective at end-of-pipe because an area of dilution (i.e., mixing zone) is not available. Therefore, the final permit does not include flow tiers for cadmium, lead, and zinc. However, flow tiers are retained for copper and mercury.

EPA has not increased the number of flow tiers from the five included in the 2003 revised draft permit because:

- 1) The difference between the additional flow tiered limits is insignificant.
- 2) Limits that vary with receiving water flow require more operator attention.
- 3) The monthly discharge monitoring reporting paperwork is greatly increased presenting the increased burden on the permitting agency and the permittee and increasing the potential for mistakes.
- 4) The compliance work that is necessary to ensure that the effluent monitoring is compared to the correct flow tier is greatly increased.
- 5) IDEQ's 2006 final 401 certification authorized five flow tiers.
- 6) Coeur's subsequently commented that five flow tiers were acceptable (see comment 75).

Comment #30 - Flow data is incorrect. (commenters 25, 35)

Commenter 25: The flow data submitted on the DMRs for outfall 001 should be used when calculating effluent limits, but not the additional flow data provided by Coeur (dated April 2000). Additional flow data for April 20, 1999 (3.48 mgd) is extremely high and would have to be caused by an upset condition causing a brief surge of water. The flume and V-notch weir were not designed to handle a flow of such high magnitude. In addition the flow data submitted on the DMRs for outfall 002 should be used, and not the additional flow data provided by Coeur - dated April 2000.

Commenter 35: Section III.E of the 2001 Fact Sheet includes Table 1 which summarized flow rates pertaining to each of the outfalls. The information in this table is not correct. Outfall 001's average and maximum discharge rate is actually 0.955 mgd (1.48 cfs) and 1.65 mgd (2.56 cfs) respectively. Outfall 002's average and maximum discharge rates are 0.438 mgd (0.679 cfs) and 0.895 mgd (1.38 cfs), respectively. These flows are based on DMR flow data from December 1994 through December 1999.

Response: EPA originally calculated the average and maximum flow rates for use in the 2001 fact sheet and draft permit using flow data from both the monthly DMRs as well as additional flow monitoring provided by Coeur from October 1998 through November 1999. However, after applying an outlier test, it appears that the flow data for April 20, 1999 (3.48 mgd) and May 3, 1999 (2.14 mgd) differ significantly from the other data (i.e., are stragglers or outliers). Therefore these data points were removed from the data set when calculating the final effluent limits. The

average annual and maximum monthly flow of the remaining data for outfall 001 is 0.940 mgd (1.46 cfs) and 1.66 mgd (2.57 cfs), respectively.

In addition, the flow data originally used to determine the maximum flow from outfall 002 in the draft permit was incorrect. The verified average and maximum flows from outfall 002 are 0.428 mgd (0.663 cfs) and 0.895 mgd (1.39 cfs), respectively. These revised maximum flows were used to calculate the mass-based effluent limits for outfall 001 and outfall 002 in the 2003 revised draft permit and the final permit (see Section III.A.2 and Appendix C of the 2003 revised fact sheet).

Comment #31 - Revised effluent limits (commenter 35)

The following charts contain corrected effluent limits based on corrected effluent flows.

Effluent Limitations for Outfall 001 to Lake Creek (using 2.57 cfs effluent flow)				
Parameter	Flow Tier		Effluent Limitations, ug/l	
	Target Site	Flow Value, cfs	Maximum Daily	Average Monthly
Chromium VI	Lake Creek directly upstream of outfall	< 1.7	18	8.7
		≥ 1.7 to < 3.8	18	9.3
		≥ 3.8 to < 23	22	11
		≥ 23	52	26
Copper	not dependent upon river flow		22	10
Mercury	Lake Creek directly upstream of outfall	< 1.7	0.022	0.011
		≥ 1.7 to < 3.8	0.023	0.012
		≥ 3.8 to < 23	0.027	0.014
		≥ 23	0.064	0.032

Effluent Limitations for Outfall 002 to SFCDA River (using 1.39 cfs effluent flow)								
Parameter	Flow Tier		Effluent Limitations, ug/l					
	Target Site	Flow Value, cfs	Max Daily	Ave Monthly	Max Daily	Ave Monthly	Max Daily	Ave Monthly
			25% mixing zone		50% mixing zone		75% mixing zone	
Copper	SFCDA River directly	< 48	65	30.4	117	54.6	161	74.9
		≥ 48 to < 109	69.6	32.3	129	60	188	87.4

Effluent Limitations for Outfall 002 to SFCDA River (using 1.39 cfs effluent flow)								
Parameter	Flow Tier		Effluent Limitations, ug/l					
	Target Site	Flow Value, cfs	Max Daily	Ave Monthly	Max Daily	Ave Monthly	Max Daily	Ave Monthly
			25% mixing zone		50% mixing zone		75% mixing zone	
Mercury	SFCDA River directly upstream of outfall	<48	0.13	0.065	0.24	0.12	0.35	0.17
		≥48 to < 109	0.19	0.095	0.36	0.18	0.53	0.26
		≥109 to <649	0.41	0.20	0.79	0.40	1.2	0.59
		≥649	2.3	1.2	4.6	2.3	6.9	3.5

Response: EPA revised the effluent flows used to calculate the effluent limits in response to Coeur’s suggestion (see comment #30). The revised maximum effluent flows of 2.57 cfs (outfall 001) and 1.39 cfs (outfall 002) were used to develop the limits in the 2003 revised draft permit (2003). The basis for the revised effluent flows and revised limits are discussed in detail in the 2003 Fact Sheet. The final effluent limits are also based upon these effluent flows. See Appendix C.

Comment #32 – Chromium limits and monitoring (commenter 35)

Footnote 1 in Table B-9 of Appendix B of the 2001 Fact Sheet indicates that EPA has assumed that the Chromium listed in Coeur’s monitoring database is in the hexavalent form (i.e., Chromium VI). This assumption was used to determine “reasonable potential” to exceed water quality standards. However, the parameter in the database is total Chromium not hexavalent. Page B-9 of the Fact Sheet states that in order to determine “reasonable potential” to cause or contribute to an exceedence of water quality criteria for a given pollutant, for each pollutant present in a discharge, EPA compares the maximum projected receiving water concentration to the criteria for that pollutant. There has never been a sample of effluent at Coeur analyzed for Chromium VI therefore EPA cannot determine a “reasonable potential” for a metal which has not been sampled. There are only four data points in the 1998-2000 database and it is Coeur’s opinion that this is not enough data to determine reasonable potential and include ambient water quality monitoring for chromium.

Response: Because the effluent data provided to EPA for chromium is in the total form and Idaho’s water quality standards only include criteria for Chromium III and Chromium VI an accurate “reasonable potential’ analysis can not be determined. Therefore the chromium VI effluent limitations for outfall 001 and ambient monitoring requirements were removed from the final permit. The removal of the chromium VI limits was public noticed in the 2003 revised draft permit and

discussed in the Fact Sheet for that permit. The outfall 001 effluent monitoring of Chromium VI was decreased from weekly to once per quarter in the final permit. The effluent monitoring data will be used to determine the need for chromium VI limits when the permit is reissued.

K. Monitoring

Comment #33 – Arsenic Monitoring. (commenter 26)

We wonder why arsenic is not listed as one of the monitoring items. Does arsenic in the mine wastewater or tailings pond exceed limits?

Response: Limits and monitoring were not developed for arsenic since monitoring by Coeur and EPA indicated that arsenic was always reported as not detected in the discharges, at detection limits lower than the lowest water quality criteria (50 ug/l). Therefore, there is no reason to believe that arsenic in the discharges could cause or contribute to an exceedence of water quality standards in the South Fork and, therefore, effluent limits and monitoring for arsenic were not included in the permit.

Comment #34 - Mining and milling reagents. (comment 26)

What are the petroleum products, nitrates or other chemicals that are used in the mining and milling process - and how is the discharge of these chemicals to the South Fork monitored? Is there a potential for acid-mine drainage and how will this be monitored?

Response: Coeur reported the following list of reagents used at the Galena Mill: methyl isobutyl carbinol, hydrated lime, and sodium cyanide. The permit does not require monitoring the discharge for each of these reagents since analytical methods to monitor such reagents are limited and water quality standards are not available for the reagents. The permit requires whole effluent toxicity (WET) testing, which was included, in part, to evaluate whether the pollutants that are not being monitored or limited could be toxic to aquatic life. If the results of a WET test indicate that the effluent is toxic (i.e., exceeds a toxicity trigger), then additional WET testing is required. If additional WET testing results in another exceedence of a toxicity trigger, then an evaluation (Toxicity Reduction Evaluation) is required to determine the cause of the toxicity and prevent the recurrence of toxicity. Through the Toxicity Reduction Evaluation it may be determined whether one or a combination of the reagents listed above is causing a toxicity problem.

Comment #35 - Sampling frequency. (commenters 32, 35)

Commenter 32: Due to the current stressful financial environment of the community and the operating mines, SNRC would like to request a decline in the sampling frequency proposed in the draft permit. Given the cost of laboratory analysis, it would be a financial burden to all of us if the permit conditions stand. In reviewing the data, we feel it seems unwarranted based on the

consistency of the flows.

Commenter 35: Coeur currently monitors monthly for Outfalls 001 and 002. The monitoring provisions proposed in the draft permit significantly increase the frequency of monitoring required, which in turn increases the cost of compliance, unnecessarily. Federal regulations, 40 CFR 122.44(i) and 122.48, describe the monitoring requirements. Section 40 CFR 122.44(i) states:

“Except as provided in paragraphs (i)(4) and (i)(5) [which are not relevant here] of this section, requirements to report monitoring results shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge, but in no case less than once a year.”□

Section 40 CFR 122.48 states:

“All permits shall specify...(b) required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring.”□

The permit does not need the frequency of monitoring as set forth in the draft permit. For example, EPA developed a reasonable potential analyses to determine the potential for the discharge to exceed water quality criteria. However, the South Fork will be managed through the TMDL program. Further, Coeur’s contribution to loading is insignificant to the overall metal loading from non-point sources. The sampling frequency outlined in the draft permit does not take this fact into account. Moreover, Coeur’s data show a highly consistent discharge quality for Cd, Pb, Zn, and Cu for both outfalls. Monthly monitoring when reviewed with daily flow monitoring will verify that there were no significant changes in discharge quality during the month.

Water management techniques employed by Coeur have improved certain constituents EPA evaluated for the draft permit. For example, the 2001 DMRs as compared to previous years, show marked reduction in the amount of copper in the effluent discharged to the South Fork of the Coeur d’Alene River. The Fact Sheet states “[m]ore frequent monitoring and composite sampling was determined necessary due to the composition of the outfalls (process water) and the more continuous nature of the discharges”. This statement does not actually explain EPA’s reasoning. What is it about the composition of the process water and the continuous nature of the discharge, which makes frequent monitoring necessary to characterize the quality of the effluent? Given the consistent and improved nature of the effluent, and the additional cost of monitoring, it seems reasonable to continue monitoring on the monthly basis.

Response: EPA included weekly effluent monitoring in the draft permit consistent with the requirements placed on similar facilities (i.e., Hecla Lucky Friday, Hecla Grouse Creek, Thompson Creek, Astaris, Teck Red Dog Mine, Kennecott Greens Creek Mine, and Coeur Alaska Kensington). In determining the monitoring frequency, EPA weighed the need to monitor frequently (e.g., to show compliance with the maximum daily and average monthly limits) with the cost of the monitoring.

Federal Regulation 40 CFR 122.44(i) states that monitoring requirements shall assure compliance with permit limitations. Because both monthly and daily limits are included in the permit, weekly monitoring reasonably assures compliance with the maximum daily limit.

We also reviewed the variability of the effluent metals data as measured by the coefficient of variation (CV). Where the sample was less than the method detection limit (MDL), EPA assumed 1/2 of the MDL for the purposes of calculating the CV. The CV is measured as the ratio of the standard deviation of the data to the mean of the data. Making this assumption, the following CVs were calculated:

Coefficients of Variations for Effluent Data from December 1994 - April 2000		
Parameter	Outfall 001	Outfall 002
Cadmium	0.75	1.37
Copper	1.43	0.42
Lead	0.68	1.34
Zinc	0.77	1.32

Note: A CV of 0.6 was assumed for mercury since most of the available data is below the method detection level (MDL).

The more variable the data is, the greater the CV. EPA's TSD (Appendix E, page E-3) states that typical CV values are in the range of 0.2 to 1.2. The TSD goes on to further state that when less than 10 data points are available, a conservative (assumes relatively high variation) estimate of 0.6 is used. Except for copper from outfall 002 all of the CVs are greater than 0.6, which indicates variability. A CV for mercury could not be determined since the mercury data were below the method detection level.

EPA recognizes that the more frequent monitoring will be an added expense. However, for the reasons discussed above, the effluent monitoring frequency for cadmium, copper, lead, and zinc has been retained in the final permit. The effluent monitoring frequency for chromium was reduced to quarterly as discussed in response to comment #32 above. In addition, the effluent monitoring for mercury will be reduced to bi-monthly since most of the mercury data was non-detect and the monitoring method required for mercury to meet more stringent detection limits will result in more expense than the monitoring methods for other metals.

Comment #36 - Effluent Flow Monitoring. (commenter 35)

Table 5 of the 2001 Fact Sheet (and Table 2 of the 2001 Draft permit) indicate that continuous flow monitoring is required. All discharges are gravity flow from ponds through a v-notch weir

(outfall 001) and a pipe (outfall 002). Power is not available at either site. Coeur does not use, nor plans to use, mechanical water treatment and therefore does not have any method of continuously recording flow. The expense of installing continuous flow monitoring is not necessary. Coeur proposes that a stage staff be installed and calibrated to flows and read and recorded daily as part of daily inspections of the property. These values would be used in calculating loading values and other flow data required by the permit. This flow monitoring is sufficient given the consistency of the flows and quality of the discharge.

Response: The EPA reviewed the available flow monitoring and found it to be consistent. The flow from outfall 001 ranges from 0.528 mgd to 1.656 mgd resulting in a coefficient of variability of 0.26 (very low). In addition, outfall 002's flow ranges from 0.16 mgd to 0.90 mgd resulting in a CV of 0.36 (also low). Therefore EPA agrees with Coeur's recommendation, and has changed the final permit (Tables 1 and 2) to require "daily" flow monitoring (not continuous) with the sample type designated at "measured" (not recording).

Comment #37 - Composite vs. grab sampling. (commenter 35)

Table 5 of the 2001 Fact Sheet, and Tables 1 and 2 of the 2001 Draft Permit, require that 24-hour composite samples be collected for metals, hardness, and whole effluent toxicity (WET). Coeur requests that the current method of sample collection (grab samples) be retained in the final permit because Coeur's 1998-2000 database does not have the range of variability necessary to require composite sampling. EPA does not explain why 24-hour composite sampling was proposed rather than grab sampling.

Response: The NPDES regulations at 40 CFR 122.41(j)(1) require that samples be representative of the monitored activity. The 2001 draft permit required composite samples for metals, hardness and WET and grab samples for pH and temperature. The analytical methods found in 40 CFR Part 136 are required for NPDES monitoring. These regulations do not specify sample collection methods (grab or composite), except that grab samples must be collected for certain parameters that may change during the time necessary for composting, such as pH and temperature. Therefore, grab sampling was included in the permit for these parameters (pH and temperature).

For the other parameters, the *US EPA NPDES Permit Writers Manual* (EPA-833-B-96-003) and Appendix F of the EPA's TSD (EPA 1991b.) recommend that composite samples be collected when the effluent being sampled varies significantly over time, e.g., as a result of flow or quality changes. The discharges from the Coeur and Galena Mines and Mills are a combination of the following waste streams;

outfall 001 includes sanitary wastes, excess water pumped from the Galena mine (mine drainage), surface water associated with project disturbance (including development rock areas, roads, mine parking area, shaft and general mine laydown areas for the Galena mill), and water used for

domestic and fire water purposes.

outfall 002 includes Galena and Coeur tailings, sanitary waste, Rainbow mine drainage, and seepage and runoff from the Coeur waste rock dump.

Even though these waste streams are combined in the Lake Creek and Osburn ponds, respectively, Coeur presents no information showing that the water chemistry does not change over time. In fact, the table in response to comment #35, above, suggests that there is variation. In the absence of specific information demonstrating lack of variation in flow and quality, 24-hour composite sampling is required.

EPA acknowledges that composite sampling is more operator intensive than grab sampling. However, many other facilities have made accommodations to collect composite samples. Composite sampling is required for most of the major facilities for which Region 10 writes NPDES permits.

In regards to mercury, we reviewed EPA guidance on the use of method 1631. According to EPA guidance (EPA 2001) sufficient data has not been collected to demonstrate that composite sampling can collect mercury samples that are free of contamination and that do not lose mercury via volatilization. Therefore, EPA has replaced the requirement for 24-hour composite sampling for mercury with grab sampling (see Tables 1 and 2 of the final permit).

Based on the above discussion and because of the desire to obtain representative samples, the final permit retains the requirements for composite sampling of WET and for metals, except for mercury.

Comment #38 - Mercury Method Detection Limits (commenter 35)

Page 7 of the 2001 draft permit requires a method detection limit (MDL) for mercury that is below standard EPA protocols that local laboratories can provide. Coeur requests that the MDL for mercury be set at a level that can be obtained using EPA approved analytical method 245.10. Compliance with the mercury limits would be achieved if the discharge is less than the MDL. The 1600 series laboratory method proposed are five times more expensive than method 245.10 and samples will have to be shipped to Seattle. The turnaround time associated with the shipping (28 days) will exceed the reporting time in the draft permit.

The MDLs are driven by ambient water quality sampling since it is expected that background levels of mercury are at or below water quality standards.

Response: In order to determine if the water quality-based effluent limits for mercury are being achieved, the test method used by the permittee must have a method detection limit that is less than the limit, if an EPA approved method is available (See Part I.A.6. of the final permit). The lowest mercury limit is 0.011 $\mu\text{g/L}$ (tier

1, outfall 001). The draft permit specified that the permittee use methods that can achieve MDLs of less than the effluent limits. For ambient monitoring, the permit requires a mercury MDL of 0.001 ug/L. Monitoring must achieve this low level, since the data will be used to determine background conditions and the need for revised mercury limits in the next permit reissuance. The MDL of 0.001 ug/l was selected since it is below the most stringent mercury water quality criteria (0.012 ug/l – the aquatic life chronic criteria).

EPA generally does not specify test methods in permits because different laboratories can achieve different MDLs than those provided in the monitoring descriptions (generally found at 40 CFR 136). The test method recommended by the commenter (245.1, cold vapor) generally achieves a MDL of only 0.2 ug/L, which is not sensitive enough to determine whether or not all of the effluent limits are being met. Based on EPA test method supporting information, it appears that only Method 1631 (Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry) can detect mercury at these low levels. This method was approved by EPA on June 8, 1999 (64 FR 30416). A technical correction regarding the use of field blanks was further published on June 18, 2001 (66 FR 32774). This method is expected to achieve minimum levels or 0.0005 ug/L; well below the effluent limitations.

The final permit retains the requirement that EPA approved test method that are less than the effluent limitations be used to monitor the effluent and retains the ambient mercury monitoring MDL in Section I.D.1, Table 5. We have reduced the effluent mercury monitoring frequency from weekly to twice per month (see response to comment #35, above).

EPA guidance on the use of Method 1631 for low level mercury analysis

In regards to the concern about turnaround time, EPA will extend the DMR due date to the 20th of the month following sample collection (see Part III.B. of the final permit). The draft and revised draft permit required that the DMR be submitted by the 10th day of the following month. An additional 10 days should allow adequate time for monitoring, analysis, and reporting.

Comment #39 - Monitoring reporting data. (commenter 35)

Section III of the 2001 draft permit requires all monitoring reports to be in by the 10th day of the following month. This is not realistic given the complexity (i.e., tier compliance, stream flow calculations, loading calculations, laboratory turnaround). According to the draft permit, much of the data must be collected at the end of the month. More time is needed to compile, calculate and prepare the reports. Coeur requests that the report be provided on the 20th day of the following month.

Response: EPA finds the request to be reasonable and therefore, Section III.B, *Monitoring of*

Reporting Results has been changed to require that reports be postmarked by the 20th day of the following month. Also see previous comment and response.

Comment #40 - Safety of ambient river flow monitoring. (commenter 35)

Page 16 of the 2001 Fact Sheet (sections I.D.1 and I.D.2 of the draft permit) requires river flow monitoring upstream of outfall 002. This creates a safety issue since under certain conditions, it is impossible to enter the stream to obtain flows using a hand held measuring device. Coeur suggests that EPA re-implement the use of the river staging station at Silverton with USGS and others. This station provided up-to-date information over the internet when operating. Without this station, Coeur will have to either install an identical system a short distance from the existing station or develop an in-stream flow gauging "bridge" or other structure that allows safe monitoring of mid-stream flows during average and high flow events. The cost is estimated at between \$30,000 and \$50,000 and is unnecessary.

Response: The effluent limits for copper and mercury vary with the flow in the receiving waters. EPA included these flow-tiered effluent limits in the permit based on requests from the Permittee that the maximum amount of flexibility be provided. In order to determine what copper and mercury effluent limits are in effect for discharges from outfalls 001 and 002, it is necessary that the average monthly upstream flow be obtained. It is incumbent upon the Permittee to collect that data.

The United States Geological Survey (USGS) operated station 12413150 - South Fork Coeur d'Alene River at Silverton from November 1967 to July 2000 through the use of EPA funding. This monitoring network was designed to evaluate metal loading to the South Fork. EPA does not expect to continue funding monitoring at this site. However, the Permittee could contract with the USGS to continue this flow monitoring or rent the existing station site for permitting purposes.

Because there is uncertainty whether or not ambient flow monitoring upstream of outfalls 001 and 002, could be achieved throughout the entire year, EPA has modified footnote 1 in Tables 1 and 2 of the final permit to read "If the upstream flow can not be determined due to safety concerns, the first tier limits apply." The first tier limits are those that would apply all of the time if the limits were not dependent on receiving water flow.

Comment #41 - Depth-integrated ambient river monitoring. (commenter 35)

Page 18 of the 2001 Fact Sheet and Section I.D.1 of the 2001 draft permit requires depth integrated sampling for Lake Creek and the South Fork. During much of the year, depth integrated sampling of the South Fork is not possible or safe. Depth integrated sampling of Lake Creek is not technically possible because of the Lake's steep gradient and large number of boulders and stream debris. During certain times of the year, flow in Lake Creek is quite low resulting in limited surface flows combined with ice conditions. Coeur has no reasonable method to meet this permit provision and therefore it should be eliminated.

Alternatively, Coeur requests that a grab sample be substituted for depth integrated sampling. Grab sampling is safely possible during extreme stream flow conditions. Coeur does not believe that significant variability exists in the ambient water quality to require a more elaborate sampling technique.

Response: The requirement for depth integrated sampling was included in the 2001 draft permit based on the state's 2001 pre-certification comments (IDEQ 2001). The final certification did not require depth integrated sampling. Therefore, this requirement was removed from the permit and Part I.D.1.c. was revised to read "All ambient samples must be grab samples."

L. Whole Effluent Toxicity (WET) Testing Conditions

Comment #42 - WET testing not needed. (commenters 32, 35)

Commenter 32: To perform toxicity tests on impaired waters would seem a wasted fiscal effort that would not give you any reliable data. We request that WET testing be removed from the permit until the South Fork meets water quality standards.

Commenter 35: Page 17 of the 2001 Fact Sheet (and Section I.B of the 2001 draft permit) requires a level of whole effluent toxicity (WET) testing that will cost between \$700 - \$1400 per test and only provide a limited information set. By virtue of EPA and DEQ implementing a TMDL for the South Fork it's suggested that the River is not meeting current water quality standards and is in some manner impacting aquatic life. The TMDL shows that Coeur's discharge is insignificant compared to the total stream loading, therefore it seems unreasonable to expect that WET testing will provide any meaningful data in analyzing the discharges and potential impact to the stream system.

It is bordering on inconceivable to believe that further data is needed to understand the effects of cadmium, lead and zinc and other metals on the environment when millions of dollars have been spent by EPA and other US agencies on testing in connection with the Silver Valley natural resource damage action. Regulation 40 CFR 122.44(d)(1) requires, in general, WET testing when the agency does not know the potential impact of the effluent being discharged on state water quality standards. The regulation says, in part that:

"Limits on whole effluent toxicity are not necessary where the permitting authority demonstrates in the fact sheet or statement of basis of the NPDES permit, using the procedures in paragraph (d) (1) (ii) of this section, that chemical-specific limits for the effluent are sufficient to attain and maintain applicable numeric and narrative State water quality standards."□

Coeur's basic position is that if the "standard" EPA is addressing with WET testing is "surface waters free from toxic substances", then EPA already knows what the data show. The data show that it is lead, zinc and cadmium which are of concern with respect to aquatic life. EPA knows

these facts because it has spent time and effort deciding to adopt, or cause to be adopted, TMDLs for lead, zinc and cadmium after extensive testing and consideration. Moreover, EPA, in the ongoing cleanup and natural resource damage action against various of the mining companies, decided to focus on lead, zinc and cadmium to protect aquatic life.

Coeur proposes elimination of the WET testing for outfalls 001 and 002 until the South Fork meets water quality criteria either through management of contributors or implementation of site specific criteria. In the alternative, yearly testing without any compliance provisions in the permit would provide EPA and IDEQ data for future consideration.

Response: Toxicity tests on the effluent are used to determine if the effluent is toxic to aquatic life. This is important to know regardless of whether or not the receiving water is impaired. In fact, the toxicity tests may provide information as to why a receiving water is impaired and therefore provide information on how the impairment may be remedied. The NPDES regulations require that permits contain effluent limits to control pollutants that are or may be discharged at levels having the reasonable potential to cause or contribute to an excursion above any State water quality standard including any state narrative criteria for water quality (40 CFR 122.44(d)(1)(i)). As discussed in the 2001 Fact Sheet, the State of Idaho has a narrative water quality criteria that surface waters of the State shall be free from toxic substances in concentrations that impair designated beneficial uses. Idaho's narrative toxic criteria is implemented through WET testing, and where needed, WET limits. The NPDES regulations require that EPA determine whether or not the discharge causes or contributes to excursion of the States narrative toxic criteria (40 CFR 122.44(d)(1)(i) and (v)). Sufficient WET testing was not available for the Coeur/Galena discharges to make this determination, therefore WET testing is required in the permit. The WET testing required in the permit is consistent with WET testing required for other major mining and industrial facilities permitted in Idaho.

Coeur cites 40 CFR 122.44(d)(1)(v) that allows not including WET limits and testing “where the permitting authority demonstrates in the fact sheet or statement of basis of the NPDES permit...that chemical-specific limits for the effluent are sufficient to attain and maintain applicable numeric and narrative State water quality standards.” Neither the fact sheets for the 2001 draft permit or the 2003 revised draft permit contained such a demonstration. To make this determination, the TSD (Section 3.3.7) recommends that the discharger conduct a toxicity identification evaluation (TIE) to identify the causative agent(s) in the effluent. The Permittee has not submitted a TIE to support this comment. Because the specific toxicant that would contribute to the WET of the discharge have not been identified, it is unknown if the chemical-specific limits themselves will control WET. For example, reagents used in the flotation process are not subject to chemical specific limits and may contribute to WET.

EPA agrees that it has information regarding the aquatic effects of individual metals at specific concentrations (such as cadmium, lead and zinc). This information was used to develop the site-specific criteria for cadmium, lead, and zinc. The EPA, and the state, also know that these criteria are exceeded in the South Fork. However, WET testing goes beyond individual parameter effects by determining whether there are additive, synergistic, or antagonistic effects due to mixtures of parameters. In addition, the testing considers any dilution available in the receiving water. Although much testing has been conducted in association with ongoing cleanup efforts in association with the natural resource damage action, EPA is not aware of any testing of Coeur's effluent (e.g., a TIE) that measures the aggregate effects of the effluent.

For the reasons discussed above, quarterly WET testing is retained in the final permit. As a point of clarification, toxicity triggers are not final effluent limits (i.e., compliance levels) but if they are exceeded additional testing and evaluation are required.

M. Groundwater Issues and Seepage Study Requirements

Comment #43 - Recognition of groundwater in the permit. (commenter 27)

By Idaho regulation, ground water resources must be protected for the same beneficial use as surface waters if there is a direct inter-relationship between the two. This interaction is well established in the South Fork. Flow measurements and load carrying capacity must be determined and distributed for ground waters as they have been for surface waters. This additional load carrying capacity has not been recognized in the draft permits for any of the facilities.

Response: The NPDES permit does not include effluent limits for groundwater since Clean Water Act jurisdiction does not extend to groundwater. However, limits can be established on the seepage to groundwater where it is shown that there is a hydrological connection between the groundwater and a surface water of the U.S. and where it is shown that the seepage may cause or contribute to an excursion of a water quality standard in the receiving surface water. At this time, EPA does not have enough information to quantify the hydrological connection from seepage from any sources at the Coeur and Galena Mines to Lake Creek or the South Fork. That is why the final permit requires a seepage study and a hydrological analysis to quantify the impact of seepage from the tailings ponds to waters. If this connection is established, effluent limits, if needed, can be established for discharge to surface water from the combined flow (seepage and outfall) from the tailings ponds.

Comment #44 - No reason for the seepage study. (commenter 35)

The draft permit proposes that the impoundment ponds be studied in order to ascertain if seepage from them is occurring which reaches adjacent streams. Coeur would agree that EPA has authority, in connection with an NPDES permit, to require various monitoring which is justified by the facts of a particular case. Coeur does not agree, however, that the agency has authority to require, in connection with a permit, a “study” since nothing can be found in the federal statute, or in the regulations that appears to give EPA this right.

Data from Coeur’s 1998-2000 water quality database has already been submitted to EPA that shows both upstream and downstream conditions for Lake Creek and the South Fork in relation to the ponds. The data suggests that little or no impact is occurring from seepage which may or may not be occurring. EPA used this downstream water quality data when calculating effluent limits. If seepage was adding to the stream loading, it was accounted for when setting effluent limits, reducing Coeur’s overall discharge allowances.

If seepage is available, tailings consolidation through the years has and will continue to minimize the entrained water in the tailings reducing the seepage rate from the outfalls. Proper management of a tailings beach, consistent with dam design approved by the state’s Dam Safety Engineer, will continue to meet this design objective.

Coeur believes it is unreasonable to conduct a water balance type of seepage study because of the technical difficulties involved in accounting for water entrained in tailings, estimating the degree of tailings consolidation, accounting for the natural variability of evaporation and quantifying various inflows to the pond (e.g. ground water). Section VIII.B of the fact sheet and Section I.C of the permit. It is felt that any seepage study which might be designed by Coeur would not add information which would be helpful to EPA. To design and then perform a study without good reason only adds to the cost burden on the company.

Response: The authority to require a seepage study in the permit is provided by Section 308(a)(A)(v) of the CWA which allows EPA to require the owner or operator of any point source to “provide such other information as he may reasonably require”. In addition, Section 402(a)(2) of the CWA authorizes the Administrator to prescribe permit conditions for data and information collection, reporting, and such other requirements as he deems appropriate to carry out the objectives of the Act (33 U.S.C. § 1342(a)(2)). EPA’s regulations are likewise very broad in scope, requiring NPDES permits to include “any requirements . . . necessary to . . . [a]chieve water quality standards.” 40 CFR 122.44(d). In order to determine if there is a hydrological connection between the ponds and the receiving water the results of a seepage study are necessary.

Coeur’s database includes data collected upstream and downstream of both outfalls 001 and 002. This data is inconclusive as to whether or not there is seepage from the ponds because the downstream data includes influences from the effluent discharged from the outfalls.

The seepage study found in I.C of the permit requires a water balance to determine if and how much effluent is lost to seepage. Seepage is a possibility since the Lake Creek pond is not lined and the Osburn ponds are only partially lined. The EPA realizes that conducting a flow balance involves some uncertainties. EPA included the water balance option because it appears more cost effective than monitoring via ground water test wells. However, Coeur may choose to install and monitor ground water test wells as an alternative to a seepage study.

As a point of clarification, EPA used **upstream** metals data and downstream hardness data (if a mixing zone was used) during the reasonable potential and effluent limit calculations. The upstream data and permit limit calculations did not account for any seepage that may be occurring from the ponds.

If the seepage study indicates that a significant amount of water is lost, then further studies or permit conditions may be necessary. These activities can not be predicted and therefore have not been included in the fact sheet or permit. The seepage study conditions have been retained in the final permit and expanded to include a hydrologic analysis in response to comment #46, below (Part I.C.).

Comment #45 Other sources of groundwater contamination (commenter 36)

The sources of contaminants at the sites, such as tailings piles, or lagoons, are discrete sources which should be considered point sources for the purpose of NPDES. The ground water at the sites is hydrologically connected to nearby surface water bodies. EPA has on several occasions (see the Preamble to the Storm water Phase 1 Final Rule, 55FR 47990, Nov. 16, 1990) stated that discharges to groundwater may fall under the requirements of the CWA where the ground water is hydrologically connected to nearby surface waters. Court decisions (including *McClellan Ecological Seepage Situation v. Weinberger*, *Washington Wilderness Coalition v. Hecla Mining Co.*, and *Friends of the coast Fork v. Turner*) also support the position that discharges to ground water that effect (are hydrologically connected to) surface waters may require an NPDES permit.

Precipitation infiltrates through the exposed metal-contaminated areas at these sites and leachate from the ponds and piles then infiltrates into ground waters that are hydrologically connected to adjacent surface waters including the South Fork. These discharges should be permitted such that the total discharge from the site (including storm water discharge and discharges to ground water) does not exceed the facility's discharge limits established in the TMDL.

Response: As discussed in response to comments #44 and #46, the permit requires that seepage from the tailings ponds be studied for its occurrence and hydrologic connection to the South Fork. Information from these studies will be used to determine the need for permit conditions related to tailings pond seepage. At this time, there is not enough information to determine the need for limits or other restrictions on the seepage.

The commenter has provided EPA with no information (i.e., a name/location of a

specific source) to substantiate similar investigations of seepage and hydrologic connection other than from the tailings ponds.

Comment #46 – Include a hydrological analysis in the seepage study requirements (commenter 26)

A series of ground water wells would be needed to determine the extent of groundwater contamination, and a hydrological analysis to indicate whether seepage is entering the South Fork - and contaminating the river.

Response: The 2001 draft permit required that the permittee quantify seepage from the tailings ponds by performing a water balance analysis for each tailings pond. The 2001 draft permit did not require a hydrological analysis to indicate whether seepage is actually entering the South Fork or Lake Creek. EPA agrees that such an analysis is necessary in order to demonstrate that there is a hydrological connection between the seepage and the receiving waters. The final permit, therefore, includes a requirement that the permittee perform hydrological analysis to make this determination (see Part I.C.2. of the final permit). The permit does not specify how the analysis will be performed (i.e., by the use of groundwater wells and/or modeling or assumption that all seepage would report to surface waters due to proximity), to provide the permittee with the flexibility to conduct the analysis using the most cost-effective methods applicable to the site.

Because this additional work was added to the permit, EPA added more time to complete the work. Instead of being due 18 months from the effective date of the permit, the seepage study and hydrological analysis is due six months prior to the expiration date of the permit. Part I.C. of the final permit reflects changes as a result of this comment.

Comment #47 - Include requirements based on seepage study results. (commenters 26, 36)

Commenter 26: The permit discusses that a seepage analysis for the tailings ponds will be completed within 18 months. We would like more discussion of the mitigation that would be required if seepage is significant.

Commenter 36: There are no requirements for addressing seepage from these facilities should the seepage analyses confirm previous observations. As these facilities are fairly well-defined, there should be consideration of the pathway of surface water to groundwater through these facilities, and incorporation of those considerations into the permit requirements.

Response: At this time, EPA is not including mitigation of the seepage or other requirements for addressing the seepage in the permit. That is because, we are not sure of the extent of the seepage (thus the seepage study is required in the permit) and what mitigation would be required if seepage is significant. The mitigation may include attempting to reduce the seepage or it may involve requiring that the loading due to

seepage be added to the loading from the outfall in determining compliance with the permit limits. Either of these situations would require modifying the permit, at which time discussion of mitigation measures and/or incorporation of seepage into the permit requirements would occur. EPA will determine if seepage control, mitigation, or other requirements are necessary after receiving and analyzing the results of the seepage study and hydrological analysis required in the final permit.

N. Storm Water Issues

Comment #48 – Include stormwater in the permit. (commenter 36)

It is not certain whether the permit includes consideration of storm water run-on and run-off from these facilities. This should be clarified; if storm water is not specifically included, EPA should consider requiring an NPDES Permit for the storm water discharges from the facility. Clearly non-point sources of metal pollution in the basin must be significantly reduced to meet the TMDL allowances and in order to meet water quality criteria in the South Fork.

Response: Some of the storm water from the site flows to the tailings ponds and is discharged through outfalls 001 and 002. The storm water that is discharged from outfalls 001 and 002 is authorized by this individual NPDES permit. Storm water that is not discharged through the outfalls specified in the individual permit is authorized for discharge under the storm water Multi-sector General Permit (MSGP) for industrial activities. Both the individual permit and MSGP require that best management practices (BMPs) be developed and implemented to reduce the quantity and toxicity of storm water generated.

O. Comments on Specific Permit Language

Comment #49 – Permit “boilerplate”. (commenter 35)

Some of the draft permit conditions which EPA explains in the 2001 Fact Sheet as being “boilerplate” language, do not track the requirements of the applicable regulations. These are:

1. Permit language at III.A. **Representative Sampling (Routine and Non-Routine Discharges)** does not follow 40 CFR 122.41(j)(1) and 122.42 (a)(1) and (2).
2. Permit language at III.D. **Additional Monitoring by Permittee** does not follow 40 CFR 122.41(1)(4)(iii); (reporting “other sampling”).
3. Permit language at III.F does not follow 40CFR 122.41 (j)(2); (record retention for five years instead of three years).
4. Permit language at III.G.1.d. does not follow 40 CFR 122.41 (1)(6)(ii)(C); (expedited reporting).
5. Permit language at III.G.3. does not follow 40 CFR 122.41 (1)(6)(iii); (oral report is

confined to one location).

6. Permit language at III.H.1 and 2 does not follow 40 CFR 122.42(a)(1) and (2); (the word “will” is in the regulations).
7. Permit language at IV.C. does not follow 40 CFR 122.41(c); (“the conditions of” is omitted).
8. Permit language at IV. and V. does not follow the intent of the regulations to report to only EPA and not the State of Idaho.
9. Permit language at V.C does not follow 40 CFR 122.41(h); (“within the time specified v. “within a reasonable time”).
10. Permit language at V.H. does not follow 40 CFR 122.41(g); (expands on the words of the regulation).
11. Permit language at V.J. is not required by the regulations.
12. Permit language at VI., the definition of “24-hour composite”, has no definition in the regulations, and is inconsistent with the Permit Writer’s Manual.

The foregoing items should be corrected in the Final Permit.

Response: The Fact Sheet correctly stated that “most” of the cited sections contained regulatory language. Some changes to the regulatory language were made for the reasons discussed in the following responses to Coeur’s specific comments. In addition, some language that is not verbatim from the NPDES regulations was included in the permit. The NPDES regulations at 40 CFR 122.43 allow for the establishment of such additional permit conditions, as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of the CWA and regulations. EPA’s responses are numbered consistent with the comment numbering.

1. Part III.A. of the permit consists of three paragraphs. The first paragraph has been revised to be verbatim from the regulations at 40 CFR 122.41(j)(1) as suggested in the comment.

The second and third paragraphs were included in the permit to ensure that any spills, bypasses, treatment plant upsets, or other non-routine events will not result in violation of the effluent limits. The third paragraph describes how such samples will be collected analyzed, and reported. As described in Section VII.E. of the 2001 Fact Sheet, these provisions are included in the permit because routine monitoring could miss permit violation and/or water quality standards exceedences

that could result from bypasses, spills, or non-routine discharges. EPA believes that this provision is necessary to ensure compliance with the CWA and compliance with the limits in the permit and is therefore authorized by 40 CFR 122.43(a) and 122.44. This language has been retained in the final permit.

2. The permit language found in Part II.D. of the permit contains the statement “Upon request by the Director, the permittee must submit results of any other sampling, regardless of the test method used.” The ability to request additional information when such information is related to the conditions of the NPDES permit is allowed by Section 308 of the CWA. The statute allows EPA to require that monitoring be provided that may reasonably be required to develop or assist in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under the CWA. The Region includes this sentence in all permits it issues so that the permittees are aware that EPA may request the submittal of any sampling results. The language has been retained in the final permit.

3. Permit Part III.F, Retention of Records, requires that records be retained for five years. Although 40 CFR 122.41(j)(2) indicates that records be retained for three years, it also provides the Director the option of extending this period. EPA has extended this period to five years since NPDES permits are generally effective for five years and the information created during this period will be used when reissuing the permit. The language has been retained in the final permit.

4. Part III.G.1.d of the 2001 draft permit required 24 hour noncompliance reporting for any violation of a maximum daily discharge limitation for any of the pollutants listed in the permit. This language is from 40 CFR 122.44(g) *Twenty-four hour reporting* which states “Pollutants for which the permittee must report violations of maximum daily discharge limitations under 40 CFR 122.41(l)(6)(ii)(C) shall be listed in the permit. This list shall include any toxic pollutant or hazardous substance, or any pollutant specifically identified as the method to control a toxic pollutant or hazardous substance.” The metals in Tables 1 and 2 of the permit with maximum daily limits are considered toxic pollutants under 40 CFR 401.15. The language in the final permit has been revised to clarify that 24-hour reporting is required for “any violation of a maximum daily discharge limitation for any of the metals listed in Tables 1 and 2 (Part I.A.) of the permit.”

5. Part III.G.3 of the permit states that “The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the NPDES Compliance Hotline in Seattle, Washington, by telephone, (206) 553-1846.” Federal regulation 40 CFR 122.41(l)(6)(iii) states “The Director may waive the written report on a case-by-case basis for reports under paragraph (l)(6)(ii) of this section if the oral report has been received within 24 hours.” The permit language specifies the oral reporting location for the convenience of the

permittee. This language has not been changed in the final permit.

6. The comment refers to permit Part III.H.1. & 2. However, we believe that Part III.I.1. & 2. was meant since Part III.H. does not contain two sections and the basis for Part III.I. is the 40 CFR 122.42(a)(1) and (2) regulations referred to in the comment. In response, the 2001 draft permit language included the phrase “may reasonably be expected to” instead of the word “will”. The language in the final permit has been revised to include the word “will” and is now verbatim from the regulations.

7. The omission of “the conditions of” from the regulatory language that is the basis for the permit language at IV.C, does not change the meaning of the paragraph. However, the paragraph will be revised to include that phrase so that the final permit language is verbatim from 40 CFR 122.41(c).

8. It is not the intent of the regulations to limit reporting to only EPA. The EPA thinks that it is reasonable that the Idaho Department of Environmental Quality also receive copies of reports since they issue state certifications and conduct inspections to determine compliance with state regulations. In addition, IDEQ requested in their final certification that the permit require notification to IDEQ in conjunction with EPA in all areas where notification is required. Therefore, notification to IDEQ is retained in these and other parts of the permit.

9. We agree to revise the permit language at Part V.C to be consistent with the regulatory language. The phrase “within the time specified” was replaced with “within a reasonable time” in the final permit.

10. Part V.H of the permit contains language from 40 CFR 122.41(g) as stated in the comment. The expanded language referred to in the comment is based on 40 CFR 122.5(c) and therefore this language was not changed in the final permit.

11. The permit language at Part V.J. is not required in the federal regulations. However, it is an accurate statement of law. It is a standard permit condition included in permits issued by Region 10 to clarify that the NPDES permit does not relieve the permittee of liability under state law (such as state water quality standards). The language has been retained in the final permit.

12. The definition of 24-hour composite is from Appendix A of *NPDES Permit Application Requirements for POTWs and Other Treatment Works Treating Domestic Sewage*, August 4, 1999 Federal Register (64 FR 42499). The description of a composite sample in the U.S. EPA NPDES Permit Writers' Manual (December 1996, EPA-833-B-96-003) is a collection of individual samples obtained at regular interval, usually based upon time or flow volume. This description is not specific enough for permitting purposes. The requirement

that sampling be collected and stored in accordance with procedures prescribed in the most recent edition of *Standard Methods for the Examination of Water and Wastewater* was added to ensure that samples are adequately collected and stored. The definition has not changed in the final permit.

P. Comments of the Fact Sheet

Comment #50 – Potential diversion of tailings during an upset. (commenter 35)
Section III.A, page 7, of the Galena Mine and Mill Fact Sheet might include discussion of diversion of tails to the Lake Creek tailings impoundment in the event of an upset to the normal operating procedure, or when managers decide to shut the pumps down for some reason, for example during the weekend. If the pumps that transport tails to the Osburn impoundment are shut down or fail, the tails are diverted to the Lake Creek tailings impoundment. This mode of operation is currently employed and will be employed in the future.

Response: Although Fact Sheets generally are not modified, a revised draft permit was developed and sent out to public notice again to include different sets of limits for cadmium, lead, and zinc. The revised fact sheet included a description of the diversion of tailings to the Lake Creek Tailing Ponds.

Q. Miscellaneous Comments

Comment #51 - Bonding (commenter 26)
Bonding should be required to the amount needed to mitigate a reasonable occurrence of non-permitted incidents. Since closure of the mines is always a possibility, sufficient bonding must be made available to ensure mine wastewater and tailings pond water does not leave the site at non-permitted levels.

Response: EPA agrees that bonding for closure or non-permitted incidents is important. However, bonding is not regulated by the NPDES permit. Performance bonds are administered by the State for mines on state land. The State of Idaho has authority for requiring bonds for surface mines under the Surface Mine Reclamation Act. However, the State has never passed legislation to address bonding of underground mines.

R. Comments on the TMDL

Comment #52 - Authority for using TMDL and TMDL implementation. (commenters 21, 27)
Commenter 21: EPA should not enforce a TMDL that cannot adequately address non-point source loading while threatening through regulation of the permits to put these mining companies or other point sources like the municipal facilities either out of business or forced to pass the cost of compliance onto a tax base that may, in fact, already be overburdened.

Commenter 27: I do not believe there is justification or authority to impose TMDL limitations, including load allocations in NPDES permits, until and after the Implementation Plan has been developed, reviewed, commented on, and accepted by EPA. I believe that the State of Idaho has a great deal of discretion in how any TMDL Implementation Plan is structured. As such, the Implementation Plan should first deal with the non-point sources which contribute 95% of the load in the water of these stream segments. Only after and if we see a failure to meet designated use water quality following non-point source management actions, should the lesser point source contributors (5%) be compelled to accept more stringent TMDL driven NPDES permit limits.

Response: As discussed in Section II., above, the TMDL is not the basis for any of the effluent limits in the final permit. The TMDL was invalidated by Idaho District Court. Therefore, comments on the TMDL are not pertinent to issuing the revised permit.

Comment #53 - Details of the TMDL. (commenters 21, 27, 34)

Commenter 21: EPA must rectify a permitting system and TMDL that can allow the agency, after some 200 million dollars have been spent on the Bunker Hill Superfund site box to remain the largest source of zinc in the South Fork that also threatens downstream areas, including Lake Coeur d'Alene.

Commenter 27: I believe that EPA errors when they refuse to split stream segment SF 271 in two sections within the TMDL. It is appropriate that the segment affecting the Coeur and Galena be split at Elizabeth Park. The gaging station at Elizabeth Park is long standing and well established. Historic flow measurements at Elizabeth Park are approximately 70% of that at Pinehurst. Point source dischargers above Elizabeth Park should receive 70% of the load allocated to point source dischargers rather than the 40% that is proposed. Failure by EPA to make this change in this stream segment will unfairly give point source dischargers down stream of Elizabeth Park an unjustified larger load allocation.

46016 of the Federal Register/Vol. 64, No. 162/Monday, August 23, 1999/Proposed Rules states, "Current regulations require a waste load allocation for each existing or future point source." 46030 states under 5 a., "The existing regulations define loading capacity as the greatest amount of loading that a water body can receive without exceeding water quality standards and a TMDL as the sum of the individual waste load allocations for existing and future point sources and the load allocation for existing and future non-point sources and for natural background. It is clear that the intent of the regulations is to provide allocation of the load to future point sources. Since there is no provision for future point source allocations the entire TMDL logic is flawed.

Commenter 34: Section 319(1)(A) of the CWA requires states to identify waters "which without additional action to control non point sources of pollution, cannot reasonably be expected to attain or maintain applicable water quality standards..." This provision shifts the focus on WQ improvements to non point BMPs rather than further point source control. The WLAs are minuscule compared to the LAs for the non point sources. The South Fork will still be far short of attaining the desired water quality.

Response: The TMDL is not the basis for the cadmium, lead and zinc final limits (see response to comment #52, above).

Comment #54 - Defer implementation of the TMDL until legal issues resolved (commenter 35)
The State of Idaho adopted TMDLs upon which the proposed permit is based, in part. EPA is familiar with the fact that Coeur has contested the validity of Idaho's adoption in State District Court. Coeur's position, in summary, is that Idaho should have proceeded under the Idaho Administrative Procedure Act with formal rulemaking. Idaho's position, in summary, is that formal rulemaking is not required, because the TMDLs adopted by Idaho are merely "guidelines" which do not have the force and effect of law, and therefore rulemaking is not required. It is clear that EPA regards Idaho's adoption of TMDLs as binding upon EPA, and that EPA has no authority, or leeway, to make any adjustments or alterations with respect to them. In this situation Coeur requests that EPA defer issuing the Final Permit until the court decides the issue as to whether the TMDL adoption by Idaho was legally proper or not.

Aside from the foregoing point, EPA is, without explanation, ignoring the preamble to the July 13, 2000 regulations which adopted the TMDL rules. The preamble clearly explains that the goal for implementation of the adopted "TMDLs is 10 years. "For waterbodies impaired by non-point sources, where implementation involves significant habitat restoration or reforestation, water quality standards may not be met for decades." Fed. Reg. Vol. 65, July 13, 2000, page 43627. Yet, even though EPA recognized that in the case of the Silver Valley it is nonpoint sources which are by far the overwhelming culprit, the agency has decided to impose TMDLs on waste streams from the impoundment pounds. This is not necessary at this time, and does not make sense.

Implementation of TMDLs set for the receiving waters should be deferred until cleanup activities regarding nonpoint sources have been implemented. For this reason, the final permit should not reflect limitations based on TMDLs. There is no legal authority which requires such implementation at this time in this permit proceeding.

Response: See response to comments #52 and 53 above.

S. Comments related to Superfund

Comment #55 - Superfund Issues. (commenters 6, 23, 32)

Commenter 6: The EPA says they need to clean up this "Superfund" site so they can bring in industries. The industries are not coming in which means no jobs. New industries are scared to come here for fear the EPA will start fining them for the clean up.

Commenter 23: Has your "clean up" act taken into account that for decades the State used slag from the Bunker Hill on all state and local roads? The slag is in all our creeks from run off. Who OK'd the use of the mining waste by product roads in the first place?

Commenter 32: The money that is going to have to be spent upgrading the CTP to achieve these extremely aggressive limits would be better spent on cleaning up the real problem, the “hot spots”. Although we agree that the CTP is a source of contamination to the South Fork it is still, by your own admission, less than ten percent of the overall loading to the river. It seems unwise to spend this kind of taxpayers money to eliminate this small piece of the pie. Wouldn't it be more effective to clean up 90% of the problem and then move forward from there.

Response: EPA acknowledges the concerns raised in these comments. The community's ongoing concerns about Superfund cleanup have been forwarded to EPA's Superfund Office for incorporation into future actions.

Decisions regarding the Bunker Hill CTP and Superfund work “outside the CTP box” are made following public comment periods. The appropriate time to comment on the CTP and other Superfund work is during the comment periods applicable to that work since changes to Superfund decisions cannot be made in the context of an NPDES permit. Therefore, EPA will not respond to specific comments related to Superfund actions in this Response to Comments document. EPA directs the commenters to the administrative record for the Superfund decisions.

Comment #56 - Consistency with Central Treatment Plant (CTP). (commenters 14, 19)
The commenters would like to know if the system owned and operated by EPA (the CTP) will be required to meet the same specifics and standards as the mines and municipal sewer systems.

Response: Discharges from a Superfund cleanup have to comply with the substantive requirements of the NPDES regulations. Under CERCLA, permits are not required for cleanup actions conducted within a Superfund site. Because the discharge from the CTP occurs as part of a Superfund cleanup, an NPDES permit is not required. However, the limits for the CTP were developed following the same procedures used to develop limits for NPDES permits. The State water quality standards applicable to the CTP discharge and the mine discharges are the same. The standards are translated into effluent limits based on factors including river flow, hardness, background concentrations, and effluent flows. Some of the CTP limits may be higher than Coeur's permit limits since the hardness of the CTP discharge is higher and the effluent flow in comparison to the receiving water flow is lower. EPA directs the commenters to the administrative record for the CTP Record of Decision.

IV. COMMENTS RECEIVED ON THE 2003 REVISED DRAFT PERMIT

Following are the comments received on the 2003 revised draft permit and EPA's responses. Comments and responses are grouped according to the subject area of the comment. The

individual comments under each subject area are identified with the commenter(s) by a number. A list of the commenters that correspond to each number is included in Appendix A (Table A-2).

In some cases, the exact phrasing of detailed comments is presented. In other cases, substantive portions were excerpted or summarized from the comment. Where more than one commenter submitted similar comments, a summary of the comment was included following the list of numbers of all those that provided the comment. The Administrative Record files contain complete copies of each comment letter and the public hearing testimony and are available for review at EPA's Seattle office.

A. General Comments

Comment #57 – Respond to comments on the 2001 draft permit. (commenter 37)

Coeur submitted formal comments related to the 2001 draft permit and is requesting a response to said comments before commenting on the 2003 revised draft permit.

Response: EPA is responding to comments received on both the 2001 draft permit and the 2003 revised draft permit. The response to comments document is issued with the final NPDES permit. However, it should be noted that numerous comments were made during the 2001 public comment period that related to the limits based on the TMDL. These comments became irrelevant when the TMDL was declared null and void for state waters, and EPA revised the 2001 draft permit removing TMDL allocations.

Comment #58 – Make permits reasonable for operating mines. (commenters 38, 40, 49)

Commenter 38: We will always remain committed to reasonable regulations; however, I think the EPA has to be extremely careful that they're not imposing their likes ahead of what is absolutely necessary.

Commenter 40: For well over 100 years the Silver Valley has been home to a mining district unlike any other on earth. We are very much aware that environmental irresponsibility, although completely legal at the time, did significant damage to our valley. However, to further deny reasonable operating parameters to the only two metal mining operations left standing and in the process provide no measurable improvement to the environment does nothing to erase the errors of the past. It only serves to punish and burden the few of us that are left and very possibly to the extent that we, too, may vanish.

Commenter 49: We would urge the new permits be constructed in cooperation with the Lucky Friday, Coeur, and Galena Mines to remove unnecessary expenses and produce real and significant benefits to the overall water quality of the South Fork.

Response: The revised NPDES permits are not meant to punish the existing mining operations. Rather they are meant to ensure that limits on the discharges are sufficient to maintain water quality standards (as required by the CWA), which is

what is required for all facilities that are issued NPDES permits. The mining permits are long overdue for reissuance. The Coeur and Galena Mine and Mills permit expired January 10, 1994. Since that time, water quality standards have changed. A new permit needs to be issued to ensure that the discharge requirements are consistent with federal regulations and state water quality standards. Although some of the new permit conditions are more stringent than those found in the past permit, where allowed, EPA has included flexibility in the permit via the use of mixing zones, compliance schedules, and flow-tiered effluent limits. EPA believes that while the final permit is compliant with the CWA, NPDES regulations, and state water quality standards, it also allows the mines to continue to operate. See also response to comments #4 and 5, above.

Comment #59 – Oppose permitting the mines. (commenter 48)

I oppose the continued permitting of the North Idaho Mining district to dump, allow re-release and to poison the waters to any degree affecting those downstream. I believe the safety of waterways and the health of all exposed is in serious jeopardy. EPA has an obligation to protect this waterway and human health.

Response: The new permit contains limits on the discharges that are protective of water quality standards of the South Fork. The permit requires monitoring of the discharges, South Fork and Lake Creek to ensure compliance with the permit limits and protection of aquatic life. See also response to comment #2.

B. Economic Considerations

Comment #60 – Concern with the economic impact of permit requirements. (commenters 38, 39, 40, 41, 43, 46, 47, 49)

These commenters expressed concern with the potentially severe economic impact of the permit on the mining industry and the community. It is unreasonable to expect that large increases in compliance costs added to current strained operating expenses will not possibly result in as dire an outcome as closures. A cessation of mining operations would have a severe financial hardship on the community. Some commenters provided details on the extent to which the mines and community would be impacted.

Response: EPA recognizes that the new permit will cost Coeur more to comply with than their current permit and that this impacts the company and concerns the community. In response, EPA has incorporated flexibility into the permit, where allowed under the CWA and NPDES regulations. For example, effluent hardness, site-specific translators, and site-specific criteria were used to calculate effluent limits for cadmium, lead, and zinc. Mixing zones and receiving water flow-based limits were allowed for copper and mercury. Compliance schedules were included (consistent with IDEQ's 401 certification) to allow Coeur the time to come into compliance with the limits that they cannot currently meet. EPA reviewed the

monitoring requirements to ensure that the type and frequency of monitoring was necessary to monitor compliance with the permit, determine the need for changes to the limits in the next permit, and for consistency with the State's 401 certification. See also response to comments #4, 5, and 58.

Comment #61- EPA should pay for permit costs. (commenter 43)

If there is a question regarding whether the NPDES permits are valid in the Superfund site, then I think the EPA can use Superfund dollars to make sure that any costs that are going to have to be attributed to compliance with regulations for wastewater or the mining industry shouldn't put the economy at further risk, but EPA should pay for it all.

Response: Discharges from the Coeur and Galena Mines are due to the mining and milling activities conducted at the facility, not to a Superfund cleanup action, therefore, the discharges require an NPDES permit. The NPDES discharges are a result of mining activities at the location and therefore the cost of compliance with the permit limits must be borne by the permittee, not EPA.

C. Health of the South Fork and Permit Impacts

Comment #62 - The South Fork is healthy. (commenter 40)

The current mining discharges are protective of a healthy fishery and macroinvertebrate community, as demonstrated by numerous studies.

Response: See response to comment #6 on the 2001 draft permit.

Comment #63 - The permitted mine discharges have little effect on water quality (commenters 40, 41, 42, 43, 47, 49)

Commenters 40, 41, 42, 43, 49: These commenters state that the impact of the mine operations on the South Fork at the confluence of the South Fork with the North Fork is very small. Current mining operations do not compromise the goal of the CWA. Current mining operation discharges a fraction of 1 percent of the total TMDL levels contained in the South Fork at the confluence with the North Fork.

Commenter 42: EPA's own studies and admissions as summarized in EPA's Record of Decision (ROD) for the CdA Basin disclosed that the South Fork will not achieve federal cold water standards for hundreds of years under the best of circumstances. This fact does not change if the Lucky Friday and Galena Mines discharges are zero.

Commenter 47: This commenter provided a table comparing cadmium, lead, and zinc loading from Canyon Creek, Government Gulch, the CIA seeps, Pine Creek, the Lucky Friday mine discharges, and the Coeur/Galena mine discharges. The loads from the first four sources are tremendous in comparison to the mines.

Response: EPA agrees that the contribution of metals from the Lucky Friday, Coeur, and

Galena discharges is very small at the point where the South Fork meets the North Fork. This is because of the large amounts of metals that currently exist in the bed and banks of the river and the large amounts of metals entering the river from other sources. However, though their contribution is small, this does not alleviate the mines from meeting requirements under the CWA and NPDES regulations that limits on discharges must be stringent enough to maintain water quality standards. In addition, when looking at discrete segments of the South Fork, individual sources of metals become more significant. See also response to comment #7.

Comment #64 - Permit should reflect benefits to the river. (commenters 41, 49)

Commenter 41: The State of Idaho and the EPA should insist that the burden of additional measures be directly reflected in benefits to the river, and if those benefits are barely measurable on the South Fork system then the increase and control measures should reflect that reality.

Commenter 49: The present quality of water in the South Fork is predominately determined by the effectiveness of the EPA's ongoing treatments in the box. Even if the mine discharges exceeded the most stringent water quality requirements, the overall quality of the river would be only slightly improved. We do support even small gains in water quality, if the cost of the improvement is proportionate to the overall benefits.

Response: The effluent limits were developed based upon the Idaho water quality standards that are protective of aquatic life in the South Fork, including the SSC. Therefore, the limits will result in benefits to the river. The permit includes bioassessment monitoring downstream of the discharges that will be used to help determine any impacts of the permitted discharges on the South Fork.

D. Water Quality Criteria Comments

Comment #65 - Difficult to comment on two sets of limits. (commenters 38, 40)

The revised draft permit has two sets of limits; one based on the State water quality criteria and one based on the SSC. The commenters expressed concern that it is very time consuming and difficult to analyze and prepare comments addressing the various limited scenarios that could exist in the final product. It is especially difficult to comment since the options are different by numbers of magnitude. It is not desirable to offer hypothetical comments based upon unknown effluent limits, and it should likewise be a desire for the EPA to respond to hypothetical comment. The commenters requested that the comment period be extend until 60 days after official EPA notification of their decision on the SSC

Response: The original comment period for the 2003 revised draft permit was 50 days. We recognized that it would take more time to comment on the two sets of limits in the 2003 revised draft permit and extended the comment period by 45 days to end on April 11, 2003. EPA approved the SSC on February 28, 2003 and notified the mining companies of the approval shortly thereafter. Therefore, approximately 40 days of the comment period remained following our notification to the mining

companies that the SSC was approved. EPA believes that this amount of time was sufficient to provide comments.

Comment #66 – Approve the site-specific criteria (SSC). (commenters 38, 47)
The commenters requested that EPA approve the SSC.

Response: As discussed in Section II.A., on February 28, 2003 EPA approved the SSC. The SSC are the basis for the cadmium, lead, and zinc limits in the final permit.

Comment #67 – The SSC are not appropriate for the South Fork. (commenters 45, 51)
The SSC may be the basis for the water quality standards in the permit. The commenters are concerned about this and that the SSC is not appropriate for the South Fork. The validity and protectiveness of the recently promulgated SSC requires further evaluation.

Response: EPA approved the SSC for the South Fork in February 2003. EPA believes that the SSC and effluent limits based on the SSC are protective of the uses of the South Fork, including aquatic life. See also response to comments #11 and 12 on the 2001 draft permit.

Comment #68 – Interim water quality standards based on technology. (commenters 42, 46)
The cost of water treatment approaches infinity as the discharge limits approach zero. The maximum improvements attainable in river water quality while using finite funds requires application of the most cost-effective technology. The CWA allows for implementation of interim water quality standards. Use of technology-based interim water quality standards would relieve the burden upon the mines of the permit requirements that provide no benefits to society.

Response: A temporary or interim water quality standard can be developed if it is allowed under the state water quality standards. The State of Idaho does not have a provision in its water quality standards to allow for temporary water quality standards. Therefore, temporary water quality standards cannot be used by EPA for the South Fork.

In accordance with the State's 401 certification, EPA did incorporate interim effluent limits for copper and mercury in Outfall 001 and cadmium, copper, and zinc in Outfall 002 that are in effect during the four year, nine month compliance schedule (note that these are interim "limits" not "standards"). These interim limits are based on the current performance of the facility (current discharge levels). See section II.B. of this Response to Comments.

Comment #69 - Specific comments related to development of the SSC. (commenters 45, 51)
Commenter 45: The Idaho Conservation League (ICL) has made its concerns regarding the SSC known to the EPA via other forums and we understand that the NPDES process is not the venue that will decide to either accept or reject the SSC. However, because there is a potential that the SSC will be the basis for the water quality standards, we feel that it is important that we reiterate our concerns in these comments. ICL summarized their concerns in their comments on the

permit and attached a letter that was previously sent to EPA with specific comments on the SSC.

Commenter 51: The U.S. Fish and Wildlife Service (FWS) submitted numerous comments specific to the development of the SSC and EPA approval of the SSC.

Response: Commenter #45 is correct that the NPDES process is not the process where decisions are made regarding the SSC. See response to comments #11 and 12.

E. Variance Comments

Comment #70 – Implement variance guidance.
(commenter 41)

The commenter quoted extensively from the “Interim Economic Guidance for Water Quality Standards” published by EPA in 1995. The commenter stated that the State of Idaho should exercise its rights and responsibilities under this EPA policy.

Response: The Interim Economic Guidance is used by states and EPA in considering economics at various points in the process of setting or revising water quality standards. EPA will follow that guidance if a formal request for a variance is received from the Permittee. However, no request for a variance has been submitted.

F. Specific Comments on the Permit Limits and Data used to Calculate Limits

Comment #71 - Use of effluent hardness is not protective. (commenters 45, 51)

In instances where no mixing zone is proposed (lead, zinc, cadmium), EPA is utilizing the hardness values of the effluent rather than the hardness of the receiving water to calculate the effluent limits. This is inappropriate and needs to be changed. In all instances covered under the permit, the hardness of the receiving water is significantly less than the hardness of the effluent. Metals are more toxic in water with lower hardness and less toxic in water with higher hardness. EPA’s inappropriate use of the high hardness effluent skews the results from the equations used to determine limits in a manner that allows for greater metals discharge. This level of metals is toxic to organisms present in the lower hardness receiving water.

Discharge limits should be based on the hardness of the receiving waters. Failure to do so creates a zone of toxicity starting at the outflow and continuing downstream until sufficient dilution has occurred. In essence this is an illegal mixing zone.

Response: For the 2003 revised draft permit, EPA calculated effluent limits for cadmium, lead, and zinc based on meeting the water quality criteria at the end-of-pipe (i.e., no mixing zone was allowed). The hardness values used to calculate the criteria is the hardness of the effluent. The hardness levels of the effluent are higher than those of the river under most river flow conditions. The 5th percentile effluent hardness is 97 mg/l CaCO₃ for outfall 001 and 130 mg/l CaCO₃ for outfall 002.

The 5th percentile hardness of the South Fork varies from 27 ug/l at low flow to 72 ug/l at high flow. See Appendix A, Section II.A.1 of the Fact Sheet for the 2003 revised draft permit for the hardness values. The 5th percentile hardness is a conservative value in that 95% of the time the hardness will actually be greater than this value.

In simple terms, applying the effluent hardness-based criteria is analogous to treating the effluent discharge as if it were a tributary that has higher hardness levels than the mainstem river. Metals toxicity decreases with increased hardness. The tributary would be allowed to achieve less stringent (i.e., higher) metals criteria by virtue of its elevated hardness levels. In some situations it can be shown that as the tributary (e.g., effluent discharge) meets and mixes with the mainstem waters (e.g., South Fork) there would not be any local criteria exceedences.

While using receiving water hardness to calculate criteria end-of-pipe effluent limits, as suggested in the comment, is certainly protective, in some situations the use of effluent hardness can also be protective. That is because as the effluent mixes with the receiving water two things happen: the hardness of the receiving water in the area of mixing increases (and therefore the hardness-based water quality criteria increases) and, the concentration of the mixture decreases from the effluent concentration to the point where it is fully mixed at the receiving water concentration. In some situations, the decrease in the mixed effluent and receiving water concentration occurs at a faster rate than the decrease in hardness (and therefore the decrease in the criteria) such that the concentration in the receiving water never exceeds the criteria. The figures in Appendix D demonstrates that this is the case for cadmium, lead, and zinc in Coeur/Galena discharges.

The above discussion and figures in Appendix D demonstrate that using the effluent hardness to calculate criteria end-of-pipe limits for cadmium, lead, and zinc do not result in exceedences of the water quality criteria in the receiving water. This approach, therefore, is stringent enough to meet water quality standards as required by the CWA and NPDES regulations. Since there is no exceedence of the water quality criteria in the receiving waters, the use of effluent hardness is not an illegal mixing zone. In addition, IDEQ, in their final 401 certification, certified that the permit conditions provide reasonable assurance that the discharges would comply with state water quality standards. Therefore, the use of effluent hardness to calculate end-of-pipe effluent limits for cadmium, lead, and zinc was retained in the final permit.

Comment #72 - Mixing Zones should not be used. (commenter 45)

The EPA should not grant the use of mixing zones to dilute waste. IDEQ may authorize the use of a mixing zone. The EPA does not need to approve of the use of a mixing zone should the IDEQ recommend or authorize them. We believe that the use of mixing zones causes harm by

facilitating the release of additional pollutants and creating a potential barrier to fish movement.

Response: As discussed in Section II.B., IDEQ has the authority to authorize mixing zones and in their final 401 certification, IDEQ authorized mixing zones for the copper and mercury limits and the whole effluent toxicity triggers. The state provided a mixing zone analysis and certified that the conditions in the 401 certification provide reasonable assurance that the discharges will comply with the CWA and Idaho water quality standards. Therefore, the final permit limits for copper and mercury and the WET triggers incorporate the state-authorized mixing zones.

Comment #73 - Entire South Fork being used to dilute mine effluents; a model of metal concentrations needed. (comment 51)

The influence of the SSC on the South Fork metal concentrations has not been adequately evaluated or presented. The proposed discharge permits identify that no mixing zone is allowed for cadmium, lead, or zinc in effluent discharge. However, the EPA informed the USFWS (January 29, 2003) that the original SSC from Daisy Gulch to Canyon Creek did not provide for adequate dilution of effluent, and that the SSC was extended to the confluence with the North Fork to provide this adequate dilution. This suggests that the entire South Fork Basin will be used as a dilution source for the mine effluents. These conflicting statements need to be addressed and clarified. At a minimum, EPA should provide a model of metal concentrations throughout the South Fork that clearly shows the aqueous and sediment metal concentrations resulting from each effluent discharge.

Response: As discussed in Section II.A., the effluent limits for cadmium, lead, and zinc are based on the SSC. The draft and final permits do not incorporate mixing zones for cadmium, lead, and zinc. Since the SSC will be met at the end-of-the-pipe and the SSC are the effective criteria under the CWA for the South Fork, EPA does not agree that the entire South Fork is being used as a dilution source for the Coeur and Galena effluent. No dilution is being allowed for cadmium, lead, and zinc.

The RI/FS for the Coeur d'Alene Basin (EPA 2001) provided extensive modeling of metals concentrations throughout the South Fork and described sources of the metals (including the effluent from the Coeur and Galena Mines). It is unclear what additional modeling is requested in the comment. EPA does not believe that any additional modeling is needed, particularly since no mixing zone is being allowed for the water quality-limited parameters (cadmium, lead, and zinc). That is, it does not matter how these pollutants are diluted or partition to sediment since they meet the applicable criteria at the point of discharge and the applicable criteria are protective of uses of the South Fork.

Comment #74 - Mercury Limits (commenter 50)

The revised Fact Sheet explains that a reasonable potential analysis was performed to verify the need for certain permit limits. However, it is not possible to project a concentration exceedance for mercury based on the data submitted by Coeur. The data set provided, including the DMRs,

clearly demonstrate no detection of mercury above the detection limit of 0.1 ppb. It appears that the technology based criteria were used in the calculations, rather than actual data provided to EPA. Such method is not proper. The permit limits should be deleted.

Response: Footnote 1 in Tables A-3 and A-4 of the 2003 revised Fact Sheet state that “For parameters with technology-based effluent limitation guidelines, the maximum effluent concentration used to determine reasonable potential is the technology-based maximum daily limitation. The technology-based limit is used since water quality-based limits are only required if discharge at the technology-based limits have reasonable potential to exceed water quality standards in the receiving water.” The maximum daily limitation for mercury is 2.0 $\mu\text{g}/\text{l}$ (or 2.0 ppb) as provided in Section I of Appendix A of the revised Fact Sheet.

Technology-based permit limits are required for all permittees irregardless of effluent data. If the technology-based permit limits are not protective of the states' water quality criteria then water quality-based limits are necessary. Although discharge monitoring reporting indicates that mercury from outfalls 001 and 002 are below the method detection limit of or 0.1 ug/l , the method detection limit is greater than the chronic aquatic life water quality criterion for mercury (0.012 ug/L), therefore, there is no proof that mercury in the discharges do not exceed the chronic water quality criterion. Therefore, effluent limits for mercury have been retained in the final permit. As discussed in response to comment #s 35 and 38, the frequency of effluent mercury monitoring was reduced from weekly to twice per month.

Comment #75 - Flow tiers. (commenter 50)

Coeur is satisfied with five flow tiers. Coeur desires the flexibility associated with the five tiers, and does not believe that there will be a problem with monitoring for compliance. However, the flow tiers only have relevance if a correctly calculated mixing zone is allowed.

Response: EPA agrees and has retained the five flow tiers in the final permit. See also comment #29.

Comment #76- Copper limits (commenter 50)

Coeur does not understand the permit limits for copper. The limits for Outfall 001 do not consider a mixing zone. Coeur has no data to demonstrate that Lake Creek is impaired for copper. To the contrary, data shows that it is not; there are no samples which exceed the copper water quality standard. Therefore a mixing zone should be allowed for copper for Outfall 001.

A mixing zone should be allowed for outfall 002 and the copper permit limit should reflect this. According to Coeur's calculations for outfall 002 at a maximum effluent flow of 622 gpm at the second flow tier at 25% mixing results in a limit of 39 ug/L (not 32 ug/L). When the effluent flow is reduced to 300 gpm, the permit limit should be 74 ug/L (not 32 ug/L). The permit limits should be written in a way that allows Coeur the flexibility of monitoring the actual conditions,

with a limit in accordance to those conditions.

Response: In the 2001 draft permit, EPA used 5.0 ug/l as the background concentration for copper in Lake Creek. The value of 5.0 ug/l was calculated based on the 95th percentile of ambient monitoring data from Lake Creek. Because 5.0 ug/l is greater than the copper aquatic life water quality criteria for Lake Creek for some flow tiers, a mixing zone was not included in the development of copper water quality-based effluent limits for outfall 001. EPA reevaluated the Lake Creek data and determined that an error had been made in the background concentration calculation. An outlier had not been removed from the data set and where data was nondetect, the detection limit was assumed as the background concentration (and some of the detection limits were higher than the criteria). EPA recalculated background using ½ the detection limit for non-detected data and determined that 2.5 ug/l is the appropriate value to use as the Lake Creek background concentration. The outfall 001 copper effluent limits in the 2003 revised draft permit were calculated based on this value.

In regards to the mixing zone, as discussed in Section II.B., the state has authority to allow mixing zones through its 401 certification. In the final 401 certification, IDEQ authorized mixing zones for copper for outfalls 001 and 002. The mixing zones ranged from 25% to 75% depending upon the flow tier. The effluent limits for copper were recalculated based upon these mixing zones. The calculations are shown in Appendix C. The limits are included in Tables 1 and 2 of the final permit.

Comment #77 - Mass limits should not be required. (commenter 50)

EPA has no authority to impose mass limits in the permit. EPA regulation 40 CFR 122.45(f), provides for mass limits except “when applicable standards and limitations are expressed in terms of other units of measurement.” The phrase “applicable standards and limitations” is defined in 40 CFR 122.2 as including effluent limitations, water quality standards and other things. The term “water quality standard” is defined in 40 CFR 130(2)(d) as “provisions of state or federal law which consist of designated use or uses for the waters of the United States and water quality criteria for such waters based on such uses.” The bases for the permit are standards and criteria expressed in terms other than mass, therefore mass limits should not be inserted in Coeur’s permit.

Coeur’s database shows that 1152 gpm is the highest flow into Lake Creek from outfall 001, but a rain or snow event in January or in the spring has the potential to exceed this flow. Coeur has no flexibility to deal with unusual storm events.

Response: EPA believes that permit limits must be expressed in terms of mass in order to preclude the use of dilution as a substitute for treatment (see 44 FR 32865). While 40 CFR 122.45(f) allows some exceptions to the requirement for mass limitations, the exception cited in the comment (122.45(f)(ii)) does not apply. According to 40

CFR 122.45(f)(ii) mass limitations are not required “When applicable standards and limitations are expressed in terms of other units of measurement”. The mass limitations requirements and exceptions at 122.45(f) were originally promulgated as 122.16(c) (mass limitations requirement) and 122.16(d) (mass limitations exceptions). The Federal Register preamble to the rulemaking for the exceptions to the mass limitation requirement states “Paragraph (d) of 122.16 allows the use of concentration limits under circumstances in which administrative or technical problems make the use of mass limits impracticable or inconsistent with other requirements such as promulgated effluent guidelines or pretreatment standards.” (Emphasis added). (44 FR 32865). Therefore, the exception at 122.45(f)(ii) cited in the comment applies to technology-based standards and limitations, not water quality standards. If the exception was intended for application to water quality standards, then the preamble and regulation itself would have been specific that “standard” meant “water quality standard”. Since the exceptions to the mass limitation requirement do not apply, the final permit retains mass-based limits for metals.

G. Monitoring

Comment #78 - Include ambient water monitoring for cadmium, lead, and zinc. (commenter 45)
The draft permit directs that water quality monitoring samples must be analyzed for copper, mercury, silver, TSS, pH, temperature, and hardness. EPA needs to direct the permittees to analyze for cadmium, lead, and zinc too.

Response: In the past, the U.S. Geological Survey (USGS) and EPA’s Superfund program monitored the South Fork in the vicinity of Coeur’s discharges for cadmium, lead, and zinc. The draft permits did not include receiving water monitoring for cadmium, lead, and zinc since it was assumed that this monitoring would continue. However, the USGS indicated that it is no longer monitoring this stretch of the South Fork or Lake Creek. EPA is also no longer monitoring these areas. Since information on the upstream concentrations of cadmium, lead, and zinc will be needed to potentially revise effluent limits the next time that the permit is reissued, cadmium, lead, and zinc has been added to the list receiving water monitoring parameters in Table 4 of the final permit. Table 4 also specifies method detection limits (MDLs). MDLs for cadmium, lead, and zinc are 0.1 ug/l, 5 ug/l, and 10 ug/l, respectively. These MDLs are low enough to allow detection of upstream concentrations and are less than the chronic aquatic life criteria.

Comment #79 - Mercury Monitoring. (commenter 50)

The regulations, 40 CFR 122.44(a)(2) provide that a discharger who is subject to technology-based effluent limitation guidelines may forgo sampling of a pollutant if it is demonstrated that the pollutant is not present in the discharge. Coeur is subject to technology-based limits and has demonstrated that mercury is not present in the discharge. This evidence has been submitted to EPA in DMRs and subsequent submissions and demonstrates that there is no detectable mercury

in the discharge. At the least, the monitoring frequency should only be semiannual, which would be sufficient to demonstrate to EPA that there is not mercury in the effluent.

40 CFR 122.44(a)(2) states that applicants can apply for waivers from sampling at the time of permit application submission. However, this regulation was not in effect at the time Coeur's application was submitted, therefore the application for the waiver is being made now. Application is hereby made for a waiver from sampling mercury.

Response: As discussed in response to comment #74 above, the method detection limits (MDLs) reported by Coeur in past mercury monitoring are greater than the chronic aquatic life water quality criterion for mercury, therefore, there is no proof that mercury in the discharges do not exceed Idaho's chronic water quality criterion.

Effluent monitoring must therefore be conducted with a detection level low enough to show compliance with Idaho's water quality standards and the final effluent limits. The NPDES regulations at 40 CFR 122.44(i)(iv) require that monitoring be conducted according to test procedures approved under 40 CFR 136. The MDL for Method 1631 is low enough to show compliance with the mercury effluent limits. Method 1631 was promulgated by EPA as a 40 CFR 136 method on June 8, 1999 (64FR30417). The promulgation responded to comments regarding the availability and cost of Method 1631. The NPDES regulations require that 40 CFR 136 methods be used for analysis, unless an alternate test procedure has been approved. Sufficient evidence that mercury is not present in Coeur's effluent has not been made. As discussed in response to comments 35 and 38, the frequency of effluent mercury monitoring has been reduced to bi-monthly.

The comment cites 40 CFR 122.44(a)(2) which allows for monitoring waivers if "...the discharger has demonstrated through sampling and other technical factors that the pollutant is not present in the discharger or is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger." As discussed above and in previous response's to Coeur's mercury comments, Coeur has not demonstrated that the pollutant (mercury) is not present or due only to intake water, since Coeur has not provided mercury analyses at a detection limit low enough to determine if the mercury is present. Nor has Coeur provided mercury data on its intake water.

Comment #80 - Metal limits should not be expressed in Total Recoverable form (commenter 50) The permit limits are expressed in terms of total recoverable metal yet the state water quality criteria are expressed in terms of dissolved metals. Regulation 40 CFR 122.45(c) provides for an exception when an effluent standard or limitation is expressed in dissolved form. Therefore the permit limits should be expressed in terms of dissolved form, without the use of translators.

Response: The commenter is correct that the Idaho water quality criteria cited in the comment are expressed in terms of dissolved metal. However, the NPDES regulations cited

in the comment (40 CFR 122.45(c)) require that all permit effluent limitations for metals be expressed in terms of total recoverable metals. There are three exceptions to this requirement, including the exception referenced in the comment. However, the exception referenced in the comment (40 CFR 122.45(c)(1)) is not applicable since it applies only where an “effluent standard or limitation has been promulgated under the CWA and specifies the limitation for the metal in the dissolved. . . form”. The Idaho water quality criteria for metals although expressed as dissolved, are not an “effluent standard or limitation” developed under 301(b)(1)(B). In addition, the method for monitoring in NPDES permits is also established by regulation (40 CFR 136), which includes the total recoverable method. The expression of metals limits as total recoverable is retained in the final permit. This requirement protects aquatic organisms from the dissolution of metals particulates upon discharge to surface water that may otherwise occur with dissolved metal limits.

Comment #81 – Legal authority for ambient monitoring (commenter 50)
Coeur can find no legal authority which suggests that EPA has the right to require ambient monitoring.

Response: Section 308 of the Clean Water Act provides EPA with the authority to require instream monitoring. Specifically, Section 308(a)(A)(v) of the CWA allows EPA to require the owner or operator of any point source to “provide such other information as he may reasonably require”. Other information that is reasonably required by EPA for Coeur’s discharges, is the ambient monitoring laid out in the permit. The ambient monitoring is reasonably required for the following reasons:

South Fork and Lake Creek flow monitoring: The effluent limits for copper and mercury depend upon receiving water flow. Therefore, ambient flow monitoring is required to determine which flow tier and corresponding effluent limit applies. Flow information will also be used to refine upstream flows in calculating effluent limits in the next permit.

South Fork and Lake Creek water quality monitoring: The development of water quality-based effluent limits takes into consideration receiving water characteristics such as upstream concentrations and downstream hardness. Therefore, ambient water quality monitoring was included in the permit for use in determining the need for and calculating water quality-based effluent limits in future permits.

Bioassessment monitoring: This data is needed to determine whether or not the discharges could be impacting aquatic life in the South Fork and Lake Creek and to ensure compliance with the Idaho water quality standards. This monitoring was required by the State’s CWA 401 certification.

Because the ambient monitoring laid out in the permit relates directly to the permitted discharges and is meant to collect data to be used in evaluating compliance with the permit limits and to collect data to be used in developing limits in the permit during the next reissuance, it is appropriate that this information be a required part of the permit.

J. Whole Effluent Toxicity (WET) Testing Conditions

Comment #82 - Species subject to WET testing (commenters 45, 51)

The commenters were concerned that WET testing was not being conducted using native fish. The draft permit requires the permittee to conduct tests with the water flea (a planktonic crustacean) and the fathead minnow, both of which are not native to the South Fork. The SSC dismissed the applicability of planktonic crustaceans and non-native fish species. WET testing should be conducted with salmonids, since native fish are what the SSC was designed to protect, and cutthroat trout were designated as the most sensitive species.

Response: The permit does not require WET testing with native fish, such as trout, since there are no EPA-approved methods (40 CFR 136) for chronic WET testing of trout and the NPDES regulations require that 40 CFR 136 methods be used for permit compliance. Permittees cannot use WET testing of non-EPA approved species for permit compliance. Permittees may request the use of alternate species following procedures in 40 CFR 136.4.

Comment #83 - Definition of most sensitive species (commenter 45)

The statement “after this screening period, monitoring shall be conducted using the most sensitive species” needs to be clarified so that it is clear whether EPA means the more sensitive of the water fleas vs. fathead minnow or (and more appropriately) the most sensitive species found in the river which I think would appropriately be the sculpin.

Response: The statement regarding the most sensitive species, means the most sensitive species of those used in the WET testing; i.e., the most sensitive of the fathead minnow or the water flea. EPA believes that the permit is clear in this respect since the permit requires WET testing of only those two species. The basis for the species selected for WET testing is included in the 2001 Fact Sheet. See also response to comment #82.

K. Miscellaneous Comments

Comment #84- State should be more involved in the permitting process (commenters 40, 41, 43)

We request that the State of Idaho insert themselves into the process and come to the aid of their

constituents here in Shoshone County. Our plea to the State is to help us because it's the right thing to do. The State of Idaho and those elected to represent us have the ability and the responsibility to bring considerable change and reasonableness to the NPDES permitting process, and they can exercise this ability without compromising our environment. It's time they did so.

Response: The State of Idaho has had ample opportunity to comment on the permits. The state IDEQ submitted comments on the 2001 draft permit and the 2003 revised draft permit. As discussed in Section II.B., the State provided EPA with a final 401 certification of the permit; most of the conditions of which were incorporated into the permit.

Comment #85 - Model sediment loading (commenter 51)

Lead loading into sediment has not been adequately evaluated. Lead loading and contaminated sediment transport is a primary concern identified in the CdA Basin ROD. The discharge permit and supporting documentation (Fact Sheet) identifies that the mines would be allowed to discharge pounds of lead per day. EPA has told the Services that most of the lead discharged by the mines would partition to the sediment, and that EPA has assumed that the sediment (i.e., lead in sediment) would not be transported downstream. The discharge permit proposals should include a model of sediment loading and transport throughout the CdA Basin.

Response: The effluent limits for lead in the permit are based upon meeting the applicable water quality criteria for lead at the end of the pipe. The water quality criteria for lead are expressed as dissolved. The lead criteria were converted to total using translators developed based upon the ratio of dissolved to total lead downstream of the discharge. Since the lead effluent limits are based upon meeting criteria at the end of the pipe and the criteria are protective of aquatic life in the South Fork, EPA sees no reason to require the permittee to model sediment loading due to Coeur's discharges.

As discussed in response to comment #73, extensive modeling of sediment loading and transport through out the CdA Basin has already been conducted in the RI/FS. Modeling sediment loading and transport throughout the CdA Basin is beyond the scope of the NPDES permit.

In addition, EPA does not recall telling the Service that sediment would not be transported downstream.

Comment #86 - ESA issues. (commenter 51)

The proposed discharge limits from the Lucky Friday, Coeur, and Galena Mines, under the SSC limits, would allow much higher lead and zinc to be discharged compared to what would be allowable under statewide WQS. The allowable discharge under SSC will likely result in adverse effects to, and impair the ecological recovery of, the South Fork with respect to native species including sculpin, cutthroat trout, and bull trout. As a federal agency responsible for approving/regulating water quality standards, EPA has a responsibility under section 7(a)(2) of

the Endangered Species Act (ESA) to ensure that such standards do not jeopardize listed species or result in the destruction or adverse modification of critical habitat. In addition, under section 7(a)(1) of the ESA, EPA also has the responsibility to ensure that such standards provide for the conservation of listed species, such as bull trout.

Response: Per the ESA, EPA has consulted with the U.S. Fish and Wildlife Service (FWS) regarding the approval of the SSC for the South Fork. EPA prepared a Biological Assessment (BA) for the SSC approval which was sent to the FWS. In the BA, EPA determined that approval of the SSC would not likely result in an adverse effect to bull trout. EPA did not evaluate the potential for impacts to sculpin or cutthroat trout since these are not listed threatened or endangered species. However, we approved the SSC because we felt that it was protective of the species in the South Fork, including sculpin and trout.

EPA made a separate determination under the ESA that issuance of the Coeur and Galena Mining permit will have no effect on the bull trout. This determination was documented in the 2001 Fact Sheet and the 2003 revised Fact Sheet. EPA reassessed this determination for the final permit and we continue to believe that discharges authorized under the permit will have no effect on bull trout based on the following factors:

- Bull trout do not exist in the South Fork.
- The permitted discharges are well above (approximately 18 miles) the confluence with the Main Stem where bull trout may occur.
- The contribution of Coeur's discharges are insignificant (less than 1% of the metals load) compared to other sources at the point of confluence with the Main Stem such that their contribution to any adverse effect to bull trout that may be occurring at the confluence is negligible and would be immeasurable.

L. Comments on the TMDL

Comment #87 - Status of the TMDL is unknown (commenter 43)

There is an unknown factor here for the mining industry having to meet the requirements in both the NPDES and the TMDL, and I think that the State of Idaho should help resolve that.

Response: The mining industry does not have to meet the requirements in the metals TMDL. This was made clear in the Fact Sheet for the 2003 revised draft permit. The effluent limits for cadmium, lead and zinc in the final permit are based upon the SSC not the TMDL. The Suspended Solids TMDL was approved by EPA on August 21, 2003. These approved mass-based waste load allocations for total suspended solids have been included in the final permit.

M. Superfund Issues

Comment #88 - Equity between Superfund Requirements and NPDES requirements
(commenters 39, 42, 43, 46)

The commenters expressed concern that EPA's actions and requirements under Superfund are different than those under NPDES permitting (including different cleanup goals) and that this is unfair. The commenters brought up the following examples/issues:

Commenter 39: If you use the EPA's requirements for Lucky Friday and back those into the water in the South Fork and North Fork where it mixes you'll find that around a tenth of 1% for lead and around 23/100ths of 1 percent is what they are allowed to put out. And then you look at what the EPA allows, to come out of the seeps at the Bunker Hill site. And we're talking two different EPAs.

Commenter 42: I believe that conflicts between the Superfund cleanup process and the water quality enforcement process is the major impediment to real improvement of water quality in the South Fork. The EPA is planning to do an evaluation of water treatment alternatives. I recommend the EPA Water Quality Division contact the people that are doing this water quality alternative and discuss what can be done if you change standards and look at more reasonable ways to reduce the metal in the river.

Commenter 43: Superfund does not require the need for permitted discharges. If this whole region is a Superfund site, then why should the mining industry have to put up with some questionable NPDES permit at the same time that the TMDL is unresolved? It is questionable whether the NPDES permits are valid in a Superfund site. A letter from EPA's Superfund office indicates that EPA hopes to complete the CTP upgrade over the next few years. Meanwhile people hope that NPDES permits won't put them out of business.

Commenter 46: Your imposing these strict limits on the mines while ignoring the transgression of the Superfund Section of EPA is an abdication of your duty to protect water quality and a gross injustice to the people of the Silver Valley. The commenter attached documents related to the CIA seeps. The commenter expressed concern that EPA is managing the CIA seeps differently from what is required of the NPDES permitted discharges.

I believe because of the Federal Facilities Section of the CWA (Section 1323), the Superfund managers of the CTP should be submitting NPDES reports to the Water Quality Division. Have they been doing that? Has the CTP discharge been meeting the discharge limits? If not, will the Water Quality Division fine them \$25,000 per day for violations? If the CTP were the responsibility of Hecla or Coeur Silver Valley, what would be the action of EPA Region 10 Water Quality Division?

Superfund is violating the substantive requirements of the CWA, probably because of lack of funding. The money spent last summer for additional monitoring wells could have constructed the interception wells and the pipeline to capture the seep for treatment. High level EPA Superfund policy restricts funding for water treatment to the point they are skimping on lime and having additional water to treat just makes the problem worse. EPA Superfund needs to relax the prohibition on water treatment funding. Adoption of an Interim water quality standard allowing

for discharge from a simple lime precipitation water treatment plan during the time the groundwater must be pumped and treated, would allow EPA Superfund to legally do this.

Response: EPA agrees that it is important for there to be equity between the Superfund cleanup actions and the NPDES actions. Discharges from Superfund cleanup actions are required to meet the substantive requirements of the CWA and NPDES regulations. The NPDES program reviews the Superfund decisions to ensure that this occurs. For example, the NPDES program assisted the Superfund program in developing discharge limits for the CTP following the same procedures used to develop effluent limits for NPDES permits. A difference between an NPDES permit and the Superfund actions, is that an NPDES permit requires compliance with effluent limits based on water quality standards immediately or within the term of a compliance schedule included in a permit (e.g., within five years), whereas Superfund actions may take more time to implement and discharges from cleanup actions may take more time to meet water quality standards. This is because Superfund actions generally cover a widespread area, range of pollution sources, and more complicated cleanup efforts which means that the cleanup actions are prioritized and cleanup goals (e.g. water quality standards) might not be met within the near term. This is true in the Coeur d'Alene Basin where EPA's Superfund program first focused on the greatest sources of risk to human health (by doing yard cleanups) and discrete sources of high levels of pollutants to the South Fork (the Bunker Hill CTP and the CIA). At the same time the NPDES program is meeting its obligations under the CWA to issue NPDES permits. The communities ongoing concerns about Superfund cleanup have been forwarded to EPA's Superfund program for their consideration in future cleanup actions.

In regards to the concern that the permitted mine discharges are a small source compared to the other sources of contamination in the entire South Fork, EPA agrees. However, the mines are significant sources in the area where they discharge and they contribute to the exceedences of water quality standards in the South Fork. The CWA does not provide exemption from requiring a discharge to meet water quality standards due to the discharge's significance.

In regards to the questions about the CTP. The Superfund program does not send monitoring reports to the Office of Water nor would the CTP be fined for violations, since the CTP is not covered by an NPDES permit. However, the Superfund program is obligated to take actions (such as the planned upgrade to the CTP) to investigate the cause of exceedences and fix the problem.

Comment #89 - Specific questions related to the CIA Seep (commenters 44, 46, 47)

Commenter 44: The mining companies are a private enterprise that are regulated by EPA on some of the discharges. I understand that the CIA is probably not going to meet the current standards or future standards. They're (EPA) in the process right now of deeding this property over to a private enterprise. Is this a ploy by the EPA and the State to pass this responsibility on

to another private enterprise and force them to come up with the cost to clean up this water?

Commenter 46: The commenter submitted numerous documents regarding the CIA seeps. The commenter then asked the following specific questions: Is EPA Superfund monitoring the seep? Does the data show a flow reduction comparable to that shown by the drain down model shown on the page flagged in the March 20, 1996 Bunker Hill Seepage Collection Memorandum by CH2M Hill? If not, how many years do they intend to continue discharging before they abate the pollution?

Commenter 47: The loading from the Bunker Seeps and Canyon Creek are tremendous in comparison to the mines. One gets more bang for the buck in attempting to remediate the seeps and Canyon Creek, than the mines.

Response: EPA Superfund is monitoring the CIA seep. The data is showing reduced levels of flow and concentration. Because of these reduced levels, EPA Superfund has not yet decided whether or not to treat the seep or wait to see if the recently completed cap will result in a complete reduction of the seeps flow. Detailed comments and questions regarding the CIA seep should be addressed to EPA's Superfund program.

Comment #90 - Analytical procedures for measuring soil concentrations (commenter 48)
The commenter had concerns with the analytical procedures used to measure concentrations of lead, arsenic, cadmium, etc. in the soil. If they used standard EPA analytical procedures, I suspect that they are substantially underestimating the actual concentrations. Normal background lead concentrations are 20 to 50 mg/kg. I find the 1000 mg/kg, or even the 500 mg/kg levels disturbing. One heavy flood is all that it will take to wash away much of the clean soil that has been used to replace contaminated surface material.

Response: This comment apparently refers to Superfund actions or proposed Superfund actions on the Coeur d'Alene River and Spokane River. These actions are not the subject of the comment period on the revised draft mine permits. This comment has been forwarded to EPA's Superfund program. EPA directs the commenters to the administrative record for the Superfund decisions.

APPENDIX A - LISTS OF COMMENTERS

Table A-1: List of Commenters on the 2001 Draft NPDES Permit for the Coeur/Galena Mines and Mills			
Commenter #	Name/Org.	Date Comments Received	See Response to Comments Comment Number
1	Daniel A. Rix, letter dated 4/2/01	4/4/01	1
2	James C. Berry, letter dated 4/11/01	4/16/01	9
3	Michael Oberndorf, chairman, Coalition for Land Use and the Environment, undated letter	4/20/02	5, 23
4	Edward A. Peterson, undated letter	5/2/01	5
5	Wendy M. Lamphere, undated letter	5/8/01	4, 5, 6, 23
6	Judy Ludwick, letter dated 5/6/01	5/9/01	5, 17, 23, 55
7	D.F. Zabel, CLU, Phoenix Home Life Mutual Insurance Company, letter dated 5/7/01	5/10/01	5
8	Rose Zeija, letter dated 5/8/01	5/14/01	23
9	Ray Yount, letter dated, 5/10/01	5/15/01	4, 5, 6
10	Kathy Zanetti, Facilitator, Shoshone Natural Resources Coalition, letter dated 5/14/01	5/17/01	5, 16
11	Ken Bright, undated letter	5/23/01	5
12	Jon Cantamessa, Shoshone County Commissioner, oral testimony at public hearing	6/5/01	5, 10, 14, 20
13	Rex Hendrickson, oral testimony at public hearing	6/5/01	3, 6, 10, 14, 19, 24
14	Joe Peat, oral testimony at public hearing	6/5/01	10, 16, 56
15	Robin Stanley, Mullan School District #352, oral testimony at public hearing	6/5/01	4, 5
16	Connie Fudge, oral and written testimony at public hearing	6/5/01	3, 5, 18
17	Randy Anderson, oral testimony at public hearing	6/5/01	3, 5, 10, 21, 24
18	Earl Castleberry, oral testimony at public hearing	6/5/01	10

Table A-1: List of Commenters on the 2001 Draft NPDES Permit for the Coeur/Galena Mines and Mills

Commenter #	Name/Org.	Date Comments Received	See Response to Comments Comment Number
19	Tom Fudge, oral testimony at public hearing	6/5/01	3, 10, 26, 56
20	Ken Chambers, oral testimony at public hearing	6/5/01	5, 20, 21
21	Bret Bowers, Community Leaders for EPA Accountability Now (CLEAN), oral testimony at public hearing	6/5/01	5, 6, 10, 20, 52, 53
22	Kathy Zanetti, facilitator, SNRC, oral testimony at public hearing	6/5/01	3, 5, 6, 10
23	Joan Herrick, written comment at public hearing	6/5/01	25, 55
24	Berniece Rife, letter dated 6/5/01	6/5/01	5
25	Corey Millard, Coeur Silver Valley, letter dated 6/19/01	6/26/01	30
26	Mike Peterson, The Lands Council, letter dated 6/28/01	7/9/01	8, 9, 11, 12, 21, 22, 33, 34, 46, 47, 51
27	John L. Allen, letter dated 6/29/01	7/9/01	43, 52, 53
28	Warren S. Peterson and Ruby S. Peterson, letter dated 7/9/01	7/12/01	2
29	Lisa D. Millard, letter dated 7/12/01	7/13/01	5, 7, 10, 14
30	Janet G. Voltolini, letter dated 7/12/01	7/13/01	5, 7, 10, 14
31	Harry D. Voltolini, letter dated 7/12/01	7/13/01	5, 7, 10, 14
32	Kathy Zanetti, facilitator, SNRC, letter dated 7/24/01	8/3/01	10, 14, 27, 35, 42, 55
33	Betty deSimas, letter dated 7/31/01	8/3/01	3, 5, 6
34	Ross Stout, District Manager, South Fork Coeur d'Alene River Sewer District, letter dated 8/1/01	8/3/01	5, 7, 10, 53
35	William Boyd, attorney for Coeur Silver Valley, letter dated 8/2/01	8/3/01	13, 15, 27, 29, 30, 31, 32, 35, 36, 37, 38, 39, 40, 41, 42, 44, 49, 50, 54
36	Phillip Cerner, Coeur d'Alene Tribe, letter dated 8/8/01	8/16/01	9, 14, 28, 45, 47, 48

Table A-2: List of Commenters on the 2003 Revised Draft NPDES Permit for the Coeur/Galena Mines and Mills			
Commenter #	Name/Org.	Date Comments Received	See Response to Comments Comment Number
37	William F. Boyd, attorney for Coeur Silver Valley, letter dated 2/4/03	2/6/03	60
38	Harry Cougher, Coeur Silver Valley, oral testimony at public hearing. Also letter dated 02/07/03 repeating oral testimony	2/6/03	58, 60, 65, 66
39	Bill Calhoun, oral testimony at public hearing	2/6/03	60, 88
40	Mike Dexter, Hecla Mining Company, oral and written testimony at public hearing	2/6/03	58, 60, 62, 63, 65, 84
41	Connie Fudge, oral and written testimony at public hearing	2/6/03	60, 63, 64, 70, 84
42	W.C. Rust, oral testimony at public hearing	2/6/03	63, 68, 88
43	Bret Bowers, oral testimony at public hearing	2/6/03	60, 61, 63, 84, 87, 88
44	unidentified speaker, oral testimony at public hearing	2/6/03	89
45	Justin Hayes, Idaho Conservation League, letter dated 2/11/03	2/13/03	67, 69, 71, 72, 78, 82, 83
46	W.C. Rust, letter dated 2/16/03	2/20/03	60, 68, 88, 89
47	Noel D. Logar, letter dated 4/7/03	4/10/03	60, 63, 66, 89
48	Tina Paddock, email dated 4/11/03 and undated letter received 4/14/03	4/11/03	59, 90
49	Jon Cantamessa, Chairman, Jim Vergobbi, Commissioner, and Sherry Krulitz, Commissioner, letter dated 4/8/03	4/14/03	58, 60, 63, 64
50	William Boyd, attorney for Coeur Silver Valley, letter dated 04/10/03	4/15/03	74, 75, 76, 77, 79, 80, 81 Resubmitted comments on the 2001 draft permit
51	Susan B. Martin, U.S. Fish and Wildlife Service, Upper Columbia Fish and Wildlife Office, faxed letter dated 4/11/03	04/11/03	67, 69, 71, 73, 82, 85, 86

**APPENDIX B
SUMMARY OF CHANGES FROM THE 2001 DRAFT PERMIT
TO THE FINAL PERMIT**

The following tables summarize the changes between the 2001 draft permit to the 2003 revised draft permit (Table B-1) and from the 2003 revised draft permit to the final permit (Table B-2). The Fact Sheet accompanying the 2003 Revised Draft Permit describes the changes from the 2001 draft permit to the 2003 revised draft permit in detail. This Response to Comments document describes the changes from the 2003 revised draft permit to the final permit in detail.

Table B-1: Changes From the 2001 Draft Permit to the 2003 Revised Draft Permit		
Cause for Change in the Permit	2003 Revised Draft Permit Part	Summary of Change from the 2001 Draft Permit to the 2003 Revised Draft Permit
State court invalidation of the TMDL & State adoption of the SSC	I.A., Tables 1 and 2	Effluent limits for Cd, Pb, and Zn are no longer based on the TMDL. Instead, two sets of effluent limits for were developed. One set was based on the SSC and the other set was based on the current Idaho water quality criteria.
Comments 30 and 31	I.A., Tables 1 and 2 I.B., Table 3	Revised effluent flow data, revised CVs, and reasonable potential multipliers were used to calculate the revised effluent limits (Cd, Pb, Zn, Hg and Cu) and chronic toxicity triggers.
Comment 32	I.A, Table 1	Outfall 001 chromium VI limits removed and monitoring decreased to once per quarter
Comment 32	I.D, Table 4	chromium VI ambient water quality monitoring removed
Draft suspended solids TMDL prepared by IDEQ	I.A., Tables 1 and 2	Loading limits for TSS were added for each outfall based upon the suspended solids TMDL.
IDEQ pre-certification of the 2003 revised draft permit	I.A.4.	Interim compliance schedule requirements and three year compliance schedules were added for cadmium (001), lead (001 and 002), mercury (001 and 002), and zinc (002).
IDEQ pre-certification of the 2003 revised draft permit and comment 29	I.A., Tables 1 and 2	Effluent limits were calculated for an additional flow tier halfway between the 50 th and 90 th percentile flow tiers.
IDEQ pre-certification of the 2003 revised draft permit	I.D.3.	Annual instream bioassessment monitoring requirements were included in the permit.

Table B-2: Changes From the 2003 Revised Draft Permit to the Final Permit

Cause for Change in the Permit	Final Permit Part	Summary of Change from the 2003 Revised Draft Permit to the Final Permit¹
Permit transfer from Coeur to US Silver	Cover page	The permittee's name was changed from Coeur d'Alene Mines to US Silver.
EPA approval of the SSC	I.A., Tables 1 and 2	The effluent limits for cadmium, lead, and zinc are based on the SSC.
EPA approval of the Suspended Solids TMDL	I.A, Tables 1 and 2	The loading (lbs/day) limits for total suspended solids are based on the approved Suspended Solids TMDL
IDEQ Final 401 certification Comment 76	I.A, Table 1	The copper effluent limits were revised based on mixing zones authorized in the final 401 certification and based on revised upstream copper concentration in Lake Creek. The mercury effluent limits for the two highest flow tiers were revised based on mixing zones authorized in the final 401 certification.
IDEQ Final 401 certification	I.A, Table 2	The copper effluent limits were revised based on mixing zones authorized in the final 401 certification. The mercury effluent limits for the two lowest flow tiers were revised based on mixing zones authorized in the final 401 certification.
Technical error in 2003 draft permit	I.A, Table 2	The mercury effluent limits for the high flow tier were revised to incorporate the technology-based mercury limits since these are more stringent than the water quality-based limits.
Comment 40	I.A, Tables 1 and 2	For flow tiered limits, footnote 1 in Tables 1 and 2 require that the limits for the first tier apply if the upstream flow cannot be safely measured.
Comment 36	I.A., Tables 1 and 2	Continuous effluent flow monitoring was changed to daily flow monitoring.
Comments 35, 38 and 79	I.A., Tables 1 and 2	Effluent mercury monitoring was changed from weekly to twice per month.
Comment 37	I.A., Tables 1 and 2	The requirement to collect 24-hour composite samples for effluent mercury monitoring was replaced with grab samples.
IDEQ final 401 certification	I.A.5. and Table 3	The compliance schedule end date was changed from 3 years to 4 years and nine months from the issuance date. Some of the parameters changed and interim limits were added.
Update WET test manual citation	I.B.1.d. I.B.3.b. I.B.6.c.	The reference to the chronic toxicity testing manual has been changed from the third edition to the fourth edition.
IDEQ final 401	I.B.3.c.	Added a requirement to notify IDEQ.

Table B-2: Changes From the 2003 Revised Draft Permit to the Final Permit

Cause for Change in the Permit	Final Permit Part	Summary of Change from the 2003 Revised Draft Permit to the Final Permit¹
certification	II.B. II.E.2. II.G.3.	
Comment 46 and 47	I.C	Added requirement to perform a hydrological analysis to the original seepage study requirements (new part I.C.2.). Changed report due date from 18 months after effective date to 6 months prior to the expiration date of the permit.
Comment 78	I.D.1., Table 5	Receiving water monitoring for cadmium, lead, and zinc and associated method detection limits have been added to Table 5.
Comment 41	I.D.1.c.	Grab samples required instead of depth-integrated samples for ambient monitoring.
IDEQ final 401 certification	I.D.3.	The wording for the bioassessment monitoring requirement was revised to be consistent with the final 401 certification.
Clarify QAP permit language and delete duplicative permit requirements.	I.E.2.	The 2003 permit language at I.E.2. and I.E.3. was revised and combined into one paragraph (I.E.2.) to delete duplicative language. Internet locations of the quality assurance plan guidance was added to I.E.2.
Comments 38 and 39	III.B.	Changed DMR due date from the 10 th of the following month to the 20 th day of the following month.
Comment 49, #1	III.A.	The first paragraph was revised to be verbatim from the regulatory language.
Comment 49, #4	III.G.1.d.	The permit language was revised to clarify that 24-hour reporting is required for violation of the metals maximum daily limits.
Comment 49, #6	III.I.1. and 2.	The permit language was revised to be verbatim from the regulatory language.
Comment 49, #7	IV.C.	The permit language was revised to be verbatim from the regulatory language.
Comment 49, #9	V.C.	The permit language was revised to be verbatim from the regulatory language.

APPENDIX C
COPPER AND MERCURY WATER QUALITY-BASED EFFLUENT LIMIT
CALCULATIONS FOR THE FINAL PERMIT

The Fact Sheet for the 2003 revised draft permit explained how the water quality-based effluent limits (WQBELs) were revised from those included in the 2001 draft permit. Some of the WQBELs for copper and mercury in the 2003 revised draft permit have been further revised based upon the final 401 certification which included larger mixing zones for some flow tiers. Copper and mercury WQBELs were recalculated from those in the 2003 revised draft permit as follows:

Outfall 001:

- The copper limits in the 2003 revised draft permit were not dependent upon the flow in Lake Creek. The copper limits have been recalculated based on a revised copper upstream concentration (see response to comment 76) and based on mixing zones authorized in the final 401 certification. The final 401 certification authorized mixing zones for each of the five flow tiers.
- The mercury limits in the 2003 revised draft permit were based upon a 25% mixing zone. The final 401 certification retained the 25% mixing zone for the first three flow tiers and authorized a 50% mixing zone for the two highest flow tiers. Therefore, the effluent limits for the two highest flow tiers were recalculated based on a 50% mixing zone. The mercury limits for the first three tiers are the same as in the 2003 draft permit.

Outfall 002:

- The copper limits in the 2003 revised draft permit were based upon a 25% mixing zone. The final 401 certification authorized a 50% mixing zone. Therefore, all of the effluent limits for copper were recalculated based on a 50% mixing zone.
- The mercury limits in the 2003 revised draft permit were based upon a 25% mixing zone. The final 401 certification retained the 25% mixing zone for the three highest flow tiers and authorized a 50% mixing zone for the two lowest flow tiers. Therefore, the effluent limits for the two lowest flow tiers were recalculated based on a 50% mixing zone. The mercury limits for the three highest flow tiers are the same as in the 2003 draft permit

The WQBELs were recalculated following the same procedures as outlined in the 2001 Fact Sheet and the 2003 revised Fact Sheet. The development of WQBELs includes: determining the appropriate water quality criteria, developing a wasteload allocation (WLA) from the criteria, and developing effluent limitations based on the WLA. Sections A. through C., below provide a brief discussion of each of these steps. See the 2001 Fact Sheet and the 2003 revised Fact Sheet for details regarding the procedures. Appendix A of the 2003 Fact Sheet documented the reasonable potential evaluation which established the need for effluent limits for copper and mercury.

A. Water Quality Criteria

The first step in developing water quality-based limits is to determine the applicable water quality criteria. The applicable water quality criteria are the same as those identified in the 2003 Fact Sheet. The aquatic life acute mercury criterion is 2.1 ug/l and the chronic criterion is 0.012 ug/l. The aquatic life criteria for copper are based on hardness according to the following equations:

$$\text{Acute: } (0.960) \exp[(0.9422)\ln H - 1.464]$$

$$\text{Chronic: } (0.960)\exp[(0.8545)\ln H - 1.465]$$

“H” in the above equations is the 5th percentile hardness at the edge of the mixing zone. The following table provides the copper criteria that were used to calculate effluent limits.

Table C-1: Copper and Mercury Criteria				
Parameter	Flow Tier	Hardness, mg/l CaCO ₃ ¹	Water Quality Criteria	
			acute	chronic
Total Mercury, ug/l	flow tiers are applicable to mercury, but the criteria is not dependent upon hardness	not applicable	2.1	0.012
Dissolved Copper, ug/l Outfall 001	< 1.7 cfs	117	20	13
	≥ 1.7 to < 3.8 cfs	75	13	8.9
	≥ 3.8 to < 13.4 cfs	43	7.7	5.5
	≥ 13.4 to < 23 cfs	27	5.0	3.7
	≥ 23 cfs	27	5.0	3.7
Dissolved Copper, ug/l Outfall 002	< 48 cfs	73	13	8.6
	≥ 48 to < 109 cfs	54	9.5	6.7
	≥ 109 to < 379 cfs	44	7.9	5.7
	≥ 379 to < 649 cfs	35	6.3	4.6
	≥ 649 cfs	27	5.0	3.7
Footnotes:				
1 - See Table B-5 of the 2001 Fact Sheet and Appendix A of the 2003 Revised Fact Sheet for hardness values.				

B. Calculate the Wasteload Allocation (WLA)

Where the state authorizes a mixing zone for the discharge, the WLA is calculated using the following mass balance equation (see also Appendix B of the 2001 Fact Sheet).

$$WLA = \frac{\text{criterion} \times [Q_e + (Q_u \times MZ)] - (C_u \times Q_u \times MZ)}{Q_e \times \text{translator}}$$

where,

WLA = waste load allocation

translator = dissolved/total translator

C_u = dissolved upstream receiving water concentration

Q_u = upstream receiving water flow

Q_e = maximum effluent flow

MZ = mixing zone

Following describes the factors used in the WLA equation.

Translator: Wasteload allocations and effluent limits are expressed as total. A translator is used in the above equation to account for the difference between water quality criteria that are expressed as dissolved and wasteload allocations that are expressed as total. A translator is needed for the copper WLA calculations. The copper translator is the same as described in the 2001 Fact Sheet and 2003 revised Fact Sheet. The water quality conversion factor of 0.960 is the default translator.

C_u (upstream concentration of pollutant): The upstream concentrations for mercury (0 ug/l) for both outfalls and for copper for outfall 002 (2.4 ug/l) is the same as identified in the previous Fact Sheets. No changes to these concentrations were suggested in comments or the final 401 certification. The concentration of copper upstream of outfall 001 has been recalculated in response to comment 76. The revised upstream concentration is 2.5 ug/l.

Q_u (upstream flow): For the lowest flow tier, the upstream flow used in the WLA equation is the 1Q10 flow for the acute criteria and the 7Q10 flow for the chronic criteria. For the other four flow tiers, the lowest flow of each flow tier is used in the WLA equation. These flows are the same as identified in the 2003 revised Fact Sheet. For outfall 001, the upstream flows are: 0.95 (acute)/1.1 (chronic), 1.7, 3.8, 13, and 23 cfs. For outfall 002, the upstream flows are: 27(acute)/31(chronic), 48, 109, 379, and 649 cfs.

Q_e (effluent flow): The effluent flow used in the mass balance equation is the maximum effluent flow. This value is same as used for the 2003 revised draft permit calculations (see Appendix C of the 2003 revised Fact Sheet). The effluent flow for outfall 001 is 2.57 cfs and the effluent flow for outfall 002 is 1.39 cfs.

MZ (the percent mixing zone based on receiving water flow): The mixing zones are those specified in IDEQ's final 401 certification which are provided on page 7 of the Response to Comments.

The WLAs for copper and mercury are shown in Table C-2 and C-3.

C. Water Quality-based Permit Limit Derivation – convert WLA into effluent limits

The acute and chronic WLAs are converted to long-term average concentrations (LTAs) and compared. The most stringent LTA concentration for each parameter is converted to effluent limits. The procedures, below, are a summary of the procedures in the 2001 Fact Sheet and the 2003 revised Fact Sheet.

Calculation of LTAs: The following equation from Chapter 5 of the TSD is used to calculate the LTA concentrations (alternately, Table 5-1 of the TSD may be used):

$$LTA = WLA \times \exp[0.5\sigma^2 - z\sigma]$$

where: σ^2 = $\ln(CV^2 + 1)$ for acute aquatic life criteria
= $\ln(CV^2/4 + 1)$ for chronic aquatic life criteria
CV = coefficient of variation
z = 2.326 for 99th percentile probability basis, per the TSD

The CV values for copper and mercury are shown in Tables A-3 and A-4 of the 2003 revised Fact Sheet. For outfall 001, the copper CV is 1.37 and the mercury CV is 0.6. For outfall 002, the copper CV is 0.69 and the mercury CV is 0.6.

Calculation of Effluent Limits: The LTA concentration is calculated for each criterion and compared. The most stringent LTA concentration is then used to develop the maximum daily (MDL) and average monthly (AML) permit limits. The MDL and AML are calculated using the following equations from the TSD (alternately, Table 5-2 of the TSD may be used):

$$\text{Max daily limit and average monthly limit} = LTA \times \exp[z\sigma - 0.5\sigma^2]$$

for the MDL: $\sigma^2 = \ln(CV^2 + 1)$
z = 2.326 for 99th percentile probability basis, per the TSD

for the AML: $\sigma^2 = \ln(CV^2/n + 1)$
n = number of sampling events required per month = 4
z = 1.645 for 95th percentile probability basis, per the TSD

The copper and mercury WQBELs calculated from the above equations are shown in Tables C-2 and C-3. These tables also show intermediate calculations (i.e., WLAs, LTAs) used to derive the effluent limits.

Table C-2: Summary of Copper and Mercury Water Quality-based Effluent Limit Derivation for Outfall 001

Parameter ug/l	Flow Tier	Aquatic Life Criteria WLAs		Aquatic Life Criteria LTA Concentrations		Water Quality-based Effluent Limits		
		acute WLA	chronic WLA	acute LTA	chronic LTA	Basis ¹	maximum daily limit	avg. monthly limit
copper	< 1.7 cfs	23.06	11.38	3.74	3.41	chronic	21	7.7
	≥ 1.7 to < 3.8 cfs	15.35	10.37	2.49	3.11	acute	15	5.7
	≥ 3.8 to < 13.4 cfs	10.02	6.88	1.62	2.07	acute	10	3.8
	≥ 13.4 to < 23 cfs	12.00	7.11	1.94	2.13	acute	12	4.4
	≥ 23 cfs	22.69	12.24	3.68	3.67	chronic	23	8.2
mercury ²	≥ 13.4 to < 23 cfs	7.57	0.043	2.43	0.0228	chronic	0.071	0.035
	≥ 23 cfs	11.50	0.066	3.69	0.0346	chronic	0.011	0.054

WLA = wasteload allocation

LTA = long-term average

Footnotes:

1- Effluent limits are based on the most stringent criteria (lowest LTA).

2- Effluent limits for mercury for the higher flow tiers were not revised from the 2003 draft permit.

Table C-3: Summary of Copper and Mercury Water Quality-based Effluent Limit Derivation for Outfall 002

Parameter ug/l	Flow Tier	Aquatic Life Criteria WLAs		Aquatic Life Criteria LTA Concentrations		Water Quality-based Effluent Limits		
		acute WLA	chronic WLA	acute LTA	chronic LTA	Basis ¹	maximum daily limit	avg. monthly limit
copper	< 48 cfs	120.8	80.97	33.9	38.9	acute	120	56
	≥ 48 to < 109 cfs	137.6	84.3	38.7	40.6	acute	130	64
	≥ 109 to < 379 cfs	232.9	140.7	65.4	67.7	acute	230	110
	≥ 379 to < 649 cfs	560.4	317.2	157.5	152.6	chronic	540	250
	≥ 649 cfs	637.5	320.0	179.1	153.9	chronic	550	250
mercury ²	< 48 cfs	21.4	0.146	6.88	0.0768	chronic	0.24	0.12
	≥ 48 to < 109 cfs	34.4	0.219	11.03	0.116	chronic	0.35	0.18

WLA = wasteload allocation

LTA = long-term average

Footnotes:

1- Effluent limits are based on the most stringent criteria (lowest LTA).

2- Effluent limits for mercury for the three highest flow tiers were not revised from the 2003 draft permit.

The copper and mercury WQBELs for outfall 001 were included in Table 1 of the final permit.

The copper WQBELs for outfall 002 for the first three flow tiers and the mercury WQBELs were included in Table 2 of the final permit. The copper WQBELs for outfall 002 for the two highest flow tiers were not incorporated into the permit since the technology-based limits are more stringent. The copper WQBELs for the two highest flow tiers are greater than the applicable technology-based limits for this outfall. The technology-based limits for copper are 300 ug/l maximum daily and 150 ug/l average monthly (see Table A-1 of the 2003 Fact Sheet and 40 CFR 440.103). As discussed in the 2001 Fact Sheet and the 2003 Fact Sheet, the Clean Water Act and NPDES regulations require that the more stringent of the technology-based limits and water quality-based limits apply. Therefore, the copper technology-based limits were included in the final permit for the two highest flow tiers for outfall 002.

D. Mass-based Limits

As discussed in the 2003 Fact Sheet (Appendix A), the metals WQBELs are also expressed in terms of mass. The following equation was used to calculate the mass-based limits in the final permit.

mass limit (lb/day) = concentration limit (ug/l) x effluent flow rate x conversion factor
where,

conversion factor = 0.005379 (to convert units on the right side of the equation to lb/day)

effluent flow rate = maximum discharge rate (cfs)

= 2.57 cfs for outfall 001 and 1.39 cfs for outfall 002

APPENDIX D
RESPONSE TO COMMENT #71 ON THE 2003 REVISED DRAFT PERMIT

The following supports EPA's response to comment #71 on the 2003 revised draft permit. The comment suggested that the use of effluent hardness in calculating criteria end-of-pipe effluent limits is not protective of water quality criteria.

This appendix presents six figures (one for each; cadmium, lead, and zinc from outfalls 001 and outfall 002) that plot the dissolved pollutant concentration versus hardness. Each of the figures includes a curve and a straight line. The solid curve on the figures represents how the pollutant criterion that was used to develop the effluent limit varies with hardness. The straight (dashed) line shows the change in the hardness and the change in the pollutant concentration in the receiving water as an effluents with a hardness of 97 and 130 mg/l CaCO₃ (outfalls 001 and 002 respectively) mixes with a receiving water with a hardness value of 27 mg/l CaCO₃ (e.g., the South Fork and Lake Creek at high flow). As long as the straight line representing the mixed effluent/receiving water concentrations lies below the criteria curve (i.e., receiving water concentrations are always below criteria), then we can say that as the effluent discharges to and mixes with the South Fork and Lake Creek there is never an exceedence of the criteria. If this is the case, then the use of effluent hardness to calculate the effluent limit is protective. If the straight line representing the mixed effluent/receiving water concentrations is above the criteria curve, then the use of effluent hardness is not protective since there could be exceedences of the criteria as the effluent mixes with the receiving water.

For cadmium, lead, and zinc, the straight lines representing the mixed effluent-receiving water concentrations are always below (less than) the chronic criteria, therefore, as the effluent discharges to and mixes with the receiving water there is never an exceedence of the criteria. Therefore, the use of effluent hardness to calculate the cadmium, lead, and zinc limits is protective of the water quality criteria.

Figure D-1: Comparison of Chronic Cd SSC to outfall 001 Cd Conc upon Mixing

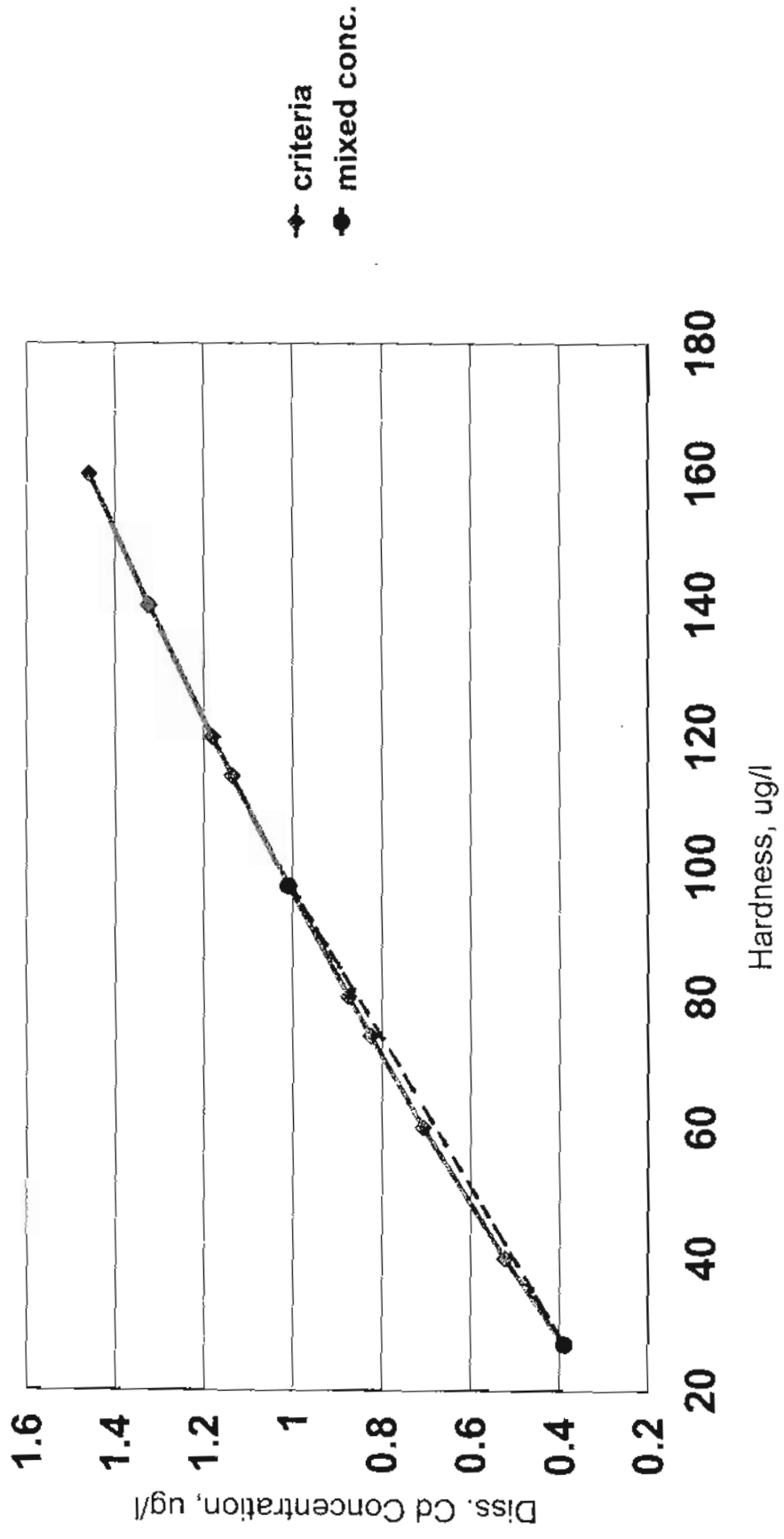


Figure D-2: Comparison of Chronic Cd SSC to outfall 002 Cd Conc upon Mixing

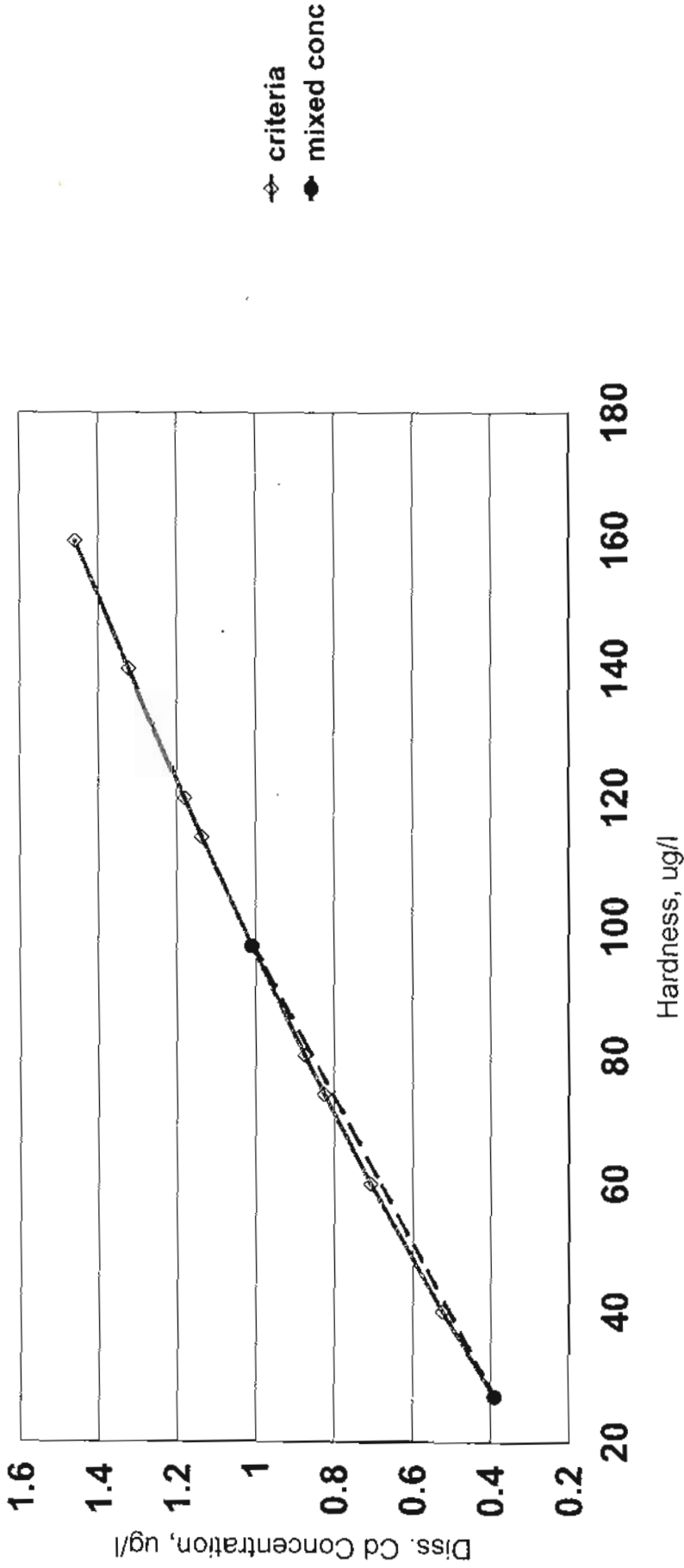


Figure D-3: Comparison of Chronic Pb SSC Criteria to outfall 001 Pb Conc upon Mixing

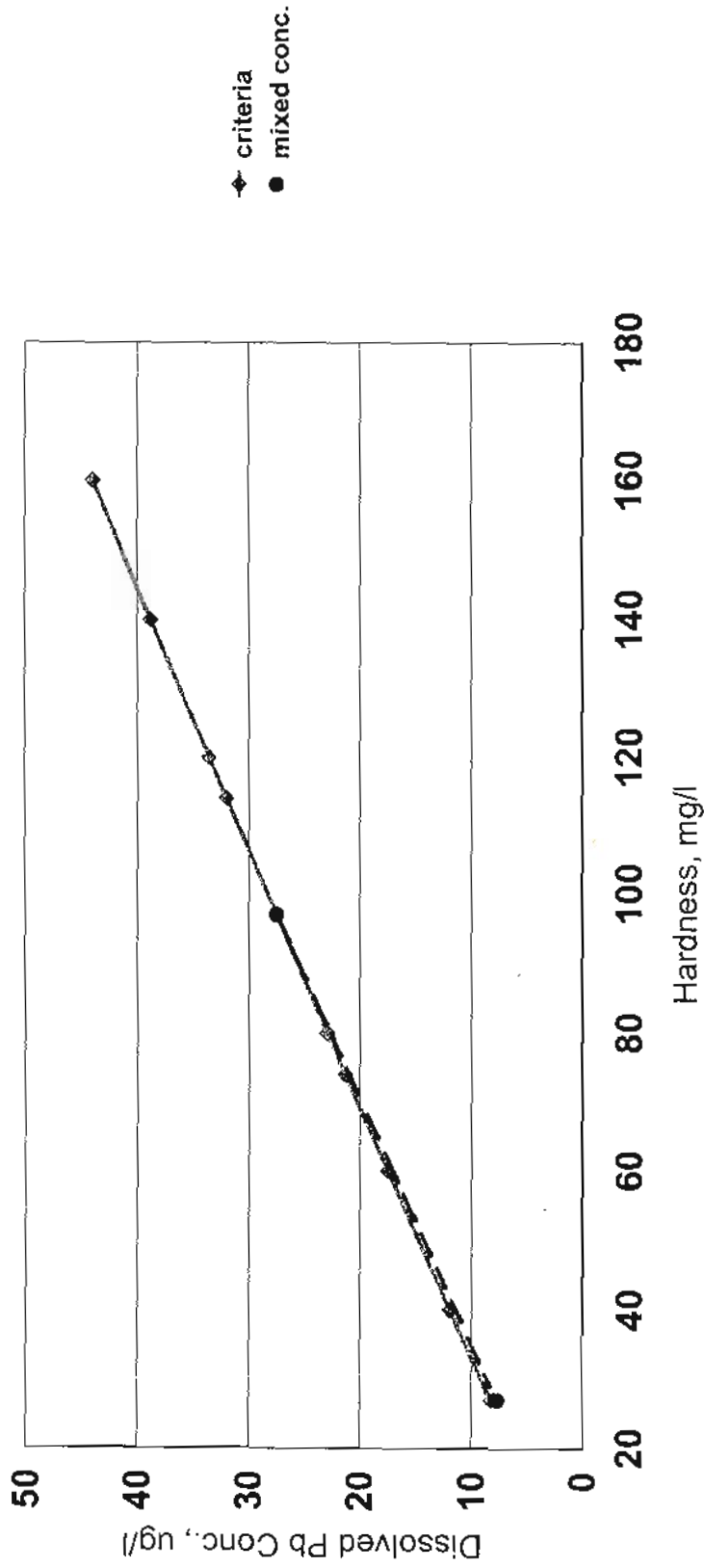


Figure D-4: Comparison of Chronic Pb SSC Criteria to outfall 002 Pb Conc upon Mixing

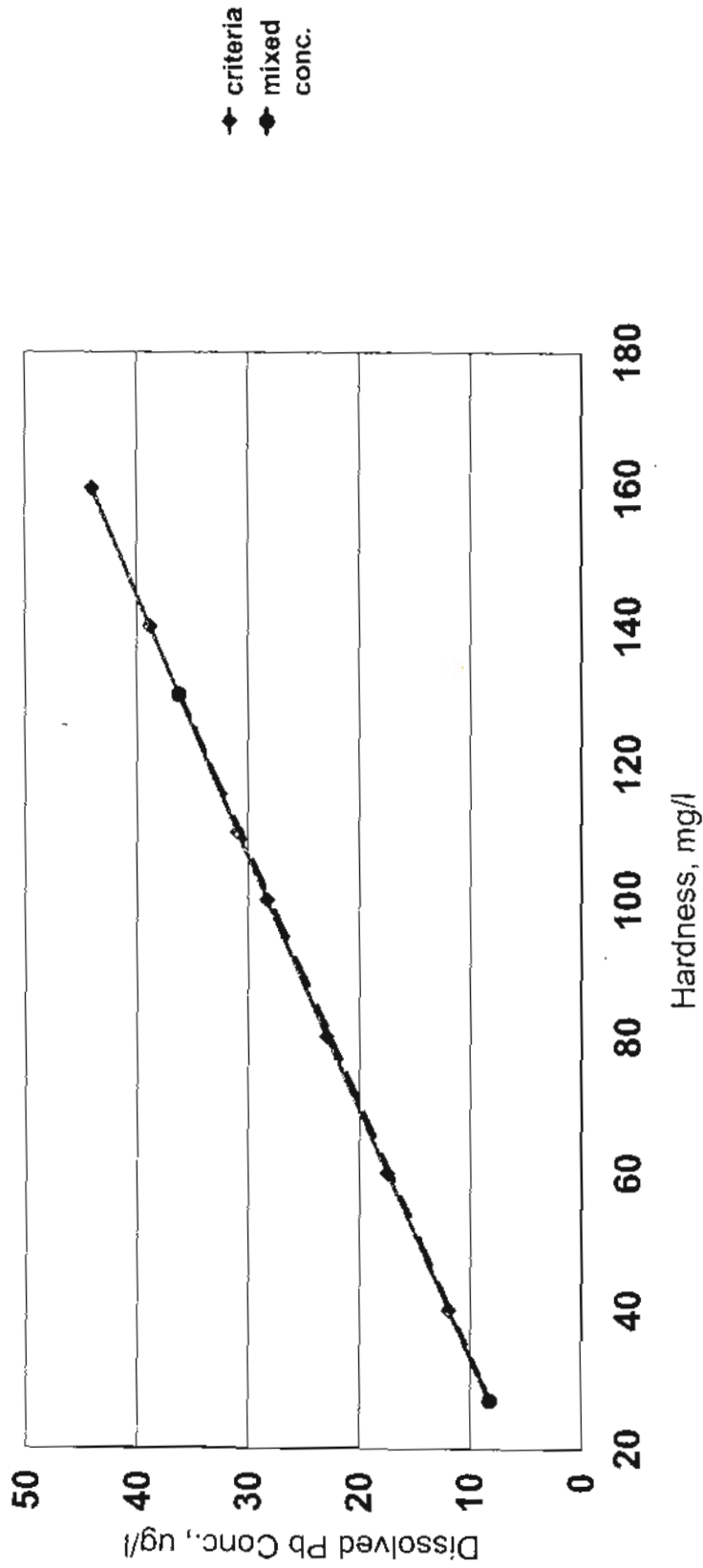


Figure D-5: Comparison of Chronic Zn SSC to outfall 001 Zn Conc upon Mixing

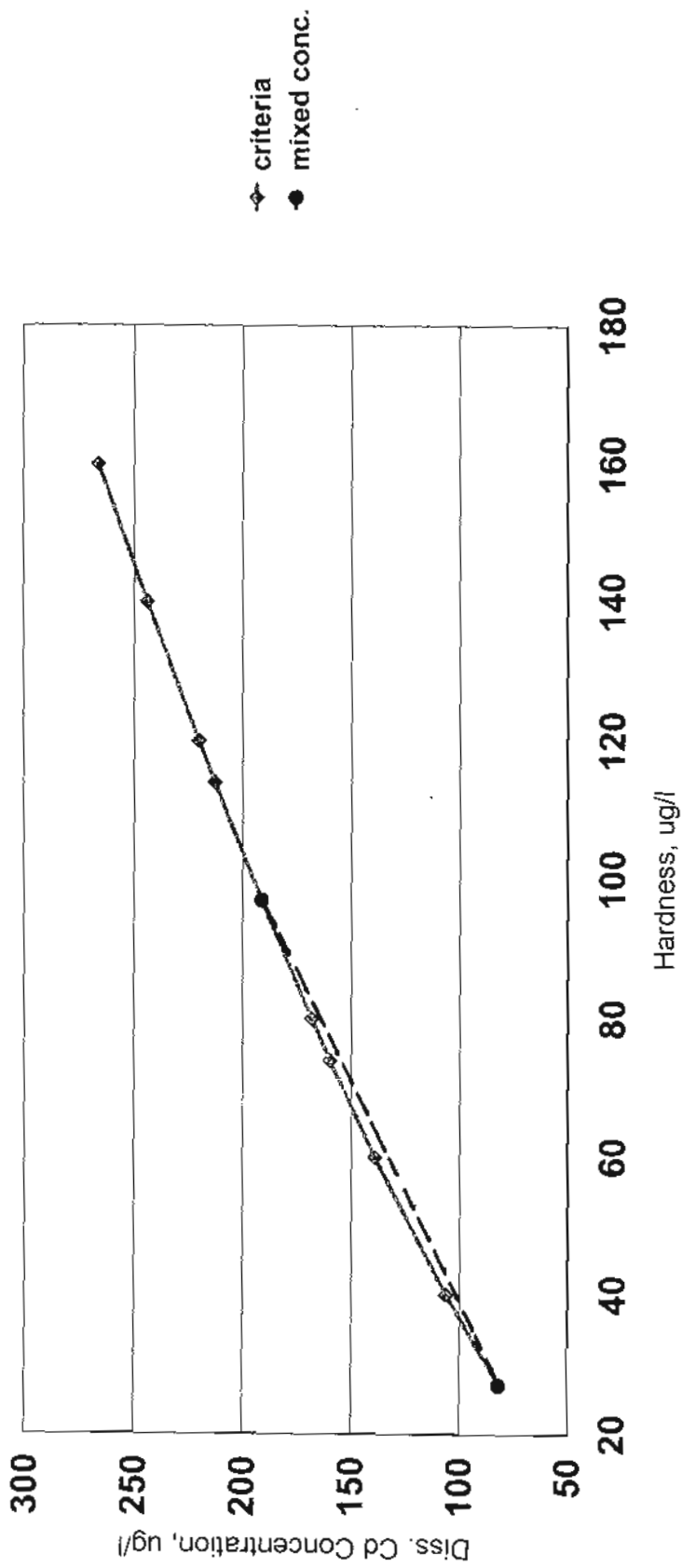
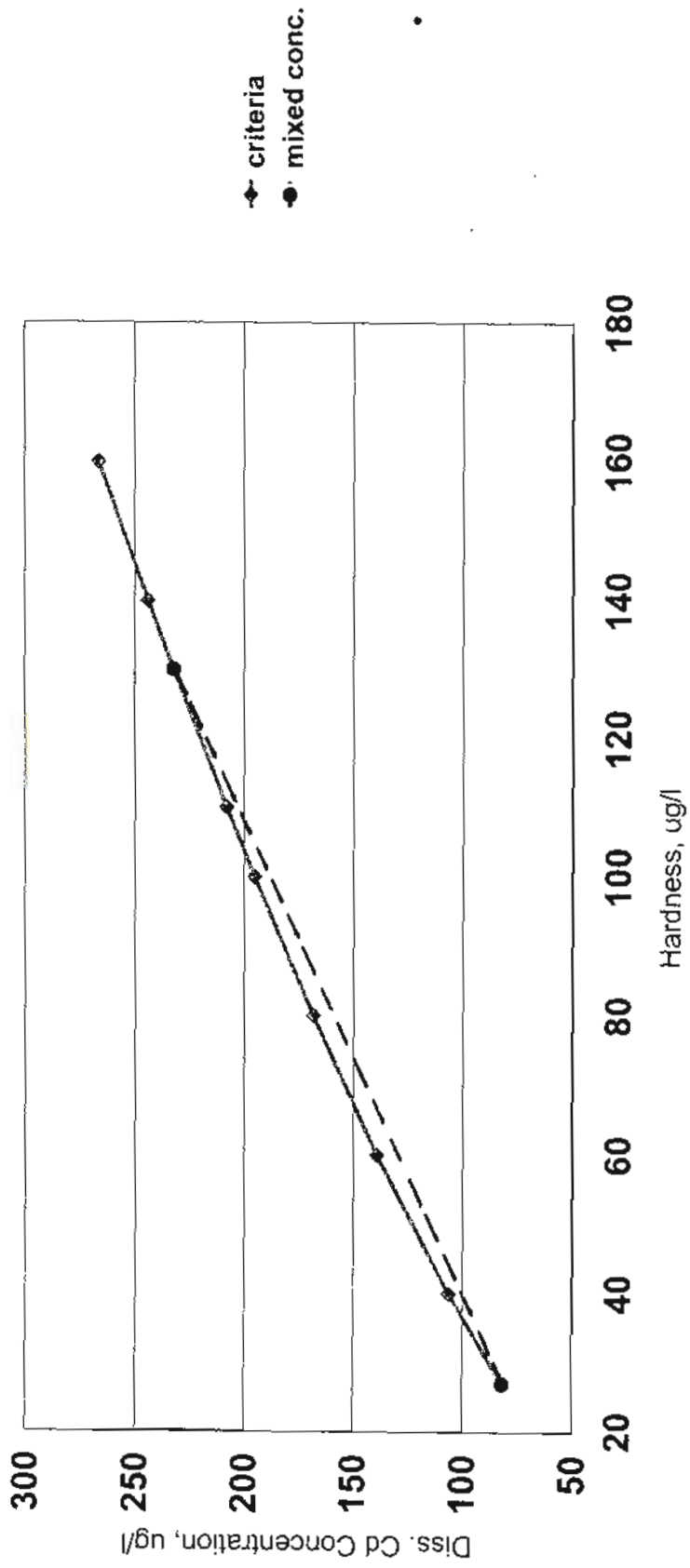


Figure D-6: Comparison of Chronic Zn SSC to outfall 002 Zn Conc upon Mixing



APPENDIX E - LIST OF REFERENCES

- EPA 1991a U.S. Environmental Protection Agency (EPA). Technical Support Document for Water Quality-based Toxics Control. Office of Water Enforcement and Permits, Office of Water Regulations and Standards. Washington, D.C. March 1991. EPA/505/2-90-001.
- EPA 1991b U.S. Environmental Protection Agency (EPA). Technical Support Document for Water Quality-based Toxics Control, Responsiveness Summary. EPA Office of Water.
- EPA 1994 U.S. Environmental Protection Agency (EPA). Whole Effluent Toxicity (WET) Control Policy, Policy for the Development of Effluent Limitations in National Pollutant Discharge Elimination System Permits to Control Whole Effluent Toxicity for the Protection of Aquatic Life. Office of Water. EPA 833-B-94-002. July 1994.
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- EPA 2000 U.S. Environmental Protection Agency (EPA). Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination Program. Office of Wastewater Management. EPA 833-R-00-003. June 2000.
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- EPA Region 10 1996
U.S. Environmental Protection Agency (EPA) Region 10. Guidance for WQBELs Below Analytical Detection Quantization Level. Effective date March 22, 1996.
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U.S. Environmental Protection Agency (EPA) Region 10. Coeur d'Alene Basin Final Remedial Investigation/Feasibility Study. EPA Region 10. September 2001.

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- IDEQ 2006 Idaho Department of Environmental Quality (IDEQ). Letter from Gwen Fransen, IDEQ, to Michael Lidgard, EPA, 401 Certification regarding Permit No. ID-0000027 Coeur Silver Valley - Coeur and Galena Mines and Mills. September 29, 2006.