U.S. ENVIRONMENTAL PROTECTION AGENCY

Response to Comments on the Draft NPDES Permits for Hecla Limited Grouse Creek Unit

NPDES Permit Number ID0026468

U.S. EPA Region 10 Office of Water and Watersheds

September 2018

Overview

On June 11, 2015, the U.S. Environmental Protection Agency (EPA) issued a draft National Pollutant Discharge Elimination System (NPDES) permit for the Hecla Limited Grouse Creek Unit for public review and comment. The public comment period closed on July 13, 2015. The EPA received comments from Hecla Limited (Hecla) and from the Idaho Conservation League (ICL). Hecla's comments on the 2015 draft permit and fact sheet included a technical memorandum prepared for Hecla by GEI Consultants, dated July 10, 2015.

On March 17, 2016, the EPA issued a revised draft permit and reopened the public comment period pursuant to 40 CFR 124.14. As discussed in the fact sheet, the EPA was only accepting comments on specific changes that were made to the permit between the 2015 draft permit and the 2016 draft permit. A list of these changes is set forth in the fact sheet. The public comment period was scheduled to close on April 18, 2016, but was extended to May 18, 2016 at Hecla's request. The EPA received comments from Hecla and ICL, however, the EPA did not receive comments from Hecla until May 20, 2016, two days after the public comment period closed. The EPA has responded to all substantive comments received on the draft permits, including those received from Hecla on May 20, 2016. Hecla's comments on the 2016 draft permit and fact sheet included a technical memorandum prepared for Hecla by GEI Consultants, dated May 17, 2016.

Section 1: Response to Comments Received during the 2016 Public Comment Period

Comment #1-1 (ICL)

Recognizing that there are certain scenarios that do allow for backsliding, we do not think that the justifications cited regarding the increased discharges of Copper, Zinc and whole effluent toxicity (WET) at outfalls 002 and 003. Namely, we do not believe that Idaho has correctly reviewed the antidegradation situation related to operations under this permit. Thus, the increased discharges authorized here are not consistent with Idaho's antidegradation rule.

DEQ has determined that copper and zinc discharges to Jordan Creek will utilize 10% of the assimilative capacity of the creek. In order to authorize a discharge at this level, the EPA needs to ensure that the DEQ has undertaken a full socio-economic justification and review. To our knowledge, such a review has not been undertaken. Thus, it is not lawful to authorize discharges at this level.

Response #1-1

As explained in the revised (2016) Fact Sheet on Pages 14-15, the effluent limits for copper and zinc at outfall 003 ensure compliance with water quality criteria and with the State of Idaho's antidegradation policy, even though they are less stringent than the corresponding limits in the discharge authorization issued under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Since Outfall 003 has never been authorized under a NPDES permit, the EPA considers it to be a new outfall; therefore, there is no backsliding. Regarding outfall 002, the revised effluent limits for copper and zinc ensure compliance with water quality criteria and the State's antidegradation policy. As such, as explained on page 15 of the fact sheet, backsliding can be authorized pursuant to Sections 303(d)(4)(B) and 402(o)(3) of the Clean Water Act.

The EPA believes that ICL's statement that "DEQ has determined that copper and zinc discharges to Jordan Creek will utilize 10% of the assimilative capacity of the creek" is in reference to Table 3 of IDEQ's draft Clean Water Act Section 401 certification dated November 9, 2015. This table states that the revised maximum daily limits for copper and zinc will reduce assimilative capacity by 10%.

However, ICL's statement that this requires a full socioeconomic justification and review is not accurate. IDEQ has the discretion under Idaho's antidegradation implementation methods to determine that a decrease in assimilative capacity "equal to or less than ten percent (10%)" is insignificant degradation.

As explained on Pages 8-9 of the Clean Water Act Section 401 certification, IDEQ believes it is acceptable to consider a 10% loss of assimilative capacity to be insignificant in this case because the permitted outfall is the only point source in the Jordan Creek watershed.

The commenter states that the draft permit authorizes "increased discharges of…WET at outfalls 002 and 003." This is not the case. The effluent limits for WET, for outfall 002, are more stringent than the corresponding limits in the 2002 NPDES permit, and the CERCLA discharge authorization for Outfall 003 did not include effluent limits for WET. See the 2002 Permit at Table 1 (Page 5) and the 2015 draft Clean Water Act Section 401 certification at Tables 1, 2, 4, 5, and 6.

Because the proposed WET effluent limits are more stringent than the corresponding limits in the previous NPDES permit for outfall 002 and are being established for the first time for outfall 003, the proposed WET limits do not constitute backsliding.

Comment #1-2 (ICL)

The removal of the limits for silver constitutes backsliding. The facility will continue to discharge silver. Indeed, the facility requires a 25% mixing zone for silver in order to avoid violating water quality standards at the edge of its acute and chronic mixing zones. The permit must contain limits that are at least as stringent as the silver limits found in the current permit in order to ensure that the discharge does not increase its silver discharges and further degrade water quality in this tier 2 water.

Response #1-2

As explained in the 2015 fact sheet (Pages 16 – 17) IDEQ determined that the removal of effluent limits for silver is consistent with its antidegradation policy. The EPA has determined the discharge from outfall 002 does not have the reasonable potential to cause or contribute to excursions above water quality criteria for silver. Therefore, the removal of the silver limits complies with Sections 303(d)(4)(B) and 402(o)(3) of the Clean Water Act.

IDEQ authorized a 25% mixing zone for silver for outfalls 002 and 003, and the dilution factors resulting from these authorized mixing zones were considered in the reasonable potential analysis consistent with 40 CFR 122.44(d)(1)(ii). However, even if dilution was not considered in the reasonable potential analysis, the discharges of silver from outfalls 002 and 003 would not have the reasonable potential to cause or contribute to excursions above water quality standards for silver. The maximum effluent concentration of silver measured in 297 samples in outfall 002 was 0.13 µg/L, and the reasonable potential multiplying factor is 1.40. Thus, the maximum projected effluent concentration of silver is 0.13 µg/L × 1.40, which is 0.182 µg/L, which is less than the most stringent water quality criterion of 0.318 µg/L. See the 2016 Fact Sheet at Table B-7.

The maximum effluent concentration of 0.13 µg/L is 22% of the most stringent effluent limit for silver in the 2002 permit (0.60 µg/L). There is no reason to expect that discharges of silver will increase over the term of this permit, since the mine is not operating. Thus, in the absence of reasonable potential, it is unnecessary to continue the effluent limits for silver in the 2002 permit to ensure that discharges of silver will not increase. Further, as explained above, the removal of the silver limit meets an anti-backsliding exception.

Comment #1-3 (ICL)

It is not clear to us that Idaho's revised mixing zone rules have been approved by the EPA. As such, it is not appropriate for the DEQ to be utilizing them for the development of mixing zones in Idaho. Nor is it appropriate for the EPA to be incorporating these rules into an EPA NPDES permit.

Response #1-3

The State of Idaho adopted a revised mixing zone policy on April 11, 2015 ("2015 Mixing Zone Policy") and submitted the revised policy to the EPA for approval on December 22, 2016. The 2015 Mixing Zone Policy appears in Section 060 of the Idaho Water Quality Standards (IDAPA 58.01.02), in the current version of the Idaho Administrative Code, which is available at: https://adminrules.idaho.gov/rules/current/58/580102.pdf

The EPA has not yet acted upon the 2015 Mixing Zone Policy. However, the EPA approved the State's prior mixing zone policy ("prior Mixing Zone Policy"), as part of the State's applicable water quality standards. Therefore, per 40 CFR 131.21, the prior Mixing Zone Policy remains in effect for Clean Water Act purposes. The prior Mixing Zone Policy appears in Section 060 of the Idaho Water Quality Standards, in the archived version of the Idaho Administrative Code from 2014, which is available at: https://adminrules.idaho.gov/rules/2014/58/0102.pdf

IDEQ used their revised mixing zone policy, which is in effect under state law, when authorizing and sizing the mixing zones for the Grouse Creek permit. However, the EPA believes the mixing zones authorized by IDEQ are consistent with the prior mixing zone policy that remains in effect for Clean Water Act purposes, as well as the revised mixing zone policy that is in effect under Idaho state law. See Response to Comment #1-4.

Comment #1-4 (ICL)

It is not clear to us what the justification is for mixing zones that utilize greater than 25% of the receiving flow.

Idaho's most recent mixing zone rule provides for the following:

060.MIXING ZONE POLICY.

01. Mixing Zones for Point Source Discharges.

…

c. The size of mixing zone(s) and the concentration of pollutant(s) present shall be evaluated based on the permitted design flow. The Department shall not authorize a mixing zone that is determined to be larger than is necessary considering siting, technological, and managerial options available to the discharger. (4-11-15)

d. Mixing zones, individually or in combination with other mixing zones, shall not cause unreasonable interference with, or danger to, beneficial uses. Unreasonable interference with, or danger to, beneficial uses includes, but is not limited to, the following:

…

h. Mixing zones shall meet the following restrictions; provided, however, that the Department may authorize mixing zones that vary from the restrictions under the circumstances set forth in Subsection 060.01.i. below: (4-11-15)

i. For flowing waters: (4-11-15)

(1) The width of a mixing zone is not to exceed twenty-five percent (25%) of the stream width; and (4-11-15)

(2) The mixing zone shall not include more than twenty-five percent (25%) of the low flow design discharge conditions as set forth in Subsection 210.03.b. of these rules. (4-11-15)

…

i. The Department may authorize a mixing zone that varies from the limits in Subsection 060.01.h. if it is established that: (4-11-15)

…

ii. A larger mixing zone is needed by the discharger and does not cause an unreasonable interference with, or danger to, beneficial uses as described in Subsection 060.01.d., and the mixing zone meets the other requirements set forth in Section 060. The discharger shall provide to the Department an analysis that demonstrates a larger mixing zone is needed given siting, technological, and managerial options.

We interpret all of this to mean that the DEQ can, under certain circumstances, authorize a mixing zone larger than 25% of the receiving flow. However, doing so requires that the DEQ undertake significant analysis to justify this action. No such analysis or justification has been incorporated in the NPDES permit or 401 cert. Absent this analysis, the DEQ cannot authorize a MZ greater than 25%.

Response #1-4

As explained in the response to comment #1-3, the revised Mixing Zone Policy quoted by the commenter has not yet been approved by the EPA, and therefore is not in effect for Clean Water Act purposes (although it is in effect under Idaho state law).

Idaho's prior Mixing Zone Policy, which is in effect for Clean Water Act purposes, states that "the Department will determine the applicability of a mixing zone and, if applicable, its size, configuration, and location" (IDAPA 58.01.02.060.01, 2014). Thus, the authority to authorize and determine the size of mixing zones rests with IDEQ.

The language quoted by the commenter regarding authorizing mixing zones larger than 25% is not in effect for Clean Water Act purposes. The corresponding language from the prior Mixing Zone Policy, which is in effect for Clean Water Act Purposes, is as follows:

Section 060.01: After a biological, chemical, and physical appraisal of the receiving water and the proposed discharge and after consultation with the person(s) responsible for the wastewater discharge, the Department will determine the applicability of a mixing zone and, if applicable, its size, configuration, and location. In defining a mixing zone, the Department ***will consider*** *the following principles:*

…

e. Mixing zones in flowing receiving waters are to be limited to the following:

…

iv. The mixing zone is not to include more than twenty-five percent (25%) of the volume of the stream flow.

(emphasis added).

This language requires IDEQ to "consider" limiting the mixing zone to 25% of the volume of the stream flow, while still allowing for discretion to exceed this size in certain circumstances.

Ever since the prior Mixing Zone Policy was approved in 1996, it has been IDEQ's interpretation, and the EPA's understanding of IDEQ's interpretation, that the "principles" listed under IDAPA 58.01.02.060.01 (2014) were not binding (EPA 1996). IDEQ has reaffirmed this interpretation of the prior Mixing Zone Policy in draft guidance (IDEQ 2008), in supporting documentation for its revised mixing zone rule (IDEQ 2016), and in its authorizations of mixing zones for other permits, such as the 52.5% mixing zone for phosphorus for the City of Idaho Falls (IDEQ 2012) and the 47% and 60% mixing zones for phosphorus for the City of Sandpoint (IDEQ 2017).[1]

The only mixing zones authorized that are larger than 25% for this permit are for WET. As explained on Page 13 of the revised draft certification, the prior permit had authorized 100% mixing zones for WET, but IDEQ reduced the size of the mixing zones based on the requirement of Idaho's mixing zone policy that "the Department shall not authorize a mixing zone that is determined to be larger than is necessary" (IDAPA 58.01.02.060.01.c). Specifically, IDEQ determined that limits resulting from the smaller mixing zones are achievable, and therefore larger mixing zones are not necessary. Although this specific provision is not in effect for Clean Water Act purposes, it is in effect under State law and it is also consistent with EPA guidance stating that "the area or volume of an individual mixing zone or group of mixing zones should be as small as practicable" (EPA 2014), therefore, it is reasonable for IDEQ to consider this rule when sizing mixing zones.

In sum, while IDEQ utilized the unapproved 2015 mixing zone policy to establish the WET mixing zone, under either the 2015 mixing zone policy or the prior EPA-approved mixing zone policy, IDEQ was authorized to allow for a larger than 25% mixing zone.

[1] The phosphorus mixing zones in the Sandpoint NPDES permit are under appeal. See https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/EAB+Dockets/988c418324849e4c852582c80044c2a2!OpenDocument

Comment #1-5 (ICL)

We continue to disagree with DEQ's determination that outfall 003 is an existing discharge from the perspective of an antidegradation review.

Outfall 003 has not previously been regulated under the Clean Water Act and outfall 003 has not previously been subject to an NPDES permit and has not been subject to Clean Water Act regulated effluent limits. DEQ errors in its conclusion that the previous CERCLA regulation equates to a Clean Water Act 'permit or license.'

Outfall 003 needs to be treated as new discharge for antidegradation purposes.

Response #1-5

The question of whether outfall 003 is an existing discharge for the purposes of antidegradation review is beyond the scope of the reopened comment period. However, ICL made a similar comment on the 2015 draft permit. See the response to comment #2-3.

Comment #1-6 (ICL)

The prior CERCLA regulations that governed outfall 003 were significantly more stringent than the proposed limits in the NPDES permit. Thus, the new NPDES limits represent a significant increase in the level of pollution that can be discharged to the Yankee Fork. This increased discharge represents newly authorized degradation and is not lawful under Idaho's antidegradation rules.

Response #1-6

As shown in Tables 4, 5, and 6 of the IDEQ's 401 certification, some of the limits for outfall 003 in the draft permit are less stringent than the corresponding limits in the CERCLA discharge authorization, while other limits are more stringent.

Those limits that are less stringent than the corresponding limits in the CERCLA discharge authorization result in less than a 10% reduction in assimilative capacity (see the Clean Water Act Section 401 certification at Table 7). IDEQ has determined that these reductions in assimilative capacity are not significant. Thus, IDEQ has concluded that no further Tier II analysis for other source controls, alternatives analysis, or socioeconomic justification is required. As explained on Page 12 of the 2016 fact sheet, the EPA reviewed IDEQ's draft 401 certification and concluded that the certification is consistent with the State's water quality standards, including antidegradation requirements. The final certification is not materially different from the draft certification.

Comment #1-7 (ICL)

The revised draft permit authorizes, for the first time, NPDES regulated discharges from Outfall 003. These discharges are authorized to utilize a 75% mixing zone for certain pollutants. This new discharge, and its 75% mixing zone has the potential to impact ESA listed fish species as they utilize the receiving water for migration and/or habitation. The Services need to conduct a formal ESA consultation to determine if this action has the potential to harm listed species.

Response #1-7

As explained in the revised Fact Sheet at Page 24, the EPA has determined that the permitted discharges are likely to adversely affect Chinook salmon, steelhead, and bull trout.

The only parameter for which a mixing zone larger than 25% of the stream flow has been authorized is WET; the mixing zones for WET are 50% of the stream flow for outfall 002 and 75% of the stream flow for outfall 003. The biological evaluation (BE) prepared for the issuance of this permit considered the impact of the IDEQ-authorized mixing zones, including the mixing zones for WET, on threatened and endangered species.

Both NOAA Fisheries and the U.S. Fish and Wildlife Service (USFWS) have issued biological opinions for the issuance of this permit. The NOAA Fisheries Opinion was issued on February 14, 2018 and the USFWS opinion was issued on April 30, 2018. The opinions concluded that the reissuance of the permit will not jeopardize the survival and recovery of Snake River spring/summer Chinook salmon, Snake River Steelhead, or bull trout. NOAA Fisheries also concurred with the EPA's finding that the permit is not likely to adversely affect Snake River sockeye salmon. Terms and conditions in the incidental take statements for the opinions have been incorporated into the final permit, as described under "Other Changes to the Permit" in this Response to Comments.

Comment #1-8 (ICL)

The revised draft permit provides for monthly or quarterly sampling frequency of many of the pollutants that are regulated with weekly and monthly average limits. This sampling regime will not provide sufficient data to properly evaluate whether the discharger is meeting its permit limits. All pollutants that are limited in the permit should be sampled at a weekly frequency at a minimum.

Response #1-8

The permit does not include any weekly effluent limits. In general, the effluent limits in the permit are stated as average monthly and maximum daily limits, in accordance with 40 CFR 122.45(d)(1).

The sampling frequency is independent from the way in which the effluent limits are stated. However, the required sampling frequency is a factor in the calculation of water quality-based average monthly limits (AMLs), as described in Section 5.5.3 of the *Technical Support Document for Water Quality-based Toxics Control* (hereinafter TSD). The TSD states that "it is recommended that the actual planned frequency of monitoring normally be used to determine the value of n for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for n must be assumed for AML derivation purposes…. Under these circumstances, the statistical procedure should be employed using an assumed number of samples of at least four for the AML derivation."

As shown in Tables B-9 and B-10 of the 2016 Fact Sheet, in all cases, a frequency of four samples per month were assumed for the calculation of AMLs for the revised draft permit. However, as explained in the response to comment #2-42, the EPA has changed the number of samples used to calculate the AMLs for WET, for Outfall 002, from 4 to 1.

In addition, the permit includes language to ensure that the sampling is representative, specifically, Part I.B of the permit states, in relevant part, that "the permittee must comply with the effluent limits in the tables at all times unless otherwise indicated, regardless of the frequency of monitoring or reporting required by other provisions of this permit." Part III.A requires representative sampling and requires the collection of "additional samples at the appropriate outfall whenever any discharge occurs that may reasonably be expected to cause or contribute to a violation that is unlikely to be detected by a routine sample." Also, accelerated testing (4 bi-weekly tests) must be performed WET results above the trigger values listed in Table 5 of the permit.

Reductions in monitoring frequency for limited parameters relative to the prior permit are discussed in the 2016 fact sheet at Pages 17-18 and are consistent with the *Interim Guidance for Performance - Based Reductions of NPDES Permit Monitoring Frequencies* (EPA 1996). No changes have been made to the draft permit based on this comment.

Comment #1-9 (ICL)

The EPA needs to make it very clear that violations revealed via samples taken monthly or quarterly will be considered as indicative of violations during the entire period of time between the prior sample and the sample that demonstrated a violation.

Response #1-9

Consistent with 40 CFR 122.45(d)(1), the numeric effluent limits in the permit are stated as maximum daily and average monthly discharge limitations. The "average monthly discharge limitation" is defined as "the highest allowable average of 'daily discharges' over a calendar month, calculated as the sum of all 'daily discharges' **measured during a calendar month** divided by the number of 'daily discharges' **measured during that month**" (emphasis added). See the permit at Section VI and 40 CFR 122.2. Thus, compliance with an average monthly limit for a given month will be based solely on samples taken during that month, even if sampling occurs less frequently than once per month. The fact that there may be other months during which no samples are taken is not considered when determining compliance with an average monthly limit. If only one sample is taken during that month, then compliance with all effluent limits applicable during that month will be evaluated based on that single sample.

It should be noted that the only parameter with effluent limits, which is monitored less frequently than once per month, is chronic WET. Any violation of an effluent limit for chronic WET would trigger accelerated testing over an 8-week period, which may result in additional months with WET results which could be compared to effluent limits.

In general, the EPA has discretion to establish appropriate civil penalties for violations of effluent limits and other Clean Water Act violations. However, there are statutory maximum penalties, as stated in Part IV.B of the draft permit. As shown in Attachment 1 to the EPA's *Interim Clean Water Act Settlement Penalty Policy* (EPA 1995), the maximum penalty for a violation of an average monthly limit is based on the number of days in the month, less any days during that month when no discharges occurred. For example, the maximum penalty for a violation of an average monthly limit in January, if the facility discharged every day in January, would be the maximum penalty per violation per day, multiplied by 31 days.[2]

Comment #1-10 (ICL)

As noted previously in our prior comments, we believe that the agencies have inappropriately located outfall 002 at Jordan Creek instead of at Pinyon Creek. As a result, DEQ needs to recalculate the stream flow in Pinyon Creek that is available for use as a mixing zone.

[2] Note that the maximum penalties listed in Attachment 1 to the Interim Clean Water Act Settlement Penalty Policy have not been adjusted for consistency with the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461) or the Debt Collection Improvement Act (31 U.S.C. § 3701), whereas the maximum penalties in the permit have been adjusted.

Response #1-10

The location of and receiving water for outfall 002 is outside the scope of the reopened public comment period. However, ICL made the same comment on the 2015 draft permit. See the response to Comment #2-1.

Comment #1-11 (Hecla)

EPA states in the Fact Sheet (pg. 21, VIII.C.) that "Sections III, IV, and V of the draft permit contain standard regulatory language that must be included in all NPDES permits. Because they are regulations, they cannot be challenged in the context of an NPDES permit action." In many instances EPA has changed the regulatory language to impose additional obligations on the permittee not authorized by the federal regulations. EPA must either cite the federal regulatory language directly as it appears in the regulation (a change in the language changes the meaning) or clearly indicate where the regulatory citation is not verbatim and the reason for change, while clearly indicating that these changes are also 'out for comment'.

Response #1-11

The sentence "Because they are regulations, they cannot be challenged in the context of an NPDES permit action" is not part of the revised Fact Sheet, but was part of the fact sheet for the 2015 draft permit. Hecla made the same comment on the 2015 draft permit. See the response to Comment #2-10.

Except as it relates to Part III.B of the revised draft permit, this comment is beyond the scope of the reopened public comment period. The proposed changes to Part III.B were explained in the 2016 fact sheet, which stated, "The EPA proposes to revise Part III.B of the draft permit to require electronic reporting in NetDMR by December 21, 2016, consistent with the final NPDES Electronic Reporting Rule (80 FR 64097)." No changes were made to that section based on this comment.

Comment #1-12 (Hecla)

I.A Discharge Authorization – Yankee Fork Creek is not the USGS designation for the Outfall 003 location. USGS designation is Yankee Fork Salmon River and is commonly called just Yankee Fork. Hecla requests "Yankee Fork Creek" be changed to "Yankee Fork" in all locations of the permit and Fact Sheet

Response #1-12

The name of the receiving water for Outfall 003 is outside the scope of the reopened public comment period. However, Hecla made the same comment on the 2015 draft permit. See the response to Comment #2-16.

Comment #1-13 (Hecla)

Cyanide WAD – Hecla requests that Cyanide WAD be removed from the permit as a monitored parameter. Cyanide has not been used on site for two decades. Further, cyanide degrades naturally in the environment and can occur in surface waters from other sources including forest fires. In addition, the draft permit Cyanide WAD MDL is not attainable by outside laboratories. Hecla operates an in-house lab for Cyanide WAD to analyze to 0.002 mg/L MDL. Outside labs do not analyze Cyanide WAD lower than 0.006 mg/L MDL. Hecla is interested in utilizing an outside laboratory to analyze Cyanide WAD reducing manpower, equipment and reagent cost it takes for operation of the in-house laboratory and to improve the QA/QC program. Historical data shows Cyanide WAD has decreased to below detection at the outfall and in receiving streams.

Response #1-13

In the draft permits, effluent limits had been proposed for cyanide at outfall 002. Thus, it was necessary to monitor for cyanide at outfall 002. Although the EPA determined that the discharge from outfall 003 did not have the reasonable potential to cause or contribute to excursions above water quality criteria for cyanide in Yankee Fork Creek, the EPA proposed monitoring for cyanide at outfall 003 because historic discharges from outfall 003 have exceeded the chronic cyanide criterion at the end of pipe (see the 2016 fact sheet at Table B-8).

The EPA has reviewed effluent data for cyanide from April 2009 through December 2016 (221 results). The EPA has determined that, based on these effluent data, the discharge from outfall 002 does not have the reasonable potential to cause or contribute to excursions above water quality criteria for cyanide in Jordan Creek. The reasonable potential analysis for cyanide in the 2016 fact sheet had used data from January 2008 through July 2014. In that data set, the maximum concentration of 10 µg/L was observed in 2008. The maximum effluent cyanide concentration observed from April 2009 through December 2016 was 6 µg/L. The revised reasonable potential calculation for cyanide is shown in Appendix A.

It should be noted that, in the cyanide reasonable potential analysis in the 2016 fact sheet (Table B-7), the maximum concentration at the edge of the chronic mixing zone was 5.9 µg/L, which was close to the water quality criterion of 5.2 µg/L.

Although recent effluent data show that the discharge does not have the reasonable potential to cause or contribute to excursions above water quality criteria for cyanide, the EPA does not agree that cyanide should not be monitored. The maximum concentrations of cyanide for both outfalls remain greater than the chronic water quality criterion for cyanide (5.2 µg/L). Thus, the EPA believes it is necessary to continue to monitor for cyanide in the effluent from both outfalls.

Because recent effluent data show relatively low concentrations of cyanide, the EPA has changed the effluent monitoring frequency for cyanide from monthly, as proposed in the revised draft permit, to four times per year during April, June, August and October.

Regarding the required analytical sensitivity for cyanide, one of the non-discretionary terms and conditions of NOAA Fisheries' Biological Opinion for the reissuance of this permit is that cyanide continue to be monitored with a method detection limit no greater than 2 µg/L. Therefore, the EPA cannot change the required analytical sensitivity for cyanide as requested by the commenter.

In sum, the EPA has made the following changes to the permit: (1) removal of cyanide effluent limits for Outfall 002 and (2) change in the effluent monitoring frequency for cyanide.

Comment #1-14 (Hecla)

"Floating, suspended or submerged matter" is not defined in Idaho water quality rules and is vague and subjective. The Grouse Creek site has not seen this parameter in prior permits and has no place in any table of "Effluent Limitations and Monitoring Requirements". This term should be removed from the tables.

Response #1-14

The visual monitoring and narrative effluent limit for floating, suspended or submerged matter is outside the scope of the reopened public comment period. However, Hecla made the same comment on the 2015 draft permit. See the response to Comment #2-19.

Comment #1-15 (Hecla)

Monitoring for Conductivity and Dissolved Organic Carbon should be removed. IDEQ is currently in negotiated rulemaking activities for new Copper criteria using the Biotic Ligand Model (BLM). This rulemaking has not been finalized and Hecla should not have the sampling and cost burden before it is a rule in Idaho water quality standards. Further, EPA has published guidance on default values for 'missing parameters' associated with the BLM and it must remain at the discretion of the permittee as an option to monitor for site-specific values to support the BLM outside of permit conditions.

Response #1-15

As explained in the 2016 fact sheet at Page 19, effluent and receiving water monitoring for conductivity and dissolved organic carbon (in addition to pH, temperature and hardness) was proposed in the draft permit so that, when the State of Idaho adopts water quality criteria for copper based on the biotic ligand model (BLM), water quality criteria for copper can be evaluated.

The State of Idaho has adopted water quality criteria for copper based on the BLM. The rule became effective under State law on March 28, 2018. The EPA believes it is necessary to collect effluent and receiving water data for BLM input parameters so that, when the permit is reissued, the permitting authority can calculate site-specific values for copper criteria and, in turn, perform reasonable potential and effluent limit calculations.

Comment #1-16 (Hecla)

Aluminum concentrations that have been detected are below any applicable Idaho criteria. Simply having a detection is not sufficient reason to include a monitoring requirement. Hecla requests removal of the monitoring requirement for aluminum.

Response #1-16

While the State of Idaho has not established a numeric water quality criterion for aluminum, as discussed on Pages 32-33 of the BE, aluminum can be toxic to fish and other aquatic life (EPA 2017). As such, effluent limits for aluminum could be established based on Idaho's narrative water quality criterion for toxic substances (IDAPA 58.01.02.200) and NPDES regulations requiring limits based on narrative criteria (40 CFR 122.44(d)(1)(vi)). As stated in the Biological Evaluation (BE) on Pages 41 and 42, "seven aluminum samples are available for the Grouse Creek Mine effluent (outfalls 002 and 003), taken between November 2000 and June 2010. The average concentration is 393 µg/L, with a standard deviation of 268 µg/L, and the maximum was 880 µg/L." Since aluminum is present in the effluent, monitoring for aluminum is necessary to determine if the discharges of aluminum have the reasonable potential to cause or contribute to violations of Idaho's narrative water quality criterion for toxic substances. However, the monitoring frequency for aluminum was reduced from monthly to four times per year in the revised draft permit. See the 2016 Fact Sheet at Page 18 and the response to comment #2-20.

Comment #1-17 (Hecla)

Arsenic monitoring was removed from the current NPDES permit based on historically low concentrations in effluent from Outfall 002. Based on this previous determination and the fact that only one detection was made in effluent from Outfall 002 is sufficient cause to remove arsenic monitoring from this permit. Further, historic instream monitoring has shown compliance with applicable arsenic criteria.

Response #1-17

The EPA agrees that the discharges of total arsenic have been below Idaho's aquatic life water quality criteria arsenic. However, human health criteria for arsenic are also applicable to the receiving waters and are more stringent than the aquatic life criteria. Therefore, it is reasonable to continue monitoring the effluent from both outfall 002 and 003 for arsenic, so that a reasonable potential analysis for both human health and aquatic life criteria can be performed when the permit is reissued.

Comment #1-18 (Hecla)

Temperature reporting has been changed from daily to continuous recording. Hecla has recorded daily temperature of this effluent for more than 15 years demonstrating slow trending temperatures over daily readings. Continuous recording of this slow trending temperature change should be removed from this table.

Response #1-18

As explained in the 2016 fact sheet at Page 20, continuous monitoring for temperature is appropriate because Idaho's water quality criteria for temperature include both an average and a maximum temperature, and continuous monitoring will allow for a comparison of the temperature data against both the average and maximum criteria. No changes were made to the permit.

Comment #1-19 (Hecla)

Note 4 in Tables 1 and 2 requires specific temperature recording devices that Hecla does not currently operate. Should Hecla be required to install continuous temperature monitoring equipment, a compliance schedule of 180 days would be required for investigation and evaluation of equipment in addition to installation and debugging of hardware.

Response #1-19

The EPA agrees that it is reasonable to allow 180 days to begin continuous temperature monitoring and has made this change to the final permit. In the interim, daily temperature monitoring, using grab samples, is required. Daily monitoring for temperature is not burdensome because the prior permit already requires daily grab samples for pH, and the permittee can simply analyze the same daily grab samples for temperature in addition to pH. Therefore, the EPA has changed the permit to reflect that continuous temperature monitoring shall begin 180 days after the effective date of the permit.

Comment #1-20 (Hecla)

Note 4 in Tables 1 and 2 requires an extensive evaluation of the continuous data that is not necessary. Hecla's historical daily recording of temperature has shown a slow trend for temperature change over daily recordings and the data evaluation of the 'seven-day running average of the daily instantaneous maximum' is not necessary and should be removed from the table.

Response #1-20

The permit requires the permittee to report the monthly instantaneous maximum and maximum daily average temperatures because the Idaho water quality criteria for temperature are expressed as maximum allowable instantaneous and daily average temperatures. The seven-day running average of the daily instantaneous maximum temperatures is included in the permit because this is the recommended metric for temperature criteria in the *EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards* (EPA 2003). No changes were made to the permit.

Comment #1-21 (Hecla)

Note 5 in Tables 1 and 2 requires device manufacturer software to generate reports in a specific format for EPA and IDEQ. Hecla will need to evaluate the software and its integration into the EDMS data management software already in use. Hecla requests that the requirement for monitoring results and placement logs be submitted annually to IDEQ is changed to March 31st instead of January 31st of each year.

Response #1-21

The EPA agrees that it is reasonable to allow the electronic file of temperature monitoring data and the placement log to be submitted on March 31st instead of January 31st and has changed the permit accordingly.

Comment #1-22 (Hecla)

Hecla has reviewed Table 8 and Table 9 of the Fact Sheet – Reasonable Potential Calculations for Outfalls. EPA has determined that effluent limits are only required at Outfall 002 for WET, Chronic in both flow tiers and Cyanide WAD for Jordan Creek flow less than 30 CFS. Since there is no reasonable potential, Hecla requests all other effluent limits be removed from Table 1 for Outfall 002. The same reasonable potential calculations determined that none of these parameters for Outfall 003 require effluent limits and therefore all effluent limits should be removed from Table 2 for Outfall 003.

Response #1-22

There is no "Table 8" or "Table 9" in the 2016 revised fact sheet. The reasonable potential calculations are summarized in Tables B-7 and B-8 of the revised fact sheet.

Effluent limits for WET and cyanide were proposed in the revised draft permit, for outfall 002, based on the calculations shown in Table B-7. However, as explained in the response to comment #1-13, the EPA has determined that the discharge does not have the reasonable potential to cause or contribute to excursions above water quality standards for cyanide, and the proposed effluent limits for cyanide, for outfall 002, were removed from the final permit.

Table B-8 of the revised fact sheet shows that the discharge to outfall 003 has the reasonable potential to cause or contribute to excursions above water quality standards for WET, for all three proposed flow tiers. Thus, effluent limits for WET were proposed in the revised draft permit, for outfall 003.

As explained in the 2015 fact sheet in Table B-1, on Page B-1, technology-based effluent limits have been established for cadmium, copper, lead, mercury, zinc, TSS and pH. As stated on Pages B-1 – B-2 of the 2015 Fact Sheet, "EPA has determined that the technology-based TSS effluent limitations are stringent enough to protect water quality in the receiving waters at all times…. For all of the other parameters for which technology-based effluent limits have been established, the EPA determined that

the technology-based effluent limits are not stringent enough to ensure compliance with water quality standards in the receiving waters. Therefore, the EPA is required by Section 301(b)(1)(C) of the Clean Water Act to establish "more stringent limitation(s)…necessary to meet water quality standards." As such, the remaining effluent limits applicable to Outfalls 002 and 003 must remain in the permit. No changes were made based on this comment.

Comment #1-23 (Hecla)

Hecla has completed extensive bioassessment studies in Jordan Creek and the Yankee Fork historically and those studies show no impacts to the existing instream biological community. There will be no expected changes to effluent sources over the term of the renewed permit. Hecla believes WET testing and WET permit limits are unnecessary and should be removed from this permit. Additional comments from GEI Consultants regarding WET Testing requirements are attached as part of Hecla's comments.

While the most recent reasonable potential analysis has indicated that WET limits are warranted for outfalls 002 and 003, the historical biomonitoring data have indicated the discharges are not negatively impacting the instream aquatic life. According to the IDEQ 401 certification dated November 9, 2015, "Historical bioassessment studies show a healthy aquatic and biological community in the receiving waters." As previously discussed, the bioassessment data were taken into account in the biological evaluation and should also be taken into account in the NPDES permit. We suggest that the stream biomonitoring requirements currently included in the permit be used in lieu of chronic WET NPDES permit limits to evaluate the impact of mixtures on the receiving waters. As instream biomonitoring is a more accurate representation of what is actually occurring instream.

Hecla has completed more than 15 years of bioassessment evaluations in both Jordan Creek and the Yankee Fork that demonstrate a healthy biological community including aquatic species downstream of both outfalls. Hecla requests that EPA either eliminates WET testing requirements or re-evaluate calculation of WET limits for both outfalls and allow permit limits not more stringent than those in the current NPDES permit and Administrative Order on Consent (AOC). Should WET limits be required, Hecla requests that they be 'monitor and report only' for the duration of this permit renewal.

Response #1-23

Federal regulations state that, when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative criterion for toxicity, the permit must contain effluent limits for whole effluent toxicity (40 CFR 122.44(d)(1)(v)). As shown in the 2016 fact sheet at Tables B-7 and B-8, the EPA determined, using the procedures in Section 3.3 of the TSD, that the discharges from outfalls 002 and 003 have the reasonable potential to cause or contribute to excursions above water quality standards for toxicity. As stated in the 2016 fact sheet at Page 13:

> Limits were established for WET based on state water quality standards that require surface waters to be free from toxic substances in concentrations that impair designated or existing beneficial uses of the receiving water (IDAPA 58.01.02.200.02). This narrative criterion was interpreted using recommendations in the EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD), section 2.3.3.

It is not necessary for the permitting authority to demonstrate that impacts to instream aquatic life have occurred in order to establish effluent limits for WET. The permitting authority need only demonstrate

that a discharge has the "reasonable potential" to cause or contribute to excursions above water quality standards for WET, and the EPA has done so in this case.

The WET effluent limits were calculated based on the recommended toxicity values in Section 2.3.3 of the TSD and the dilution factors associated with the WET mixing zones authorized by IDEQ. This resulted in WET effluent limits that were more stringent than those in the prior NPDES permit and AOC. As explained in the response to comment #1-24, below, in the final permit, the EPA has made changes to the final permit, which resulted in WET limits that are less stringent than those in the revised draft permit, in some cases.

Comment #1-24 (Hecla)

New WET limits at Outfalls 002 and 003 have been significantly reduced from the current permit and AOC requirements. GEI Consultants have provided additional comments for this draft permit and Hecla has included the GEI Consultants comments which were provided for the 2015 draft permit in which they provided a detailed evaluation of the WET limit calculations.

Hecla has also requested that GEI provide an evaluation of statistical probability for the Grouse Creek site to pass WET at the proposed limits. Results of that evaluation are included in GEI Memo – Evaluation of WET Parameters in Draft NPDES Permit, 2016 which is attached. EPA has proposed limits that may result in a 23% failure rate at Outfall 002 and a 28% failure rate at Outfall 003 for WET. WET testing and WET limits are not appropriate given the site-specific biomonitoring conducted for more than 15 years which clearly shows no adverse effects or impacts from this closed and reclaimed site.

Response #1-24

In general, the WET limits are based on the recommendations in Section 2.3.3 of the TSD and the mixing zones authorized by IDEQ. Idaho's mixing zone policy states that "whether a mixing zone is authorized, and its size, configuration and location, is determined by the Department on a case-by-case basis" (IDAPA 58.01.02.060.01). Thus, the authority to authorize mixing zones rests with IDEQ. The EPA cannot establish less-stringent effluent limits for WET unless IDEQ authorizes larger mixing zones for WET. The EPA has addressed the comment in two ways.

First, the EPA has changed the flow tiers for WET for outfall 003. The highest flow tier is now ≥ 80 CFS in Yankee Fork Creek, instead of ≥ 45 CFS. The higher stream flow results in additional dilution, which, in turn, results in less-stringent effluent limits for WET, for the highest flow tier.

The EPA has also changed the number of samples used to calculate the average monthly limits for WET for outfall 002 from 4 to 1, as explained in the response to comment #2-42. This results in an increase in the average monthly limit for WET, for outfall 002, from 3.3 TU_c in the revised draft permit to 4.6 TU_c in the final permit.

Comment #1-25 (Hecla)

The Grouse Creek site has already completed the most sensitive species testing requirement for WET for the current permit and believes that performing those tests again is not justified. Effluent water quality from Grouse Creek's water treatment facility has steadily improved and annual instream bioassessment monitoring has determined no effects to the biological communities in either Jordan Creek or the Yankee Fork. Costs of testing and shipping the necessary effluent and receiving water samples is a burden to Grouse Creek because these sensitive species tests have already been completed. Changes to

the species used for WET will impact continuity with evaluation of future test results and will lose the value of identification of longer term trends without any greater protection of the environment.

Response #1-25

The determination of the most sensitive species is outside the scope of the reopened public comment period. However, Hecla made the same comment on the 2015 draft permit. See the response to Comment #2-28.

Comment #1-26 (Hecla)

Additional comments from GEI Consultants (GEI) regarding WET Testing requirements are attached as part of Hecla's comments. This GEI Technical Memorandum (July 10, 2015), submitted as part of Hecla's comments to the 2015 draft permit, details WET limit calculations considering actual number of sampling events each year(n) versus EPA's default values. EPA's 'Technical Support Document for Water Quality Based Toxics Control', March 1991 contains guidance for EPA permit writers when they are determining water quality based limits in NPDES permits. Section 5.5 (pages 107 – 110) outlines assumptions that are recommended by EPA. These assumptions are not required when existing data is available to evaluate when developing effluent limits. Hecla believes EPA has used a 'default' value for the number of samples used to calculate WET limits where the actual number of samples is allowed to calculate WET limits. Default values typically apply to limits calculated at 'end-of-pipe' but WET limits for Grouse Creek include an Idaho authorized mixing zone and the actual number of samples is appropriate for the calculations. Hecla has previously submitted to EPA and IDEQ historical biological evaluations demonstrating no adverse effects to the biological communities in Jordan Creek and the Yankee Fork under the current WET limits for discharge. EPA should also consider this data in the development of new WET limits. The GEI comment #5 should be addressed and an actual number of samples (quarterly n=0.33) along with 100% mixing zones, should be used to recalculate WET limits for both outfalls. See GEI Technical Memorandum (July 10, 2015) 'Wet Testing – #5. Hecla requests EPA to respond to all of GEI comments from their Technical Memorandum with the same attention as Hecla's comments.

Response #1-26

Hecla submitted the July 10, 2015 technical memorandum with their comments on the 2015 draft permit. The EPA has responded to the comments provided in this memorandum. See the responses to comments 2-40 through 2-46.

Comment #1-27 (Hecla)

The mixing zone allowance of 100 percent for WET which was previously specified in the Idaho Department of Environmental Quality's (IDEQ) April 13, 2015 Addendum to the draft §401 Water Quality Certification for the draft NPDES Permit #ID-002646-8 for Hecla Mining Company, Grouse Creek Unit, was reduced in the revised draft permit to 50% for Outfall 002 and 75% for Outfall 003. This change was made based on the revised IDEQ 401 Certification where IDEQ "determined that WET limits resulting from smaller mixing zones are achievable and are therefore appropriate given the siting, technological and managerial options available to Hecla". While the reduction in the mixing zone does not result in a significant difference in the permit limits for Outfall 002, it does result in a difference to the Outfall 003 permit limits. The limits based on the 100% mixing zone allowance would be more achievable; therefore, we request revising the WET mixing zone allowance to 100% for both Outfalls.

Response #1-27

As explained in the response to comment #1-24, the authority to authorize mixing zones rests with IDEQ. As explained in the response to comment #1-4, IDEQ determined that limits resulting from the smaller mixing zones are achievable, and therefore larger mixing zones are not necessary.

Comment #1-28 (Hecla)

I.D.8 Table 4 and Table 5 – Continuous temperature monitoring requirements have been added for surface water above and below each outfall from May 1st through October 31st. The Grouse Creek site is a located where receiving water stream flows are significantly impacted by climate conditions for temperature and snowmelt. High flow stream conditions historically occur at the end of May or early June. Temperatures during these high flow stream conditions are typically less than 5 °C continuing into the early summer. Installation of continuous temperature equipment when snow and ice conditions may still be prevalent at the site is a safety and equipment risk. Installation of continuous temperature monitoring equipment during quickly changing high flow conditions will pose an additional risk for the staff. Agency interest and published documentation concerning high temperature greater than 9 °C for the aquatic community is the parameter of concern. Hecla request that if continuous monitoring of temperature is required that the dates change to July 1st through September 30th or whenever stream temperature drops below 12 °C. The September date will provide an increased safety factor to remove and store equipment for another season.

Response #1-28

The EPA has reviewed available temperature data for Jordan Creek and Yankee Fork Creek to determine if the season during which continuous temperature monitoring is required could be shortened while still yielding useful data. As explained below, the EPA has determined that the season for continuous temperature monitoring can be shortened for Jordan Creek, but not for Yankee Fork Creek.

As explained in the 2016 fact sheet at Page B-3, Yankee Fork Creek has a designated beneficial use of salmonid spawning, whereas Jordan Creek is not designated for specific uses and is therefore protected for cold water aquatic life, but not salmonid spawning. Waters designated for salmonid spawning are subject to more stringent water quality criteria for temperature, as shown in Table B-3 of the 2016 fact sheet. The more stringent temperature criterion for the salmonid spawning use apply "in areas used for spawning and during the time spawning and incubation occurs" (IDAPA 58.01.02.250.02.f).

The 2002 permit required daily temperature monitoring in Jordan Creek from June 1st through October 1st. The monthly maximum temperatures observed in Jordan Creek at station S-3, upstream from outfall 002 from January 2008 through October 2016, are listed in Table 1, below. If a month is not listed, that means there are no data for that month.

Table 1: Monthly Temperatures at Station S-3

Month	Max of Temperature, Water (°C)	Count of Temperature, Water (°C)
Jan	3.3	3
Apr	7.6	10
May	6.8	15
Jun	11.5	255
Jul	13.5	272

Aug	15.1	278
Sep	12.3	240
Oct	8.7	14
Nov	2.1	1

As shown in Table 1, in Jordan Creek, the warmest temperatures are observed during July, August, and September. Even during these months, the temperature of Jordan Creek has not exceeded the most stringent applicable temperature criterion of 19 °C. Therefore, for Jordan Creek, the EPA agrees with the commenter that continuous monitoring for temperature may be required only from July 1st – September 30th.

Much less temperature data are available for Yankee Fork Creek. Available data for stations S-9 and S-10 are summarized in Table 2 and Table 3.

Table 2: Monthly Temperatures at Station S-9

Row Labels	Max of Temperature, Water (°C)	Count of Temperature, Water (°C)
Mar	10.2	2
Apr	5.2	9
Jun	8.8	9
Jul	5.6	2
Aug	12.5	9
Oct	8.8	5
Nov	2	1
Dec	2.6	1

Table 3: Monthly Temperatures at Station S-10

Month	Max of Temperature, Water (°C)	Count of Temperature, Water (°C)
Feb	5.8	1
Mar	11.2	2
Apr	12.5	6
May	12	1
Jun	12.8	4
Jul	6.4	3
Aug	8.3	2
Sep	7.3	1
Oct	9.8	1
Dec	5.4	1

As shown in Table 2 and Table 3, based on the limited data available, temperatures in Yankee Fork Creek have exceeded the most stringent temperature criterion of 9 °C during March, April, May, June, August, and October. Therefore, the EPA has retained the proposed season for continuous temperature monitoring for stations S-9 and S-14 (May 1st through October 31st).

The EPA has also required grab samples to be collected for temperature during April, June and October in Jordan Creek (stations S-3 and S-4) and during April in Yankee Fork Creek (stations S-9 and S-14), since surface water chemistry sampling is required for other parameters during April, June, August and October.

In sum, the EPA has made the following changes to the final permit: For Jordan Creek, continuous temperature monitoring is required only from July 1st through September 30th, and grab samples for temperature are required during April, June and October in Jordan Creek (stations S-3 and S-4) and during April in Yankee Fork Creek (stations S-9 and S-14).

Comment #1-29 (Hecla)

I.D.9.a – Hecla believes that surface water monitoring is not part of DMR reporting and has not been in the past. Hecla requests clarification of the source of this requirement. Hecla requests this be removed from the permit.

Response #1-29

Reporting of surface water monitoring data on DMRs is outside the scope of the reopened public comment period. However, Hecla made the same comment on the 2015 draft permit. See the response to Comment #2-34.

Comment #1-30 (Hecla)

Hecla has contracted with GEI Consultants (GEI) to complete bioassessment evaluations for Yankee Fork and Jordan Creek above and below each out fall for more than 15 years. GEI has reviewed the new addition of stream biomonitoring requirements for this 2016 draft permit and compared it to current biomonitoring evaluations. Their comments are included in GEI Technical Memorandum, 2016 included with these comments and incorporated by reference. There are significant differences between current and proposed biomonitoring which are unlikely to provide more protection to the biological communities in this area but will significantly decrease Hecla's ability to compare future results with historical results. Hecla requests the Stream Biomonitoring be revised to more closely mirror current bioassessment evaluations.

Response #1-30

The EPA has responded to the comments regarding the biomonitoring requirements in the revised draft permit that were made by GEI on Hecla's behalf. See the responses to comments 1-35 through 1-43.

Comment #1-31 (Hecla)

GEI has determined through yearly bioassessment activities that sculpin density is greater downstream of Outfall 002 and Outfall 003 than the reference sites above the outfalls. The referenced (and attached) report titled "Freshwater Sculpins: Phylogenetics to Ecology", Transactions of the American Fisheries Society 136:1736-1741, 2007 discusses the advantages of monitoring sculpin for toxics in relatively small geographic areas as those just downstream from each outfall. This reference along with historical monitoring demonstrates the health of biological communities below each outfall at Grouse Creek.

Response #1-31

Thank you for your comment.

Comment #1-32 (Hecla)

Part III.B, Reporting of Monitoring Results, is unclear what results will be submitted electronically to NetDMR. The Grouse Creek site's DMR reports are generated from EDMS Data Management Systems software. Hecla requests a change to 1 year before DMRs are regularly submitted to NetDMR to develop the required format and clarification of 'additional monitoring' that is reported. Hecla is aware of the

new Federal requirements for implementation of reporting to NetDMR but also understands that a compliance schedule to lessen the impact of reporting incorrect data or issues with the reporting format is allowed. Further, it is our understanding that the regulatory requirement to provide DMRs falls on EPA.

Response #1-32

As stated in the 2016 fact sheet at Page 23, "the EPA proposes to revise Part III.B of the draft permit to require electronic reporting in NetDMR by December 21, 2016, consistent with the final NPDES Electronic Reporting Rule (80 FR 64097)." December 21, 2016 was the deadline for submitting DMRs electronically (40 CFR 122.41(l)(4)(i)).

The final permit includes additional language regarding NetDMR reporting. Specifically, the final permit states, in Part III.B.4:

> *Submittal of Reports as NetDMR Attachments. Unless otherwise specified in this permit, the permittee may submit all reports to EPA and IDEQ as NetDMR attachments rather than as hard copies. The file name of the electronic attachment must be as follows: YYYY_MM_DD_ID0026468_Report Type Name_Identifying Code, where YYYY_MM_DD is the date that the permittee submits the attachment.*

This paragraph gives the permittee the option of submitting reports other than DMRs as attachments to DMRs, but such reports may also be submitted as hard copies.

If the permittee wishes to delay electronic reporting for DMRs, the permittee may apply for a temporary waiver from electronic reporting pursuant to 40 CFR 127.15. As explained above, changes were made to the final permit as a result of this comment.

Comment #1-33 (Hecla)

EPA has integrated a Biological Evaluation (BE) based on biological opinions by both USFWS (2015) and NOAA Fisheries (2014) to this proposed NPDES permit. Hecla has completed a short investigation (constrained by the time frame of the comment submittal requirements) and has not discovered other permits in EPA Region 10 that have this requirement. It is understood that consultation with other Agencies is common but full integration into the text of the permit is not common. It is not clear that EPA can legally take a generic statewide BO and include recommendations from that statewide BO into specific BE obligations incorporated into a site-specific permit for Grouse Creek, or for that matter, whether or not EPA was under any legal obligation to obtain a BO for approving Idaho statewide water quality standards in the first instance. It appears this process ignores site-specific BOs or informal consultations that force the agencies to consider the extensive site-specific water quality monitoring conducted for over two decades at Grouse Creek.

Response #1-33

The BE and the 2016 fact sheet for this permit reference the USFWS and NOAA Fisheries biological opinions (BOs) on the EPA's approval of Idaho's water quality criteria. However, the EPA has not integrated any BE into the permit.

The only permit conditions in the draft permit that are based in whole or part upon the USFWS and NOAA Fisheries biological opinions (BOs) on the EPA's approval of Idaho's water quality criteria are the

stream biomonitoring conditions in Part I.E of the permit. As discussed in the 2016 fact sheet at Page 22, the NOAA Fisheries BO on the effects of approving Idaho's water quality criteria for toxic substances include non-discretionary reasonable and prudent measures (RPMs). To implement RPM #1 (minimize the effects of toxicity resulting from simultaneous exposure to mixtures), biomonitoring shall be included in the permit provisions if discharges and permit limits are authorized such that > 1 cumulative criterion units would be allowed in receiving waters. As explained in Page 93 of the June 2017 revised BE, > 1 cumulative criterion units have been authorized for both outfalls and all flow tiers. Therefore, for this permit, biomonitoring is required under RPM #1. In addition, to implement RPM #5, (monitoring and reporting) EPA shall require biomonitoring. See the NOAA Fisheries BO at Section 2.9.3.2.

Even if biomonitoring were not required under the terms and conditions of the NOAA Fisheries BO, the EPA would nonetheless be required to include biomonitoring requirements in the permit, because biomonitoring was required in the State of Idaho's 401 certification of the permit, as explained in the 2016 fact sheet at Page 22. The EPA must incorporate requirements specified in States' certifications of NPDES permits (40 CFR 124.53(e), 124,55(a)(2)). See also CWA Section 401(d).

The commenter questioned whether the EPA is legally obligated to obtain a BO for approving Idaho statewide water quality standards. Since the EPA's approval of aquatic life water quality standards (WQS) is a federal action, the EPA must comply with the consultation requirement of Section 7(a)(2) of the Endangered Species Act (ESA). Under Section 7(a)(2) of the ESA, 16 U.S.C. §1536, the EPA has the obligation to ensure that its approval of the water quality standards will not jeopardize the continued existence of threatened and endangered species and their critical habitat.

Separately from the consultation on Idaho's water quality standards, the EPA has also completed formal consultation with USFWS and NOAA Fisheries on the issuance of this permit. Non-discretionary terms and conditions from the Services' Biological Opinions on the reissuance of this permit have been incorporated into the final permit, as described under "Other Changes to the Permit" in this Response to Comments.

Comment #1-34 (Hecla)

3) On page 33, Section V., "Whole Effluent Toxicity (WET)" is identified as one of the "PARAMETERS OF CONCERN". WET testing is not necessary where real world scientific data is available. For over two decades real world scientific water quality data has been gathered – data which is being ignored by EPA in their BE, which utilizes statewide generic BOs for Idaho water quality standards by both USFWS (2015) and NOAA Fisheries (2014). These BOs provide no real world factual evidence that Idaho's past or current water quality standards failed to protect endangered species and represent merely desktop hypothetical scenarios. WET testing is nothing more than a laboratory surrogate based on hypothetical situations and laboratory organisms which do not or even cannot survive in real world conditions. WET testing can only be used when real world science is not available, which is most certainly not the case for Grouse Creek. Idaho Code is clear that rules must be based upon best science available as follows:

"39-107D. RULES OF DEPARTMENT OR BOARD.

…..

(2) To the degree that a department action is based on science, in proposing any rule or portions of any rule subject to this section, the department shall utilize:

(a) The best available peer reviewed science and supporting studies conducted in accordance with sound and objective scientific practices; and

(b) Data collected by accepted methods or best available methods if the reliability of the method and the nature of the decision justify use of the data."

Further, Idaho rules, approved by EPA, state the following:

"58.01.02.210.05. Development of Toxic Substance Criteria. (4-5-00)

a. Aquatic Life Communities Criteria. Numeric criteria for the protection of aquatic life uses not identified in these rules for toxic substances, may be derived by the Department from the following information: (4-5-00)

b.

i. Site-specific criteria developed pursuant to Section 275; (4-5-00)

ii. Effluent biomonitoring, toxicity testing and whole-effluent toxicity determinations; (4-5-00)

iii. The most recent recommended criteria defined in EPA's Aquatic Toxicity Information Retrieval (ACQUIRE) database. When using EPA recommended criteria to derive water quality criteria to protect aquatic life uses, the lowest observed effect concentrations (LOECs) shall be considered; or (4-5-00)

iv. Scientific studies including, but not limited to, instream benthic assessment or rapid bioassessment. (4-5-00)" (emphasis added)

Idaho law mandates best available science, thus the rules must defer to the law where such scientific data exists. WET testing, in such cases as Grouse Creek where extensive real world data exists, should not be a permit condition at all.

Response #1-34

The language from the Idaho Code and Idaho Water Quality Standards quoted by the commenter is irrelevant to the question of whether WET testing and/or limits should be included in an NPDES permit.

Section 39-107D of the Idaho Code concerns rulemaking performed by IDEQ. The issuance of this permit by the EPA is therefore not subject to any requirements in Section 39-107D of the Idaho Code.

Section 210.05.a of the Idaho Water Quality Standards concerns the derivation of numeric water quality criteria for the protection of aquatic life uses by IDEQ. The establishment of numeric water quality criteria involve different factors than the derivation of effluent limits in a NPDES permit.

For permitting, federal regulations state that, when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative criterion within an applicable State water quality standard, the permit must contain effluent limits for whole effluent toxicity (40 CFR 122.44(d)(1)(v)). As explained on Page 13 of the 2016 fact sheet, the WET effluent limits were derived based upon Idaho's narrative toxic substances criterion (IDAPA 58.01.02.200.02) as interpreted using the recommendations set forth in EPA's TSD (Section 2.3.3).

In summary, the establishment of WET limits in this permit are not subject to the requirements of Section 210.05.a of the Idaho Water Quality Standards. No changes have been made to the permit.

Comment #1-35 (GEI for Hecla)

The plan proposed in the revised draft permit (as based on Appendix E in NOAA Fisheries 2014) does not clearly state whether fish population monitoring is to be conducted in Jordan Creek and the Yankee Fork. Instead, it states that benthic macroinvertebrates should be monitored "at a minimum", while fish populations must be monitored "to the extent practicable".

Fish population monitoring has been ongoing in Jordan Creek since 1997 (GEI 2016b), and we presume that it would continue under this plan as there are no reasons why it would not be practicable.

Threatened and endangered (T&E) fish species inhabit the Yankee Fork stream reaches in the vicinity of Outfall 003, including Chinook Salmon (Oncorhyncus tshawytscha), Bull Trout (Salvelinus confluentus), and summer Steelhead (O. mykiss). Based on this, limited electrofishing of two sites on the Yankee Fork to collect Mountain Whitefish (Prosopium williamsoni) tissues has been conducted annually as part of GEI's monitoring efforts for Hecla since 2003, but the more extensive electrofishing necessary to determine fish densities and other population characteristics has not been included or allowed in the collection permits to avoid potential injury to T&E species in the Yankee Fork. The terms and conditions attached to the 2015 federal collection permit for the Hecla sampling event cites that even walking in salmonid streams should be avoided when possible, especially in areas where listed salmonids are likely to spawn. We assume these concerns with electrofishing in streams with listed fish species would indicate that population monitoring in the Yankee Fork was not practicable and thus would not be required as part of the monitoring plan. We request that additional text be included in the permit to verify that our assumption is correct.

Response #1-35

The language in the revised draft permit stating that “fish communities must also be monitored to the extent practicable” was intended to be consistent with the language in the NOAA BO stating that “Fish communities shall also be monitored, to the extent such monitoring is not otherwise prohibited by regulation or policy.” The EPA is not aware of a reason why fish population monitoring would be prohibited in this case.

The final permit requires fish population monitoring once every five years, instead of annually. The final permit also requires that “Electrofishing by the permittee must be conducted consistent with the National Marine Fisheries Service’s *Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act* (June 2000) and Sections 3.3.13, 6.3, and Appendices G and I of IDEQ’s *Beneficial Use Reconnaissance Program Field Manual for Streams* (June 2016).” The permit also incorporates specific requirements regarding electrofishing from the terms and conditions in the BOs prepared by USFWS and NOAA Fisheries for the reissuance of this permit. Following the guidance in these documents, the terms and conditions from the BOs, as well as the reduced frequency, will mitigate the effects of electrofishing upon threatened and endangered fish species. In addition, the final permit allows for the use of suitable 3rd party fish population data.

The BE for the permit addresses the effects of biomonitoring upon T&E species. The BOs prepared by USFWS and NOAA Fisheries have authorized the incidental take of threatened and endangered fish

caused by the biomonitoring required by the permit. Therefore, the changes discussed above have been made in the final permit.

Comment #1-36 (GEI for Hecla)

The only other alternative that could be used to monitor the fish populations within the Yankee Fork would be use of snorkeling methods instead of electrofishing. Snorkeling at the Yankee Fork sites would provide a means of sampling fish populations to an extent while minimizing the potential threat to T&E fish species. We have some concerns with the practicality of use of this method and the data it would generate:

If snorkeling of the two sites on the Yankee Fork were required based on the biomonitoring plan in the revised permit, the costs of the annual sampling event would increase substantially from costs in previous years, as snorkeling would require additional staff and time to complete sampling.

Snorkeling generally underestimates density and does not provide data directly comparable to electrofishing data (Thurow 1994). Fish are more likely to be misidentified or not counted (or potentially counted more than once) during snorkeling when compared to electrofishing, as the fish are only observed and are not collected and examined as they are during electrofishing. Such bias is more prevalent if certain types of instream cover is abundant, smaller fish are abundant, or fish species that inhabit areas near the substrate are present. In addition, many of the metrics proposed to be calculated at each site (as included in Table 6 of the revised draft permit) could not be calculated precisely or at all using snorkeling methods.

Snorkeling surveys only provide data on the approximate lengths of each fish based on observations, but these survey methods do not allow for closer examination of each species or for measurements of fish lengths and weights. Without length and weight data, no condition factors could be calculated, and data on age classes and length-frequency analyses would only be estimates.

Table 6 includes calculation of the Index of Biotic Integrity (IBI) as a metric. The Stream Fish Index (SFI) is the index utilized in Idaho for small streams (Grafe et al. 2002; Mebane 2002a), and it is calculated each year for Jordan Creek based on the electrofishing data collected under the GEI monitoring plan. The River Fish Index (RFI) is the appropriate index for use in larger streams such as the Yankee Fork (RFI; Grafe et al 2002; Mebane 2002b); however, the RFI and its associated scoring criteria are intended for use with electrofishing data not snorkeling count data (Grafe et al. 2002). If snorkeling were considered the practical means of biomonitoring in the Yankee Fork, two of the component metrics in the RMI, the Catch Per Unit Effort (number of individuals/minutes electrofishing) and the percent of fish with deformities, eroded fins, lesions, or tumors (DELT anomalies), could not be calculated with any sort of accuracy based off of snorkeling count data. Other metrics could be calculated but would have the potential to be biased by observer error since they would not be based off measurements and identification of collected fish.

Response #1-36

The EPA agrees that electrofishing is preferable to snorkel counts. *IDEQ's Beneficial User Reconnaissance Program Field Manual for Streams* recommends that fish sampling be done using electrofishing (IDEQ 2016). The final permit requires fish biomonitoring to be done using electrofishing rather than snorkel counts.

The final permit requires the calculation of the Idaho Stream Fish Index (for both Jordan Creek and Yankee Fork Creek) instead of the Index of Biotic Integrity.

See also Response to Comment #1-35.

Comment #1-37 (GEI for Hecla)

Of the list of macroinvertebrate metrics to be calculated for the Jordan Creek and Yankee Fork sites in Table 6 of the revised draft permit, only the appropriate state multimetric index (the Stream Macroinvertebrate Index [SMI] or the River Macroinvertebrate Index [RMI]) and the component metrics for these indices are included in the GEI sampling plan that has been in place for the past sixteen years. Other metrics included in the long-term database since at least 2001 but not included in the biomonitoring plan in the revised draft permit are: macroinvertebrate densities, number of taxa, number of Ephemeroptera, Plecoptera, and Trichoptera (EPT) taxa, EPT index values, percent Ephemeroptera, and diversity values (GEI 2016a, b). These metrics characterize multiple aspects of the macroinvertebrate communities at each site but are not listed in Table 6. We ask that consideration be given to tailoring the future sampling plan to be consistent with the extensive macroinvertebrate sampling effort conducted to date to evaluate Jordan Creek and the Yankee Fork rather than utilizing the more generalized sampling plan presented in the NOAA Fisheries BO (2014) that was designed for use state-wide.

The current GEI sampling plan approach used in 2015 and previous years is focused on detecting any differences in metric values that could be related to the outfalls between upstream and downstream sites on Jordan Creek and the Yankee Fork. Comparisons are made between the upstream and downstream sites in the annual monitoring reports, and these reports include comparisons between sites for each year and on a long-term basis spanning the length of the study. While the metrics differ from those presented in Table 6, the goal of these comparisons is similar to the goal discussed above of the proposed monitoring plan in the permit.

In the Yankee Fork, the long-term database also includes data from years prior to the initiation of the discharge, allowing for comparison of macroinvertebrate metrics between pre- and post-discharge years. If different metrics are analyzed under the proposed future sampling plan, comparisons to pre-discharge years would either require that the data be re-analyzed to provide comparative data or, in the case of the proposed metrics based on biomass, comparisons would not be possible.

The long-term database provides information on the variability that can be expected from year to year in macroinvertebrate metrics, and the presence or absence of long-term trends have been tracked for several metrics over time. We would not have this type of information or the ability to track trends over time initially for any newly proposed metrics.

Response #1-37

As stated in the revised Fact Sheet at page 22, the reasonable and prudent measure in NOAA's BO for Idaho's water quality criteria, which requires biomonitoring, is non-discretionary. Appendix E to the NOAA BO states that effects will be evaluated using "at least" the metrics listed in Table E-1. No changes were made to the permit.

Comment #1-38 (GEI for Hecla)

Three of the macroinvertebrate metrics included in the proposed biomonitoring plan in Table 6 of the revised draft permit are focused on evaluating the abundance and biomass of fish prey items, including total macroinvertebrate biomass, and biomass and abundance of invertebrates considered to be vulnerable to predation by juvenile salmonids. We do not think these metrics are a good choice to characterize the macroinvertebrate populations and any effects that may occur to these populations based on the outfalls for the following reasons:

We have not analyzed invertebrate samples for these parameters in the past; therefore no data exists that allows us to track long-term variability between sites or over time in these metrics.

Macroinvertebrate densities in both streams indicate that prey abundance and biomass are likely not a limiting factor for the fish populations. Mean densities in 2015 at these sites ranged from 8,215 to 14,830 organisms/meters squared (m2), and mean densities have been stable or increasing over time based on long-term trend analysis of sites on both streams (GEI 2016a, b).

The prey vulnerable to predation by juvenile salmonids is not defined in the permit, but this metric is defined in Suttle et al. (2004), the reference provided in Appendix E of the NOAA Fisheries (2014) BO. While we could not calculate biomass from the previous macroinvertebrate data collected at these sites, we could utilize the previously collected data to calculate the abundance of such organisms. Analysis of the data from the most recent sampling event in August 2015 indicated that these vulnerable taxa comprised from 56 to 90 percent of the macroinvertebrate density at the sites on the Yankee Fork and Jordan Creek, and also comprised from 41 to 54 percent of the total taxa present at sites on the Yankee Fork and Jordan Creek. While we lack other data to utilize for comparative purposes, these percentages suggest that sufficient prey organisms are available. These percentages were variable but not consistently higher or lower at the downstream sites.

Suttle et al. (2004) originally used these vulnerable prey metrics to determine how fine sediment in riverbeds impairs growth and survival of juvenile salmonids. Further discussion as to the utility of these metrics to distinguish differences between sites that might relate to the outfalls in Jordan Creek and the Yankee Fork is warranted, as the habitat data collected over the course of the long-term study does not indicate that these streams are impacted by excessive amounts of fine sediment. There is no explanation provided in the revised permit or the NOAA Fisheries BO (2014) that indicates that these metrics would be appropriate for determining whether other types of disturbance were occurring.

Response #1-38

As stated in the revised Fact Sheet at page 22, the reasonable and prudent measure in NOAA's BO for Idaho's water quality criteria, which requires biomonitoring, is non-discretionary. Appendix E to the NOAA BO states that effects will be evaluated using "at least" the metrics listed in Table E-1. No changes were made to the permit.

Comment #1-39 (GEI for Hecla)

The biomonitoring plan included in the revised permit and Appendix E of the NOAA Fisheries (2014) BO lists effects difference thresholds for both fish and macroinvertebrate metrics in Table 6. These effects differences are used to evaluate the magnitude of any differences in metric values between the upstream and downstream sites on Jordan Creek and the Yankee Fork. These thresholds range from 10

to 20 percent, and the difference in metric values between the upstream and downstream sites are expected to be below these threshold values. We agree that some mechanism of evaluating differences between sites would be useful in evaluating the presence or absence of effects of the outfalls on aquatic populations, but we request that further discussion of the natural variability that occurs in these metrics and what steps were taken to ensure the derivation of appropriate effects thresholds be included in the permit.

The review by Jantz et al. (2010) cited in support of the effects thresholds designated in Appendix E specifically states that "the determination of effects size may be situation –specific rather than generic." Despite this, generic threshold values are assumed to be applicable to all sites in Idaho that require biomonitoring based on the RPMs. Appendix E (NOAA Fisheries 2014) states that these percent difference values were selected based on subjective professional judgment, but the "subjectivity and likely conservatism to the detectable differences seem both appropriate and unavoidable based on the information reviewed." While we understand the difficulty in selecting an effective threshold for comparison of sites, the expectation that metric values should only differ by 10 to 20 percent is not consistent with the variation we have observed between years at the same site and even between replicate macroinvertebrate samples taken at the same site and year in some cases.

We reviewed the most recent data collected from sites on Jordan Creek and the Yankee Fork to provide a few examples to further support our request for further discussion of appropriate effects thresholds:

The component metric values for the SMI at sites on Jordan Creek in 2015 were more than ten percent (the proposed effects difference threshold) higher at the downstream site for almost all of the richness metrics (GEI 2016b). In most cases, this resulted from a difference of two or fewer taxa (i.e. one or two more Ephemeroptera, Plecoptera, and scraper taxa were collected at the downstream site compared to the upstream site). The guidance in Table 6 of the permit is unclear as to whether the difference in metric values themselves are to be evaluated or the scores for each metric value are to be evaluated, but component SMI scores also differed by more than ten percent based off of the presence of one additional taxa at one site or the other in some cases.

Similar outcomes occurred with the SFI component metric scores in Jordan Creek in 2015, as both the values and the scores for the number of coldwater native species metric differed by more than ten percent based solely on the presence of a single Bull Trout at the upstream site while none were present at the downstream site. Using these effects difference thresholds could result in a determination that the sites differ based on the presence of a single fish. In addition, the presumably colder temperatures at the upstream site may have been a factor unrelated to the discharges that resulted in the upstream section of this stream being more suitable for the single Bull Trout than the downstream site.

Comparison of the 2014 and 2015 data for each site on Jordan Creek and the Yankee Fork indicated that the effects thresholds would also often be exceeded if data comparisons were made from year to year at the same site (GEI 2015a, b). For example, comparison of the component metrics for the RMI between Site S-9 (the upstream site) on the Yankee Fork in 2014 to this same site in 2015 indicates that the metric values differed by more than 10 percent for almost all component metrics at this site. This magnitude of difference from year to year indicates that natural variability would likely result in exceedances of the effects differences criteria for the population metrics. Other metrics describing the macroinvertebrate community at Site S-9 on the Yankee Fork also differed substantially between the 2014 and 2015 sampling events, with mean density at Site S-9 in 2015 being greater than 2.5 times the

density at this same site in 2014 (GEI 2015a, 2016a). The number of EPT taxa decreased by more than 30 percent between the two years at the same site, and other metrics also showed substantial variation from year to year despite being sampled using the same methods at the same site. We are aware that these metrics are not included in the biomonitoring plan in the revised draft permit, but they are indirectly a part of the calculation of the multimetric indices, and provide evidence of the variability that is often present over time in macroinvertebrate communities.

In 2015 as in the previous years of the study, three replicate Hess samples were taken at each site to characterize the macroinvertebrate community. These replicate samples are carefully taken in riffle habitat that is similar among the three samples in terms of water depths, substrates, and flows. Despite the careful placement of the sampler to minimize habitat differences, macroinvertebrate metric values still can differ by more than 10 percent (the effects difference for most metrics in Table 6) within these replicate samples (GEI 2016b). For example, the replicate samples collected at Site S-4 on Jordan Creek had mean numbers of EPT taxa that ranged from 22 to 26 EPT taxa. Densities differed even more among replicates at this site.

While the abundance of invertebrates considered vulnerable to predation by juvenile salmonids was not originally calculated for the 2015 data, we reviewed the 2015 data and calculated this metric for the three replicate samples at Site S-4 in 2015 to demonstrate that this metric would also be susceptible to high variability. The replicate samples had abundances of these organisms from 3,073 to 11,386 organisms/m2, a range that substantially exceeds the 20 percent effects threshold despite being taken at the same site and year.

While macroinvertebrate biomass metrics have not been calculated previously for sites on Jordan Creek or the Yankee Fork, field experience with macroinvertebrate tissue collection methods for other studies indicate that the addition of only a few large organisms to one sample that were absent in the other samples could easily result in a greater than 20 percent difference (the effects difference value) in the biomass metrics between sites.

If snorkeling were to be required to monitor fish populations in the Yankee Fork, the potential for misidentifications and less accurate abundance and fish length data would be an additional complicating factor in meeting these effects difference criteria.

Response #1-39

In the final permit, the EPA has deleted the numeric thresholds from Table 6.

The EPA agrees that electrofishing is preferable to snorkel counts. *IDEQ's Beneficial User Reconnaissance Program Field Manual for Streams* recommends that fish sampling be done using electrofishing (IDEQ 2016). The final permit requires fish biomonitoring to be done using electrofishing rather than snorkel counts. See also Response to Comment #1-35.

Comment #1-40 (GEI for Hecla)

While an effort was made to locate the site reaches sampled for both streams in areas that minimized the habitat differences, the effects of historical mining downstream of Outfall 002 in Jordan Creek, which pre-date Hecla's activities, limited our ability to do this, as described in GEI (2016b). These differences result in more suitable habitat for trout at the upstream Jordan Creek site, while more suitable habitat for sculpin occurs at the downstream site. We would expect these habitat differences to

be a factor that contributes to exceedances of the effects differences criteria in the fish metrics, although likely the differences between sites in the fish metrics would result in some values that were higher downstream and some values that were lower since both sculpin and salmonid metrics are included in Table 6. Appendix E addresses this through the suggestion to sample paired watersheds or other out-of-watershed reference sites. We agree with this in concept, but the costs of locating and sampling suitably comparable reference sites would be a substantial increase over the annual costs of sampling up to this point, and, as we have pointed out above, effects threshold criteria that account for natural variability in these metrics from year to year should be established first.

Response #1-40

In the final permit, the EPA has deleted the numeric thresholds from Table 6.

Comment #1-41 (GEI for Hecla)

The permit does not clarify what actions to take other than including this information in the annual report if an effects difference of greater than the threshold values occurs. As discussed above, we would anticipate that it may be likely for some of the metrics listed in Table 6 to differ by more than 10 or 20 percent between sites, while others may not. No discussion is provided in the revised draft permit as to if or what type of corrective action or further monitoring would be required if one or more of the effects differences criteria were exceeded.

Response #1-41

In the final permit, the EPA has deleted the numeric thresholds from Table 6.

The permit does not require corrective action or further monitoring in response to stream biomonitoring results which indicate poorer conditions downstream from the outfalls than upstream.

Comment #1-42 (GEI for Hecla)

The proposed monitoring plan also states that protocols must be consistent with or more rigorous than Idaho's Beneficial Use Reconnaissance Program (BURP; IDEQ 2015b). As noted above, the fish population sampling methods used in Jordan Creek are similar to the BURP protocols, as are the benthic macroinvertebrate sampling methods in both Jordan Creek and the Yankee Fork. However, fish population sampling has not been conducted in the Yankee Fork based on the reasons stated above, and snorkeling of the Yankee Fork sites would not be compatible with BURP protocols. In addition, BURP protocols also include habitat assessment and the collection of periphyton samples. We request clarification as to whether these data and samples also need to be collected under the sampling plan presented in the revised draft permit, as these parts of the protocol are not referenced in the study plan.

Response #1-42

The EPA agrees that electrofishing is preferable to snorkel counts. *IDEQ's Beneficial User Reconnaissance Program Field Manual for Streams* recommends that fish sampling be done using electrofishing (IDEQ 2016). The final permit requires fish biomonitoring to be done using electrofishing rather than snorkel counts.

In its final Clean Water Act Section 401 certification, IDEQ has clarified that biomonitoring of the receiving waters shall evaluate fish and macroinvertebrate populations. Habitat assessment and

periphyton sampling are not required. The language in Part I.E.1 of the final permit has been revised accordingly.

Comment #1-43 (GEI for Hecla)

As a general comment, if the effects difference (10 percent) for comparison to reference provided for the SMI component metrics in Table 6 of the revised permit is retained for use when the permit is finalized, the effects difference cited in Table 6 should be changed to be consistent with the values presented in Appendix E of the NOAA Fisheries (2014) BO. It should indicate that the 10 percent applies to only the richness and dominance component metrics, while a 20 percent effects difference is applicable to the other metrics. Also, the spelling of macroinvertebrates should be corrected in Table 6 and Section 1E of the revised draft permit.

Response #1-43

In the final permit, the EPA has deleted the numeric thresholds from Table 6.

The EPA has corrected the spelling of "macroinvertebrates" corrected in Table 6 and Section 1E.

Section 2: Response to Comments Received during the 2015 Public Comment Period

Comment #2-1 (ICL)

We do not agree with the agencies' determination of the location of outfall 002. It is not proper to say that the outfall is located at the confluence of Pinyon Creek and Jordan Creek.

We believe that the lawful location of outfall 002 is at the discharge point of the pond located at the base of the tailings/overburden pile. Effluent exits this point and flows into the creek bed of Pinyon Creek – Pinyon creek then flows into Jordan Creek. The Clean Water Act prohibits the use of a waterbody as a means of conveying waste. The scheme envisioned in the draft NPDES permit utilizes Pinyon Creek as a means of conveying wastewater to Jordan Creek – where the confluence of Pinyon Creek and Jordan Creek is considered the outfall.

There are significant implications to correctly identifying the location of outfall 002. For instance, locating the outfall at the exit point of the treatment works (i.e. the pond) results in the facility no longer having access to the flows of Jordan Creek to use as a mixing zone. The agencies need to make this necessary change in the NPDES permit effluent limits and the 401 cert.

As shown in the 2015 fact sheet in Table B-1, on Page B-1, technology-based effluent limits have been established for cadmium, copper, lead, mercury, zinc, TSS and pH. As stated on Pages B-1 – B-2 of the 2015 Fact Sheet, "EPA has determined that the technology-based TSS effluent limitations are stringent enough to protect water quality in the receiving waters at all times…. For all of the other parameters for which technology-based effluent limits have been established, EPA determined that the technology-based effluent limits are not stringent enough to ensure compliance with water quality standards in the receiving waters. Therefore, EPA is required by Section 301(b)(1)(C) of the Clean Water Act to establish "more stringent limitation(s)…necessary to meet water quality standards."

Response #2-1

As explained on Pages 3-4 the State of Idaho's Clean Water Act Section 401 certification, the diversion of streams within the project area, including Pinyon Creek, was duly authorized. Pinyon Creek was the stream flowing out of Pinyon Basin and Pinyon Lake. Pinyon Lake and Pinyon Creek have been permanently dewatered. Jordan Creek is the receiving water for outfall 002 because it is the first stream into which the treated effluent from outfall 002 flows. The EPA agrees with IDEQ's decision to consider Jordan Creek, and not the dewatered channel of Pinyon Creek, to be the receiving water. Jordan Creek has been the designated receiving water for outfall 002 since the permit was first issued in October 1992.

Comment #2-2 (ICL)

Recognizing that there are certain scenarios that do allow for backsliding, we do not think that the justifications cited regarding the increased discharges of Copper and Zinc at outfalls 002 and 003. Namely, we do not believe that Idaho has correctly reviewed the antidegradation situation related to operations under this permit. Thus, the increased copper and zinc discharges authorized here are not consistent with Idaho's antidegradation rule.

The draft permit proposes to authorize an increase in Copper and Zinc discharges from Outfall 002. For both of these pollutants, the increased discharges will result in the utilization of greater than 10% of the assimilative capacity when measured as the maximum daily limit. See table 3, page 7 of draft 401 cert.

Because this increase utilizes greater than 10% of the assimilative capacity, this represents 'significant' degradation of the receiving water. As a result, a complete antidegradation review and socio-economic review and justification is required. DEQ needs to undertake such a review prior to authorizing this discharge.

Response #2-2

This comment is in reference to IDEQ's draft certification dated February 9, 2015. Table 3 of the February 2015 draft certification shows that there is less than a 10% loss of assimilative capacity. The figures with an absolute value greater than 10% are negative, meaning there's an *increase* in assimilative capacity. See also the footnote to Table 3, which reads, "Negative % reduction = gain in assimilative capacity." As explained on Page 12 of the 2016 fact sheet, the EPA has reviewed IDEQ's 401 certification and concludes that it complies with the State's water quality standards, including the antidegradation policy. See also Response to Comment #1-1 and 1-2.

Comment #2-3 (ICL)

We disagree with DEQ's determination that outfall 003 is an existing discharge from the perspective of an antidegradation review.

Outfall 003 has not previously been regulated under the Clean Water Act and outfall 003 has not previously been subject to an NPDES permit and has not been subject to Clean Water Act regulated effluent limits. DEQ errors in its conclusion that the previous CERCLA regulation equates to a Clean Water Act 'permit or license.'

Further, if indeed the outfall's prior regulation was equivalent to NPDES regulation, the new permit's less stringent effluent limits would be considered backsliding under the CWA.

Clearly, from EPA's perspective, the permit limits imposed on outfall 003 in the draft permit are the first CWA permit limits ever imposed on the outfall. On page 15 of the factsheet table 3 does not compare the draft limits to any previous permit limits. Contrast this to outfall 002 – see table 2 on page 15 which does compare the draft permit limits to the 2002 permit limits.

Outfall 003 needs to be treated as new discharge for antidegradation purposes.

Response #2-3

As stated in the 2016 fact sheet at Page 12, in its revised draft 401 certification, the IDEQ has explained its finding that outfall 003 is an existing discharge. IDEQ determined that the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) discharge authorization for outfall 003 "serves essentially the same purpose as an NPDES permit and therefore, is an existing rather than a new discharge." See the revised draft Clean Water Act Section 401 certification dated November 9, 2015 at Pages 7-8 and the final Clean Water Act Section 401 certification at Pages 10-11.

As stated on Page 10 of the Clean Water Act Section 401 certification, an existing activity or discharge is "an activity or discharge that has been previously authorized or did not previously require authorization" (IDAPA 58.01.02.010.37). The discharge from outfall 003 has, in fact, been previously authorized under CERCLA. As stated in the 2016 fact sheet at Page 12, the EPA has reviewed this antidegradation review, including the State's finding that outfall 003 is an existing discharge, and finds that it is consistent with the State's 401 certification requirements and the State's antidegradation implementation procedures.

Comment #2-4 (ICL)

At page 16, the fact sheet addresses the deletion of the cyanide limits and concludes that cyanide limits are no longer necessary for 002. This conclusion seems inconsistent with the information presented in Table C-8. Table C-8 reports that cyanide concentrations at the edge of both the acute and chronic mixing zones will violate both the acute and chronic water quality standards and that a limit is required.

Response #2-4

Table C-8 in the 2015 fact sheet shows that the discharge from outfall 002 has the reasonable potential to cause or contribute to excursions above the chronic water quality criterion for cyanide when Jordan Creek flows are less than 30 CFS, but not when Jordan creek flows are greater than 30 CFS. Thus, the 2015 draft permit proposed water quality-based effluent limits for cyanide for outfall 002, when Jordan Creek flows are less than 30 CFS.

In the revised draft permit, cyanide limits were proposed for both flow tiers for outfall 002 after the effluent flow rate for outfall 002 was corrected. However, as explained in the response to comment #1-13, based on 221 effluent cyanide results collected from 2009 - 2016, the EPA has determined that the discharge from outfall 002 does not have the reasonable potential to cause or contribute to excursions above water quality standards for cyanide, and the effluent limits for cyanide have been removed from the final permit.

Comment #2-5 (ICL)

We see that the facility is required to monitor fish tissue for mercury. It is not clear to us why this is not considered an effluent limit – as opposed to just a monitoring requirement.

Response #2-5

The permit has effluent limits for mercury that are based on the water column aquatic life criteria.

As explained on Pages C-12 – C-13 of the 2015 fact sheet, the discharge does not have the reasonable potential to cause or contribute to excursions above the fish tissue criterion. As explained on Pages 20-21 of the 2016 fact sheet, the EPA determined that fish tissue monitoring for mercury is not necessary for this discharge, and thus the mercury fish tissue monitoring requirements were removed from the permit. During the 2016 comment period, the commenter did not submit a subsequent comment regarding the removal of the fish tissue monitoring requirement.

Comment #2-6 (ICL)

We are concerned that the agencies are not utilizing the correct water quality standard for arsenic. Table C-8 reports that the agencies used the acute standard of 340 µg/L and the chronic standard of 150 µg/L when considering the water quality implications for discharges from outfall 003. However, on page 13 of the factsheet it is noted that the Yankee Fork Creek has primary contact recreation and domestic water supply as designated uses. As a result, the arsenic standard of 10 µg/L may be applicable.

If this is the case, the use of this more stringent arsenic standard might have implications for the antidegradation review as it may be that the discharge is now seen as using more than 10% of the remaining assimilative capacity of the receiving water.

Response #2-6

The 2016 fact sheet includes a revised reasonable potential analysis for arsenic in Tables B-7 and B-8. These tables show that the discharges do not have the reasonable potential to cause or contribute to excursions above human health water quality criteria for arsenic.

There were no limits for arsenic in the 2002 permit for outfall 002 or in the CERCLA discharge authorization for outfall 003. Since the mine is not operating and the site has been reclaimed, there is no reason to expect that the discharge of arsenic from outfall 003 will increase relative to historic levels. Thus, the fact that there are no limits for arsenic in the reissued permit will not result in a lowering of water quality relative to the 2002 permit or the CERCLA discharge authorization.

Comment #2-7 (ICL)

Page 21 of the fact sheet notes that "[t]he draft permit requires that the permittee develop a best management practices (BMP) plan that is consistent with certain objectives and with applicable EPA guidance."

Is the deployment of these BMPs an enforceable part of the NPDES permit? Are they considered 'permit limits'? If so, shouldn't the development of these BMPs be available for the public to review and comment?

Response #2-7

The BMP conditions in the permit are enforceable, but they are not "limits." The term "best management practices" is defined in the permit as "schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to

control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas." See also 40 CFR 122.2.

As explained in the 2015 fact sheet at Page 21 and the 2016 fact sheet at Page 23, "according to the *U.S. Environmental Protection Agency NPDES Permit Writers' Manual* (section 9.1.2) permits can either require specific BMPs in the permit, or require the permittee to develop a BMP plan. The draft permit requires that the permittee develop a BMP plan that is consistent with certain objectives and with applicable EPA guidance." The EPA does not consider the BMPs that are implemented in the BMP plan to be effluent limitations; therefore, it is unnecessary to public notice the development of the BMPs. Instead, the purpose of the BMP plan is to ensure that the facility takes measures at the facility to implement procedures/practices that will allow the facility to meet the numeric effluent limits in the permit.

Comment #2-8 (ICL)

It is not clear to us what the justification is for a WET mixing zone that utilizes 100% of the receiving flow.

Idaho's most recent mixing zone rule provides for the following:

060.MIXING ZONE POLICY.

01. Mixing Zones for Point Source Discharges.

…

c. The size of mixing zone(s) and the concentration of pollutant(s) present shall be evaluated based on the permitted design flow. The Department shall not authorize a mixing zone that is determined to be larger than is necessary considering siting, technological, and managerial options available to the discharger. (4-11-15)

d. Mixing zones, individually or in combination with other mixing zones, shall not cause unreasonable interference with, or danger to, beneficial uses. Unreasonable interference with, or danger to, beneficial uses includes, but is not limited to, the following:

…

h. Mixing zones shall meet the following restrictions; provided, however, that the Department may authorize mixing zones that vary from the restrictions under the circumstances set forth in Subsection 060.01.i. below: (4-11-15)

i. For flowing waters: (4-11-15)

(1) The width of a mixing zone is not to exceed twenty-five percent (25%) of the stream width; and (4-11-15)

(2) The mixing zone shall not include more than twenty-five percent (25%) of the low flow design discharge conditions as set forth in Subsection 210.03.b. of these rules. (4-11-15)

…

i. The Department may authorize a mixing zone that varies from the limits in Subsection 060.01.h. if it is established that: (4-11-15)

…

ii. A larger mixing zone is needed by the discharger and does not cause an unreasonable interference with, or danger to, beneficial uses as described in Subsection 060.01.d., and the mixing zone meets the other requirements set forth in Section 060. The discharger shall provide to the Department an analysis that demonstrates a larger mixing zone is needed given siting, technological, and managerial options.

We interpret all of this to mean that the DEQ can, under certain circumstances, authorize a mixing zone larger than 25% of the receiving flow. However, doing so requires that the DEQ undertake significant analysis to justify this action. No such analysis or justification has been incorporated in the NPDES permit or 401 cert. Absent this analysis, the DEQ cannot authorize a MZ greater than 25%.

Response #2-8

Neither the revised draft certification (November 2015) nor the final certification (December 2017) authorized 100% mixing zones for WET. The WET mixing zones in the revised draft certification and final certification are 50% for outfall 002 and 75% for outfall 003. See Response to Comment #1-4 regarding the justification for the size of the mixing zones in the final permit.

Comment #2-9 (ICL)

With consideration to the modeling used to demonstrate that the discharge from outfall 003 does not consume more than 10% of the streams' assimilative capacity for cadmium, copper and zinc, it is not clear that the DEQ included the increase in copper and zinc discharged into Jordan Creek from outfall 002 in its calculations.

The increased copper and zinc from outfall 002 results in a consumption of some portion of the assimilative capacity for these pollutants in the Yankee Fork. This needs to be incorporated in the modeling done to demonstrate that the increase in copper and zinc from outfall 003 do not consume more than 10% of the assimilative capacity in the Yankee Fork. Please confirm that this was considered in the antidegradation review's determination of insignificance and provide these calculations for review.

Response #2-9

In its antidegradation review, the Idaho Department of Environmental Quality did not consider the less-stringent effluent limits (relative to the prior permit) for copper and zinc for outfall 002 in its antidegradation review for outfall 003 (personal communication with Troy Saffle, IDEQ, August 16, 2018). However, the EPA believes the antidegradation review for outfall 003 is nonetheless valid, as explained below.

Idaho's antidegradation implementation methods state that "receiving water quality will be the quality measured, or modeled as appropriate, immediately above the discharge for flowing waters and outside any Department authorized mixing zone for lakes and reservoirs" (IDAPA 58.01.02.052.06.b). IDEQ has chosen to use measured water quality in this case.

As with the calculation of effluent limits from the water quality criteria, the calculation of assimilative capacity loss for both outfalls used a steady state calculation under critical conditions. As explained on

Page 97 of the TSD, steady state modeling techniques are inherently conservative, since they apply a combination of worst-case assumptions (e.g., for flow, hardness, and pollutant concentration) which each have a low probability of occurrence and therefore an even lower probability of occurring simultaneously. Thus, while the increased effluent limits for copper and zinc for outfall 002 could cause a loss of up to 10% of the assimilative capacity in Jordan Creek, the actual loss of assimilative capacity will be less than 10% most of the time. The same is true for the calculation of the assimilative capacity loss in Yankee Fork Creek. Thus, in order for the loss of assimilative capacity in Yankee Fork Creek to be greater than 10% due to the increased effluent limits for copper and zinc at outfall 002, Hecla would have to be discharging copper or zinc at concentrations close to the effluent limits for both outfalls during critical receiving water conditions for flow and hardness, which is very unlikely.

In addition, the flow rate of Jordan Creek is small relative to the flow rate of Yankee Fork Creek. The harmonic mean flow rate of Yankee Fork Creek at the USGS station near Clayton, Idaho (station #13296000) is 88 CFS. The harmonic mean flow rate of Jordan Creek upstream from outfall 002 is 4 CFS.

Because of the conservative nature of the steady state calculations, the improbability of discharges of copper or zinc close to the effluent limits occurring simultaneously at both outfalls and under critical conditions, and the fact that the flow of Jordan Creek is much smaller than Yankee Fork Creek, the EPA believes that the effect of increased copper and zinc effluent limits at outfall 002 will be negligible in Yankee Fork Creek. Therefore, it was not necessary for IDEQ to consider the increased copper and zinc effluent limits for outfall 002 in its antidegradation review for outfall 003.

Comment #2-10 (Hecla)

EPA states in the Fact Sheet (pg. 21, VIII.C.) that "Sections III, IV, and V of the draft permit contain standard regulatory language that must be included in all NPDES permits. Because they are regulations, they cannot be challenged in the context of an NPDES permit action." In many instances EPA has changed the regulatory language to impose additional obligations on the permittee not authorized by the federal regulations. EPA must cite the federal regulatory language directly as it appears in the regulation - a change in the language changes the meaning.

Response #2-10

This comment refers to language that appears in the 2015 fact sheet. This comment was addressed by changes to the corresponding section of the 2016 fact sheet, which reads, “Sections III, IV, and V of the draft permit contain standard regulatory language that must be included in all NPDES permits. The standard regulatory language covers requirements such as monitoring, recording, and reporting requirements, compliance responsibilities, and other general requirements.” Thus, the 2016 fact sheet does not state that Sections III, IV and V of the draft permit cannot be commented upon or challenged.

Deviations from regulatory language in Sections III, IV and V of the permit are explained below.

Section III: General Monitoring, Recording and Reporting Requirements

Part III.A: Representative Sampling (Routine and Non-Routine Discharges)

The first paragraph of this part is identical to the regulatory language at 40 CFR 122.41(j).

The second and third paragraphs are not in the NPDES regulations. These paragraphs were added 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 prescribes how such samples will be collected,

analyzed, and reported. This language is necessary to assure compliance with the CWA and the effluent limits in the permit and is therefore authorized by 40 CFR 122.43(a) and 122.44.

Part III.B: Reporting of Monitoring Results

This part implements regulations at 40 CFR 122.41(l)(4) and 122.22(b).

Part III.C: Monitoring Procedures

This part implements the regulation at 40 CFR 122.41(j)(4). The permit language is the same as the regulatory language, except that the phrase "or approved by EPA as an alternate test procedure under 40 CFR 136.5" was added to clarify that alternative test procedures may be approved and used.

Part III.D: Additional Monitoring by Permittee

The first paragraph of this part is consistent with the regulatory language at 40 CFR 122.41(j)(4)(ii), except that language regarding sludge, which appears in the regulation, does not appear in the permit because it is not applicable.

The second paragraph is not in the NPDES regulations; however, the EPA has the authority to request this information under Section 308 of the Clean Water Act.

Part III.E: Records Contents

This part implements the regulation at 40 CFR 122.44(j)(3). The permit language is the same as the regulatory language, except items #2 and #4 have been edited to clarify that the names of the individuals should be included in the monitoring records.

Part III.F: Retention of Records

This part implements the regulation at 40 CFR 122.44(j)(2). Regulatory language addressing sludge does not appear in the permit because it is not applicable. The regulation states that records are to be retained for at least three years, but also states that "this period may be extended by request of the Director at any time." The EPA has chosen to extend the period of record retention to 5 years, since this is the length of the permit term.

Part III.G: Twenty-four Hour Notice of Noncompliance Reporting

This part implements the regulation at 40 CFR 122.41(l)(6). The permit language is consistent with the regulatory language, although the permit has reorganized the regulatory language.

Part III.H: Other Noncompliance Reporting

This part implements the regulation at 40 CFR 122.41(l)(7). The permit language is consistent with the regulatory language, except the permit language references appropriate sections of the permit, whereas the regulation references other sections of the regulations.

Part III.I: Changes in Discharge of Toxic Pollutants

This part implements the regulation at 40 CFR 122(a). The permit language is the same as the regulatory language except notice to the state is also required.

Section IV: Compliance Responsibilities

Part IV.A: Duty to Comply

This part implements the regulation at 40 CFR 122.41(a). The permit language is the same as the regulatory language, except "Act" is used instead of "Clean Water Act" in the permit. The permit specifies that "Act" refers to the Clean Water Act in the "Definitions" section of the permit.

Part IV.B: Penalties for Violations of Permit Conditions

This part implements the regulations at 40 CFR 122.41(a)(2) and (3), 122.41(j)(5) and 122.41(k)(2). The permit language is consistent with the regulatory language. The civil and administrative penalty amounts have been adjusted based on the Federal Civil Penalties Inflation Adjustment Act (28 USC § 2461) as amended by the Debt Collection Improvement Act (31 USC § 3701).

Part IV.C: Need to Halt or Reduce Activity Not a Defense

This part implements the regulation at 40 CFR 122.41(c). The permit language is the same as the regulatory language.

Part IV.D: Duty to Mitigate

This part implements the regulation at 40 CFR 122.41(d). The permit language is the same as the regulatory language, except that language regarding sludge, which appears in the regulation, does not appear in the permit because it is not applicable.

Part IV.E: Proper Operation and Maintenance

This part implements the regulation at 40 CFR 122.41(e). The permit language is the same as the regulatory language.

Part IV.F: Bypass of Treatment Facilities

This part implements the regulations at 40 CFR 122.41(m)(2) and (3). The permit language is consistent with the regulatory language except notice to the state is also required. 40 CFR 122.41(m)(1) includes definitions of the terms “bypass” and “severe property damage,” which have been included with other definitions in Section VI of the permit.

Part IV.G: Upset Conditions

This part implements the regulations at 40 CFR 122.41(n)(2), (3), and (4). The permit language is consistent with the regulatory language. 40 CFR 122.41(n)(1) includes a definition of the term “upset,” which has been included with other definitions in Section VI of the permit.

Part IV.H: Toxic Pollutants

This part implements the regulation at 40 CFR 122.41(a)(1). The permit language is consistent with the regulatory language except that the sludge language from the regulation has been removed because it is not applicable.

Part IV.I: Planned Changes

This part implements the regulation at 40 CFR 122.41(l)(1). The permit language is consistent with the regulatory language except that the sludge language from the regulation has been removed because it is not applicable, and notice to the state is also required.

Part IV.J: Anticipated Noncompliance

This part implements the regulation at 40 CFR 122.41(l)(2). The permit language is consistent with the regulatory language except notice to the state is also required.

Section V: General Provisions

Part V.A: Permit Actions

This part implements the regulation at 40 CFR 122.41(f). The permit language is the same as the regulatory language, except that the permit language includes references to the regulations that provide the causes for modification.

Part V.B: Duty to Reapply

This part implements the regulations at 40 CFR 122.41(b) and 122.21(d). The first sentence of the permit language is consistent with the regulatory language at 122.41(b). An additional sentence is included to remind the permittee of the deadline for submitting permit applications per 122.21(d).

Part V.C: Duty to Provide Information

This part implements the regulation at 40 CFR 122.41(h). The permit language is consistent with the regulatory language, except notice to the state is also required.

Part V.D: Other Information

This part implements the regulation at 40 CFR 122.41(l)(8). The permit language is the same as the regulatory language, except submitting corrected information to the state is also required.

Part V.E: Signatory Requirements

This part implements the regulations at 40 CFR 122.41(k) and 122.22. The permit language is consistent with the regulatory language, except reference to the state is included; and the permit language adds Indian tribes in V.E.1.c.

Part V.F: Availability of Reports

This part implements the regulation at 40 CFR 122.7. The permit language is consistent with the regulatory language.

Part V.G: Inspection and Entry

This part implements the regulation at 40 CFR 122.41(i). The permit language is consistent with the regulatory language, except that "Act" is used instead of "Clean Water Act," and the permit language states that allowing inspection and entry to the state is also required.

Part V.H: Property Rights

This part implements the regulations at 40 CFR 122.41(g) and 122.5(c). The permit language is consistent with the regulatory language except the permit language clarifies that the issuance of a permit does not authorize infringement of for federal and tribal laws in addition to state and local laws.

Part V.I: Transfers

This part implements the regulation at 40 CFR 122.41(l)(3). The permit language is consistent with the regulatory language, except that "Act" is used instead of "Clean Water Act."

Part V.J: State Laws

This language is not required by regulation, but is an accurate statement of law. It is included to clarify that the NPDES permit does not relieve the permittee of liability under state law (such as state water quality standards).

Comment #2-11 (Hecla)

The Draft Permit at III.G.1.d cites "Part l.B.2." but should cite "Part l.B.3."

Response #2-11

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. In the revised draft permit, Part III.G.1.d reverences Part I.B.3.

Comment #2-12 (Hecla)

At "VI. Definitions", certain terms found here are defined by either statute or federal regulation and, as such, the permit must cite the statutory or regulatory language directly as it appears in the regulation. Definitions not accurately reflecting the law or regulation can give definitions a different meaning than intended.

Response #2-12

The following terms appearing in the "Definitions" section of the permit (Part VI) are defined in federal regulations. The terms are defined at 40 CFR 122.2 unless otherwise noted:

- Administrator
- Average monthly discharge limitation
- Best Management Practices
- Bypass (40 CFR 122.41(m))
- Daily discharge
- DMR
- EPA
- Maximum daily discharge limitation
- Method detection limit (82 FR 40939)
- Minimum Level (79 FR 49003)
- NPDES
- Regional administrator
- Severe property damage (40 CFR 122.41(m))
- Upset (40 CFR 122.41(n))

In addition, the permit references 40 CFR 122.2 for definitions of the terms "discharge" and "discharge of a pollutant."

In general, the definitions of these terms in the regulations are identical to those in the permit, except for non-substantive changes in capitalization and punctuation. For example, in the regulations at 40 CFR 122.2, the term that is being defined is printed in italic type, whereas in the permit the term being defined is in quotation marks.

In the definition of "Regional Administrator," the phrase "the appropriate Regional office of the Environmental Protection Agency" has been replaced with "Region 10 of the EPA." The EPA believes this change to the regulatory language is appropriate and clearer than the regulatory language, as Region 10 is the "appropriate Regional office" for this permit.

In the regulations, the definition of the term "NPDES" simply spells out what the acronym stands for, while the full term "National Pollutant Discharge Elimination System" is defined separately. In the final

permit, the EPA included definitions of both "NPDES" and "National Pollutant Discharge Elimination System," and both definitions are identical to the definitions in 40 CFR 122.2.

As explained in the 2016 Fact sheet, the definition of "minimum level" in the permit is identical to the definition in the EPA's sufficiently sensitive methods rule (79 FR 49003).

As explained in the 2016 Fact sheet, the EPA has also replaced the definition of "grab sample" with the definition found in the instructions for EPA Form 3510-2C (Revised August 1990).

Since the EPA proposed to require composite samples for whole effluent toxicity, the EPA included a definition of "composite sample" in the revised draft permit. This definition is from the instructions for EPA Form 3510-2C (Revised August 1990). As explained in the response to comment #2-40, the EPA has determined that grab samples may be used for whole effluent toxicity testing. Since the final permit does not require composite samples for any pollutants, the definition of "composite sample" has been removed from the final permit.

Comment #2-13 (Hecla)

Schedule of Submissions - Item 2 -Quality Assurance Plan (QAP) - Hecla requests a change from 90 days to 120 for submission of the QAP. With proposed changes in monitoring specific parameters and their frequency, if ultimately incorporated into the permit, additional time to complete the QAP is necessary.

Response #2-13

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. In the revised draft permit, the EPA changed the due date for submitting written notice that the QAP has been developed and implemented from 90 days after the effective date of the final permit to 120 days after the effective date.

Comment #2-14 (Hecla)

Schedule of Submissions - Item 3 - Best Management Practices (BMP) - Hecla requests a change from January 20th to March 31st for submission of the annual review of the BMP plan. Site conditions and frequent lack of access to site areas through the winter season and into late spring makes submission of the annual review difficult by January 20th.

Response #2-14

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. In the revised draft permit, the EPA changed the due date for the annual review of the BMP plan to March 31st.

Comment #2-15 (Hecla)

Hecla requests a change from January 31st to March 31st for submission of the annual Water Quality report consistent with the 2002 permit. Analytical results from December monitoring are typically on a minimum 21-day turnaround time from the lab and additional time to load data into the database, verify data and complete the annual report will make meeting a January 31st deadline extremely difficult.

Response #2-15

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. In the revised draft permit, the EPA changed the due date for the annual water quality monitoring report to March 31st.

Comment #2-16 (Hecla)

I.A Discharge Authorization - Yankee Fork Creek is not the USGS designation for the Outfall 003 location. USGS designation is Yankee Fork Salmon River and is commonly called just Yankee Fork. Hecla requests "Yankee Fork Creek" be changed to "Yankee Fork" in all locations of the permit and Fact Sheet

Response #2-16

The receiving water for Outfall 003 is called "Yankee Fork Creek" in Section 130.03 of the Idaho Water Quality Standards (IDAPA 58.01.02.130.03). NPDES permits must be conditioned to ensure compliance with the water quality standards of the State in which the discharge is located as well as any other affected States (CWA §301(b)(1)(C), 40 CFR 122.4(d)). As such, the EPA considers the naming of the receiving waters in the Idaho Water Quality Standards to be more relevant to the permit than the USGS naming convention. The EPA will continue to refer to the receiving water for Outfall 003 as "Yankee Fork Creek."

Comment #2-17 (Hecla)

Effluent Flow, CFS Maximum Daily Limit - All limits for Outfall 002 have been calculated based on an 8:1 ratio of Jordan Creek flow versus Effluent discharge. Hecla requests 2.01 CFS be removed from the table to allow greater volumetric discharge in high flow conditions for Jordan Creek. The volume of effluent flow is directly related to Jordan Creek flow from site weather conditions. The designed treatment flow through the water treatment plant is 2500 gpm. During spring runoff, flows at Outfall 002 are necessary above 900 GPM in order to keep up with the spring melt and has always abided by the permitted flow of 8.1 dilution ratio limit in the current permit. This mistake of flow capacity cap of 900 gpm at Outfall 002 could cause the north pond to fill to capacity and release untreated site waters directly into Jordan Creek. Water treatment plant flow is discussed further in this document on pages 6-7.

Response #2-17

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. As explained on Page 13 of the 2016 fact sheet, the maximum daily flow limit for outfall 002 has been changed to be consistent with the correct design capacity of the treatment plant. The revised maximum daily limit for flow at outfall 002 is 5.57 CFS.

Comment #2-18 (Hecla)

There is large variability in monitoring frequencies for Outfall 002. Hecla requests monthly monitoring for Copper, Cyanide WAD, Total Suspended Solids (TSS) and Zinc to be in line with the frequency of other parameters with effluent limits. Past data has shown these constituents do not exceed current limits and therefore do not warrant twice per month sampling. Further, instream monitoring has shown routine compliance with applicable water quality criteria for these parameters.

Response #2-18

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. As explained in the 2016 fact sheet at Pages 17 and 18, the EPA has reduced the

effluent monitoring frequencies for copper, cyanide, mercury, TSS, and zinc consistent with the recommendations of the Interim Guidance for Performance - Based Reductions of NPDES Permit Monitoring Frequencies (Monitoring Reduction Guidance) (EPA 1996). Specifically, monitoring frequencies were reduced to monthly, except for TSS at outfall 002, which was reduced to twice per month.

Comment #2-19 (Hecla)

"Floating, suspended or submerged matter" is not defined by EPA and is vague and subjective. The Grouse Creek site has not seen this parameter in any table of "Effluent Limitations and Monitoring Requirements" in previous permits and requests that it be removed from the tables.

Response #2-19

Although not listed in the table of limitations in monitoring requirements for outfall 002 in the 2002 permit, the 2002 permit did contain the following language: "The permittee shall not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen on the surface of the receiving water" at Page 6.

The reissued permit's language regarding floating, suspended or submerged matter is consistent with the Idaho Water Quality Standards (IDAPA 58.01.02.200.05). The reissued permit also requires visual monitoring to determine compliance with this limit. These permit requirements are necessary to ensure compliance with the Idaho Water Quality Standards.

Comment #2-20 (Hecla)

Aluminum concentrations that have been detected are below any applicable Idaho criteria. Simply having a detection is not sufficient reason to include a monitoring requirement. Hecla requests removal of the monitoring requirement for aluminum. Aluminum monitoring is also listed as quarterly in the Fact Sheet text but listed as monthly for the Permit. Hecla believes that if aluminum is not removed that quarterly sampling should be the frequency.

Response #2-20

As stated in the fact sheet on Page 19, "aluminum has been detected in the effluent from Outfalls 002 and 003. Therefore, the permit requires quarterly monitoring for aluminum in both outfalls, for the purpose of effluent characterization."

As stated in the Biological Evaluation (BE) on Pages 41 and 42, "seven aluminum samples are available for the Grouse Creek Mine effluent (outfalls 002 and 003), taken between November 2000 and June 2010. The average concentration is 393 µg/L, with a standard deviation of 268 µg/L, and the maximum was 880 µg/L" (EPA 2017).

While the State of Idaho has not established a numeric water quality criterion for aluminum, as discussed on Pages 41-43 of the BE, aluminum can be toxic to fish and other aquatic life. As such, effluent limits for aluminum could be established based on Idaho's narrative water quality criterion for toxic substances (IDAPA 58.01.02.200) and NPDES regulations requiring limits based on narrative criteria (40 CFR 122.44(d)(1)(vi)). Monitoring for aluminum is necessary to determine if the discharges of aluminum have the reasonable potential to cause or contribute to violations of Idaho's narrative water quality criterion for toxic substances.

The EPA had intended to propose quarterly monitoring for aluminum for outfalls 002 and 003 in the 2015 draft permit, consistent with the 2015 fact sheet. This was addressed in the revised (2016) draft permit and draft fact sheet.

Comment #2-21 (Hecla)

Arsenic monitoring was removed from the current NPDES permit based on historically low concentrations in effluent from Outfall 002. Based on this previous determination and the fact that only a detection was made in effluent from Outfall 002 is sufficient cause to remove arsenic monitoring from this permit. Further, historic instream monitoring has shown compliance with applicable arsenic criteria.

Response #2-21

The EPA agrees that the discharges of total arsenic have been well below Idaho's aquatic life water quality criteria arsenic. However, human health criteria for arsenic are also applicable to the receiving waters and are more stringent than the aquatic life criteria. Therefore, it is reasonable to continue monitoring the effluent from both outfall 002 and 003 for arsenic, so that a reasonable potential analysis for both human health and aquatic life criteria can be performed when the permit is reissued.

Comment #2-22 (Hecla)

Hardness as $CaCO_3$ is calculated from actual calcium and magnesium analysis by the Grouse Creek site. Since these parameters are analyzed for Total Recoverable Grouse Creek requests that Hardness reflect a TR analysis.

Response #2-22

Monitoring of effluents and receiving waters for hardness now specifies "hardness, total as CaCO3" in units of mg/L. In terms of metals analysis, the terms "total" and "total recoverable" are equivalent and interchangeable (EPA 1998). Thus, calculating the "total" hardness as CaCO3 from analysis of total recoverable calcium and magnesium is acceptable.

Comment #2-23 (Hecla and GEI for Hecla)

Hecla stated that whole Effluent Toxicity (WET), Chronic testing has changed from quarterly at Outfall 002 and biannually at Outfall 003 without justification in the monitoring frequency. Monthly WET testing full suite (monthly and quarterly parameters) are included in WET testing per guidance documents and would therefore negate any quarterly monitoring designations for most parameters in Table 1 and Table 2. Hecla requests WET testing monitoring frequency be changed to biannual in June and October, effectively in high and low flow stream conditions.

GEI stated that the requirement for monthly chronic testing for outfalls 002 and 003 is excessive and unnecessary, and is a requirement that is not placed on other NPDES permittees. In fact, the current draft permit for the City of Sandpoint Wastewater Treatment Plant (ID0020842) has a requirement for annual chronic WET testing in rotating quarters. It is unclear why basically storm water at a reclaimed mining site would have more frequent monitoring requirements than a wastewater treatment facility which might be expected to have much more variability in their discharge due to virtually no control in influent sources. Based on the information available online, there are no existing permittees in the state of Idaho with monthly WET test requirements.

The monthly requirement is also a substantial increase from previous requirements, with no basis provided for the increase in frequency. Hecla has been conducting quarterly toxicity testing at Outfall

002 since 1997. Toxicity exceeding the average monthly limit has only been detected on rare occasions for Outfall 002, and has never been persistent; toxicity has never exceeded the maximum daily limit. We recommend biannual sampling for Outfall 002 in the high and low flow seasons. Because Outfall 003 does not have any toxicity limits, is "monitor and report only", and showed no reasonable potential in the analysis reported in Table C-9 of the fact sheet, monthly monitoring is inappropriate. At most, monitoring for Outfall 003 should be biannually, in high and low flow seasons (as has been conducted in the past).

Response #2-23

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. The monitoring frequency for chronic WET was changed from monthly in the 2015 draft permit to four times per year in the revised draft permit.

As explained on Page 18 the 2016 fact sheet, there is no basis to reduce the WET monitoring frequency to biannually.

As explained on Pages B-6 and B-7 of the 2016 fact sheet, the finding in the 2015 fact sheet that outfall 003 did not have reasonable potential for WET was made in error. Thus, effluent limits for WET were proposed for outfall 003 in the revised draft permit.

Comment #2-24 (Hecla)

Regarding Note 1 in Table 1 of the 2015 draft permit, due to stream geometry in Jordan Creek, Hecla has monitored flow in Jordan Creek by Doppler at a location below Outfall 002 and then has subtracted recorded effluent flow to determine actual Jordan Creek flow since 2003. Monitoring actual stream flow above Outfall 002 would require instream alterations and associated permits that may not be attainable. Hecla requests measuring Jordan Creek flow with the current installed equipment and procedures. The note should read "Jordan Creek flow must be representative of flow directly upstream of the outfall location" as in the current permit.

Response #2-24

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. The revised draft permit uses the language in the 2002 permit regarding flow monitoring for Jordan Creek.

Comment #2-25 (Hecla)

In Table 1, note 4, Hecla requests clarity that no samples are required when there is no discharge from the outfall - "No sampling is required when there is no discharge from the Outfall."

Response #2-25

As stated in the 2015 fact sheet at Page 17 and in the revised (2016) fact sheet at Page 15, if no discharge occurs during the reporting period, “no discharge” shall be reported on the DMR. The EPA does not agree that it is necessary to state in the permit that monitoring is only required for a given outfall when discharge occurs from that outfall. When there is no discharge from a given outfall, it is not possible to take water samples from that outfall, and the fact sheets explain how the absence of a discharge is to be reported.

Comment #2-26 (Hecla)

Hecla requests matching monitoring parameters and frequency for each outfall.

Response #2-26

In general, in the revised draft permit and in the final permit, the monitoring parameters and frequencies are the same for outfalls 002 and 003. Specifically, in the final permit, the required monitoring frequencies are identical for outfalls 002 and 003 for the following parameters:

- Aluminum (4 times per year in April, June, August and October)
- Ammonia (4 times per year in April, June, August and October)
- Arsenic (4 times per year in April, June, August and October)
- Cadmium (monthly)
- Conductivity (monthly)
- Copper (monthly)
- Dissolved organic carbon (monthly)
- Effluent flow (continuous)
- Floating, suspended or submerged matter (monthly)
- Hardness (monthly)
- Lead (monthly)
- Mercury (monthly)
- Nitrate + nitrite (4 times per year in April, June, August and October)
- pH (daily)
- Selenium (4 times per year in April, June, August and October)
- Silver (4 times per year in April, June, August and October)
- Stream flow (daily)
- Temperature (continuous)
- Whole effluent toxicity, acute (annually)
- Whole effluent toxicity, chronic (4 times per year in April, June, August and October)
- Zinc (monthly)

The monitoring frequency for TSS is twice per month for outfall 002 and monthly for outfall 003. As explained on Page 17 of the revised fact sheet, the average discharge of TSS from outfall 002 is 28% of the average monthly limit. Thus, consistent with the recommendations of the *Interim Guidance for Performance - Based Reductions of NPDES Permit Monitoring Frequencies* (EPA 1996), the EPA reduced the monitoring frequency for TSS at outfall 002 from weekly in the prior permit to twice per month.

Comment #2-27 (Hecla)

Hecla has reviewed Table 8 and Table 9 of the Fact Sheet - Reasonable Potential Calculations for Outfalls. EPA has determined that effluent limits are only required at Outfall 002 for WET, Chronic in both flow tiers and Cyanide WAD for Jordan Creek flow less than 30 CFS. Hecla requests all other effluent limits be removed from Table 1 for Outfall 002. The same reasonable potential calculations determined that none of these parameters for Outfall 003 require effluent limits and therefore all effluent limits should be removed from Table 2 for Outfall 003.

Response #2-27

See the response to comment #1-22.

Comment #2-28 (Hecla and GEI for Hecla)

The Grouse Creek site has already completed the most sensitive species testing requirement for WET for the current permit and believes that performing those tests again is not justified. Effluent water quality from Grouse Creek's water treatment facility has steadily improved, though influent sources have not, and annual instream bioassessment monitoring has determined no effects to the biological communities in either Jordan Creek or the Yankee Fork. Costs of testing and shipping the necessary effluent and receiving water samples is a burden to Grouse Creek because the tests have already been completed.

GEI stated that the permit states that a suite of three screening tests must be conducted using Ceriodaphnia dubia, Pimephales promelas, and Selenastrum capricornutum to determine the most sensitive species. This type of screening testing has been done twice in the past, most recently in 2002 and 2003 using C. dubia and P. promelas, where it was determined that these species had similar responses when exposed to the effluent; therefore, subsequent testing was conducted using P. promelas. While S. capricornutum was previously determined to be the most sensitive species, and was used for WET testing prior to 2003, Idaho Department of Environmental Quality (IDEQ) determined this species to be inappropriate in the previous 401 certification process and it was removed from the final permit issued in 2002. Given that WET tests have been conducted consistently on P. promelas since 2003, it would seem maintaining this species would allow for better historical comparisons of WET test results. However, if it is determined that re-screening for the most sensitive species must be conducted again during this permit cycle, we would recommend only one suite of tests using all species as sufficient evidence of species sensitivity, as sensitivities have repeatedly been established in the previous two permit cycles. In addition, it is unclear why if two species produce identical results the permittee may use either, but if all three species produce identical results the permittee must use C. dubia. If species have identical results, the permittee should be allowed to select the species used, whether it is two or three species with the same results.

Response #2-28

The portion of this comment stating that the permittee should be allowed to select the species used if the screening for the most sensitive species is inconclusive was addressed by changes made in the revised draft permit issued for public comment in 2016. As stated in the 2016 fact sheet at page 19, the EPA agrees that, if the screening for the most sensitive species is inconclusive, Hecla should continue testing with Pimephales promelas, because continuing to test using that species would allow for better historical comparisons of WET test results.

As explained in the 2016 fact sheet at page 19, the EPA believes the screening for the most sensitive species should be repeated, and that the screening should include three species, representing three different phyla (e.g., a fish, an invertebrate, and a plant). The only plant for which there is an EPA-approved whole effluent chronic freshwater whole effluent toxicity test is Selenastrum capricornutum.

Comment #2-29 (Hecla)

I.C.5.b - Hecla is unsure which EPA office and contact will be notified for this section and would like additional clarification.

Response #2-29

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. This paragraph of the 2015 draft permit concerned written notification to the EPA in the event of an exceedance of a WET effluent limit or trigger, but did not specify how to submit such notification. The revised draft permit states:

> *The permittee must notify EPA of the exceedance in writing within two weeks of receipt of the test results, at the following address:*
>
> *US EPA Region 10*
> *Attn: NPDES WET Coordinator*
> *1200 6th Avenue*
> *Suite 900 M/S OWW-191*
> *Seattle, WA 98101*

This language was retained in the final permit.

In addition, if a maximum daily WET effluent limit is exceeded, 24-hour reporting is required. See the permit at Parts I.B.3 and III.G. Other violations of effluent limits, including average monthly limits for WET, are to be reported at the time monitoring reports are submitted. See the permit at Part III.H.

Comment #2-30 (Hecla)

l.D Surface Water Monitoring - The Grouse Creek site is currently on a 4 times yearly monitoring schedule and requests this schedule continue into the renewed permit. However, the schedule may not coincide with starting surface water monitoring within 30 days of the effective day of the permit. Hecla requests that surface water quality monitoring continues on the first scheduled sampling after the effective date of the renewed permit.

Response #2-30

The EPA agrees that it is reasonable for surface water monitoring to continue on the first scheduled sampling after the effective date of the reissued permit. The EPA has made a change to the permit to reflect this.

Comment #2-31 (Hecla)

I.D.6. The Grouse Creek site currently has EPA authorization for 4 times per year sampling instead of quarterly because of site conditions. Grouse Creek requests this same monitoring requirement of April, June, August and October, which monitors high flow, low flow, and both limbs of the hydrograph for Jordan Creek and Yankee Fork consistent with the attached letter from EPA.

Response #2-31

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. This change is discussed in the 2016 fact sheet at Page 19 for effluent monitoring and Page 20 for receiving water monitoring.

Comment #2-32 (Hecla)

l.D.7 Table 4 Surface Water Monitoring Requirements for Jordan Creek - Hecla requests the January monitoring requirement for temperature be removed because of winter conditions preventing safe

access to sites on Jordan Creek. Further, it would be an elevated temperature that would be of concern and not freezing conditions.

Response #2-32

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. The revised draft permit proposed continuous temperature monitoring of the receiving waters from May 1st through October 31st. As explained in the response to comment #1-28, the required season for continuous temperature monitoring for outfall 002 has been shortened to July – September. In addition, grab samples for temperature are required at the times that water chemistry samples are required for the receiving waters, if continuous temperature monitoring is not occurring at the time. Specifically, grab samples for receiving water temperature are required during April, June and October for Jordan Creek and during April for Yankee Fork Creek.

Comment #2-33 (Hecla)

I.D.7 Table 4 and Table 5 - Hecla requests clarification as a note to the table that surface water monitoring is not required if there is no discharge from either outfall.

Response #2-33

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. As explained in the 2016 fact sheet at Page 21, the EPA does not agree that requirements to monitor the receiving water upstream of the outfalls should be contingent upon a discharge to the stream, because upstream surface water monitoring results would not be influenced by the discharges. It is necessary to characterize the background concentrations of pollutants in the receiving water when developing water quality-based effluent limits, particularly when a mixing zone is authorized. See the *U.S. Environmental Protection Agency NPDES Permit Writers' Manual* at Page 6-19 (EPA 2010). However, in the revised draft permit, the EPA has made downstream monitoring requirements conditional, so that downstream monitoring is only required when there is a discharge from the corresponding outfall. This conditional downstream monitoring was retained in the final permit.

Comment #2-34 (Hecla)

I.D.9.a - Hecla believes that surface water monitoring is not part of DMR reporting and has not been in the past. Hecla requests clarification of the source of this requirement. Hecla requests this be removed from the permit.

Response #2-34

Monitoring in addition to that required to determine compliance with effluent limitations, including surface water monitoring and biomonitoring, may be required in an NPDES permit to support future permit development activities. See the *U.S. Environmental Protection Agency NPDES Permit Writers' Manual* at Page 6-19 (EPA 2010).

The EPA's Integrated Compliance Information System (ICIS) database can accept receiving water data. This provides a convenient way for the EPA to track whether required monitoring is occurring and to store and access the data.

Comment #2-35 (Hecla)

I.D.9.b - The Grouse Creek site currently submits surface water quality monitoring results in an annual report that is due by March 31 each year. Hecla requests a change from January 31st to March 31st as the deadline for this submittal consistent with the 2002 permit.

Response #2-35

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. In the revised draft permit, the EPA changed the due date for surface water monitoring annual report to March 31st.

Comment #2-36 (Hecla)

Methylmercury Fish tissue monitoring is a new requirement for this permit from the current permit. EPA completed an evaluation of mercury in fish tissue reports from the Grouse Creek site starting in 2000 through 2013. Not mentioned in the report is that those mercury analyses are for total mercury and not methylmercury. Methylmercury is only a portion of the total mercury analysis, especially for flowing high mountain streams with low organic contact. Idaho implementation guidance allows total mercury analysis, which is more cost effective and less labor intensive for fish tissue and only requires the more elaborate methylmercury analysis if a mercury problem is determined.

EPA has determined from their review that the Grouse Creek site "does not have the reasonable potential to cause or contribute to excursions above Idaho's fish tissue criterion for mercury". Because of this determination the Grouse Creek site is "considered a de minimis source of mercury". De minimis sources of mercury are only required to complete methylmercury fish tissue studies every 5 years of the permit per Idaho Implementation Guidance. This is guidance only and can be addressed outside a permit condition.

EPA acknowledges Idaho's Implementation Guidance (which has no legal authority and cannot be given enforcement effect in a permit) but incorrectly applies annual fish tissue monitoring requirements even after review of historical data at the Grouse Creek site.

With this information in hand, EPA has arbitrarily added methyl mercury fish tissue monitoring and it should be removed from this permit.

Response #2-36 (Hecla)

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. As explained in Page 20 of the 2016 fact sheet, because of the long history of fish tissue monitoring in the watershed, which shows that fish tissue concentrations of mercury have consistently been below the water quality criterion, and because the permit includes numeric water quality-based effluent limits for mercury which are more stringent than the corresponding limits in the previous NPDES permit (for Outfall 002) and the CERCLA discharge authorization (for Outfall 003), and due to the absence of other point sources of mercury in the vicinity of this discharge, the EPA does not anticipate that fish tissue mercury concentrations will increase. Therefore, the EPA does not believe that it is necessary to require monitoring of methylmercury concentrations in fish tissue in this permit and this requirement has been removed from the permit.

Comment #2-37 (Hecla)

I.E.8.b - investigations into potential sources of mercury in the Yankee Fork should be limited to the Grouse Creek site discharge and not ambient, non-point sources and other stream activities. This section needs clarification that the investigation is only of the permittee's discharge and no other sources.

I.E.8.c - this section also needs clarification that any report will only include investigations into the permittee's discharge, if warranted at all.

Response #2-37

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. As explained in Page 20 of the 2016 fact sheet, the EPA does not believe that it is necessary to require monitoring of methylmercury concentrations in fish tissue in this permit. Thus, neither the revised draft permit nor the final permit require monitoring for methylmercury in fish tissue, nor investigations of the sources of mercury.

Comment #2-38 (Hecla)

I.E.9.c - The Grouse Creek site has: 1) historical mercury fish tissue data; 2) the determination of "does not have the reasonable potential to cause or contribute to excursions above Idaho's fish tissue criterion for mercury"; and 3) is a de minimis source under the Idaho implementation guidance. Hecla requests this section be removed.

Response #2-38

As explained in the response to comment #2-36, this comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. As explained in Page 20 of the 2016 fact sheet, the EPA does not believe that it is necessary to require monitoring of methylmercury concentrations in fish tissue in this permit.

Comment #2-39 (Hecla)

General Monitoring, Recording and Reporting Requirements - B Reporting of Monitoring Result – this section is unclear what results will be submitted electronically to NetDMR. The Grouse Creek site's DMR reports are generated from EDMS Data Management Systems software. Hecla requests a change to 1 year before DMRs are regularly submitted to NetDMR to develop the required format and clarification of 'additional monitoring' that is reported. Further, it is our understanding that the regulatory requirement to provide DMRs falls on EPA.

Response #2-39

Hecla made a similar comment on the revised draft permit. See the response to comment #1-32.

Comment #2-40 (GEI for Hecla)

The sample type for all WET testing is listed as a 24-hour composite sample. Although this was the same sample type required in the previous permit, we believe this is an unnecessary requirement for WET testing for these outfalls. The mine has not operated for twenty years, has been reclaimed the last 10 years and is in a remote location, with the discharges located outside in areas that are not easily accessible. It is our understanding that effluent compositing is typically required when the quality of the effluent is expected to vary significantly over the compositing period. Historical data from Hecla shows

that water quality does not vary significantly over a 24-hour period. Virtually all resultant effluent sources are due to atmospheric deposition (i.e. if the site were located in a high desert region, there would be no "effluent"). In addition, all other required parameters are measured on grab samples. As such, grab sampling would also provide an appropriate sample for WET testing, and grab sampling has been previously allowed for chronic WET testing in other permits with similar remote access to their outfalls, such as for the nearby Thompson Creek Mining Company (NPDES Permit No. ID0025402).

Response #2-40

According to Section 8.1.4.2 of the *U.S. Environmental Protection Agency NPDES Permit Writers' Manual*, "composite samples can be used for whole effluent toxicity (WET) testing; however, if there is concern that there are toxicity spikes or that the toxicant is a parameter for which composite sampling is not appropriate, grab samples for WET testing could be specified in the permit." This section of the Permit Writers' Manual also references the permit application regulations at 40 CFR 122.21(g)(7). This regulation states that, except for certain parameters that may change during the time it takes to composite the sample, 24-hour composite samples must be used to collect data for use in the permit application. However, this regulation also states that grab samples may be used in lieu of composite samples "for effluents from holding ponds or other impoundments with a retention period greater than 24 hours."

Prior to treatment, water from the historic Sunbeam mine adit and from underdrain systems beneath the waste rock storage facility and the tailings impoundment are routed to the North Pond, which has a detention time longer than 24 hours, even under peak flow conditions (personal communication with Brant Tritthart, Hecla Limited, July 17, 2017). Thus, the EPA agrees that WET testing may be conducted on grab samples instead of 24-hour composite samples.

Comment #2-41 (GEI for Hecla)

The permit specifies that survival endpoints are reported as toxic units using the no observed effect concentration (NOEC) and sublethal endpoints are reported using the 25% inhibition concentration (IC_{25}), however, it does not specify which of these endpoints (survival or sublethal, or both) will be used to determine chronic toxicity. Given how these two statistical tests view data differently, we would recommend both NOEC and IC_{25} be calculated for both endpoints and determination of toxicity would be triggered only when both statistical test indicate toxicity.

Response #2-41

As stated in the revised draft permit at Part I.C.7, "The report of toxicity test results must include all relevant information outlined in Section 10, Report Preparation, of *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA/821-R-02-013, October 2002." In Section 10.1.7, this document specifies that the results section of the report should include the following:

1. Provide raw toxicity data in tabular form, including daily records of affected organisms in each concentration (including controls) and replicate, and in graphical form (plots of toxicity data)
2. Provide table of LC_{50}s, NOECs, IC_{25}, IC_{50}, etc. (as required in the applicable NPDES permit)
3. Indicate statistical methods used to calculate endpoints.

Thus, the report of toxicity should include, at a minimum, both the NOEC for survival and the IC_{25} for sublethal effects for chronic tests and the LC_{50} and the NOAEC for acute tests.

Effluent limits have been established only for chronic whole effluent toxicity. For the purpose of reporting results on the DMR and for comparison to effluent limits, the most sensitive test endpoint (i.e., the endpoint producing the higher result in TU_c) should be reported. For example, for the *Pimephales promelas* larval survival and growth test, if the NOEC for survival is 10% effluent (10 TU_c) and the IC_{25} for growth is 5% effluent (20 TU_c), the permittee should report 20 TU_c on the DMR.

In addition, whenever multiple species are tested for chronic toxicity, it is the result for the most sensitive species that should be reported on the DMR. See the TSD at Page xiv.

Comment #2-42 (GEI for Hecla)

In reviewing the calculations used for the average monthly limits (AMLs) for Outfall 002 in Table C-10 of the Fact Sheet, we believe the calculations should be revised. The number of samples per month (n) is incorporated into the equation to calculate the AML from the long-term average (LTA). Table C-10 lists the number of samples per month as 4. However, if the actual number of samples currently required in the permit is used, 1 per month, the resulting AML is 8.31 TU_c for Jordan Creek flows of <30 CFS, and 14.7 TU_c for flows of ≥30. Additionally, as we are recommending biannual WET testing, as has been conducted in the past, this would be 0.17 samples per month, which would result in AMLs of 10.1 TU_c for Jordan Creek flows of <30 CFS, and 17.9 TU_c for flows of ≥ 30.

Response #2-42

As explained in the response to comment #2-23, there is no basis to change the WET monitoring frequency to biannually.

The EPA assumed 4 samples per month for calculation of the average monthly limits based on the recommendations in Section 5.5.3 of the TSD. See also the 2015 fact sheet at Page C-17. Section 5.5.3 of the TSD reads, in relevant part:

> *For water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the LTA associated with a particular WLA and by the CV of the effluent concentrations. Increasing or decreasing monitoring frequency does not affect this underlying distribution or treatment performance, which should, at a minimum, be targeted to comply with the values dictated by the WLA.* ***Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of n for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for n must be assumed for AML derivation purposes.*** *This is particularly applicable for addressing situations such as where a single criterion is applied at the end of the pipe and a single monthly sample is contemplated for compliance monitoring purposes, or where monitoring frequency is only quarterly. In this case, both the average monthly and the MDL would exceed the criterion. (For example, for a CCC of 1.0 chronic toxic unit [TUc] applied as a WLA at the end of the pipe, both the MDL and AML would be 1.6 TUc; assuming CV=0.6, n=1, and a 99 percent probability basis.) A discharger could thus comply with the permit limit but routinely exceed the criterion.* ***Under these circumstances, the statistical procedure should be employed using an assumed number of samples of at least <u>four</u> for the AML derivation.***
> (Emphasis in original.)

Thus, the intent of assuming at least four samples when deriving AMLs is therefore to avoid a situation in which the average monthly limit is greater than the chronic wasteload allocation, thus allowing the permittee to comply with the permit but exceed the wasteload allocation. However, the EPA has determined that, in this case, specifying 1 sample per month in the calculation of the WET limits for outfall 002 will, in fact, result in average monthly WET limits that are less than the chronic WLA.

This is attributable to the relatively high CV (1.31). See the upper right-hand plot in Figure 5-8 of the TSD, on Page 108, showing that, for n = 1, at CVs greater than about 1.2, the AML per unit WLA is 1 or less. Therefore, for outfall 002, the EPA has recalculated the AMLs for WET based on 1 sample per month instead of 4 samples per month. This results in AMLs for WET of 4.6 TUc for both flow tiers instead of 3.3 TUc in the draft permit.

The CV for WET, for outfall 003, is assumed to be 0.6. Thus, if the EPA were to specify 1 sample per month in the calculation of the AML, the AML would exceed the chronic WLAs. See the upper right-hand plot in Figure 5-8 of the TSD, showing that, when the LTA is calculated at the 99% probability basis, the AML is calculated at the 95% probability basis, and when n = 1, at CVs less than about 1.2, the AML per unit WLA is greater than 1. Thus, the EPA has assumed 4 samples per month to calculate WET limits for outfall 003, consistent with the recommendations of Section 5.5.3 of the TSD.

The EPA does not believe it is appropriate to specify a number of samples per month less than 1 when calculating an average monthly limit. The effluent limits for WET are expressed as average monthly limits and maximum daily limits, consistent with 40 CFR 122.45(d)(1). The number of samples is relevant to the calculation of the average monthly limit, as explained in Section 5.5.3 of the TSD.

The "average monthly discharge limitation" is defined as "the highest allowable average of 'daily discharges' over a calendar month, calculated as the sum of all 'daily discharges' measured during a calendar month divided by the number of 'daily discharges' measured during that month." See the permit at Section VI and 40 CFR 122.2. Thus, compliance with an average monthly limit for a given month will be based solely on samples taken during that month. The fact that there are other months during which no samples are taken is irrelevant. Thus, for the purpose of calculating an average monthly limit, the number of samples per month should always be at least 1.

Comment #2-43 (GEI for Hecla)

Table 3 in the permit provides receiving water concentrations (RWC) that must be included in the dilution series for chronic testing, in addition to two dilutions above the RWC and two dilutions below the RWC. It is stated that these are the dilutions associated with the average monthly limit (AML) for chronic toxicity, however, these RWCs do not match up with the average monthly limits listed in Table I of the permit. As stated in comment 5, we also believe the AMLs should be revised. The RWCs derived using the revised AMLs for biannual sampling and maximum daily limits (MDLs) from the permit for Outfall 002 are shown in Table 1 below. Our recommendation would be that the dilution series include the two RWCs shown below (depending on flow) as well as one dilution below and two dilutions above the RWCs (e.g., for flow< 30 CFS: control, 3%, 6%, 9.9%, 50%, and 100%).

Response #2-43

The EPA agrees that the RWCs listed in Table 3 of the 2015 draft permit for outfall 002 did not correspond to the WET AMLs limits in Table 1 of the 2015 draft permit.

This comment was addressed by changes made to the revised draft permit issued for public comment in 2016. The RWC for outfall 002 (30% effluent) corresponds to the WET AML of 3.3 TUc. As explained in the response to comment #2-42, the EPA has changed the WET AMLs for outfall 002 in the final permit. The revised WET AMLs for outfall 002 are 4.6 TUc for both flow tiers. The RWC corresponding to 4.6 TUc is 22% effluent, and this change has been made to the final permit.

In the final permit, the EPA has changed the requirements for the WET dilution series. The final permit specifies a series of five test dilutions and a control. The dilution series must include and bracket specified receiving water concentrations. One of the specified receiving water concentrations for each outfall and flow tier is based on the corresponding WET AML, and a second is based on a more-sensitive trigger for accelerated WET testing. The triggers for accelerated WET testing are based on the discharge mixing with 25% of the volume of the stream flow, without applying the TSD's statistics.

Comment #2-44 (GEI for Hecla)

RWCs are provided for Outfall 003 in the permit Table 3, however, there are no AML or MDLs in Table 2 of the permit. It is unclear how these RWCs were derived.

The accelerated testing section also states that if chronic toxicity is detected in Outfall 003 above the toxicity triggers listed in Table 4 accelerated testing must be initiated. There are no AMLs or MDLs for Outfall 003 in Table 2, the requirement is listed as "monitor and report" only, however, it appears that the toxicity ''triggers" are in fact limits if accelerated testing is to be required. Table C-9 of the Fact Sheet provides Reasonable Potential (RP) calculations for Outfall 003 resulting in no WET limits required for Outfall 003. Therefore, it is unclear why accelerated testing, and potentially TRE/TIE investigations, would be required for an outfall with no required WET limits.

In addition, these triggers appear to be based on the RWCs presented in Table 3 that we previously discussed as being incorrect. Table 2 shows the resulting TUcs calculated using the same AML calculation method as was used for Outfall 002. Furthermore, if "n" is revised to 1 or 0.17, as we discuss in Comment 5, the TU_cs would be revised even further (Table 2).

Response #2-44

The RWCs in Table 3 of the 2015 draft permit were derived based on the WET mixing zone proposed for outfall 003 in the draft Clean Water Act Section 401 certification.

However, as explained in the 2016 fact sheet at Pages B-6 and B-7, the EPA's determination in the 2015 fact sheet that the discharge from outfall 003 did not have reasonable potential for WET was made in error. The EPA therefore proposed effluent limits for WET for outfall 003 in the revised draft permit as well as RWCs that corresponded to the proposed effluent limits.

In the final permit, the EPA has changed the requirements for the WET dilution series. The final permit specifies a series of five test dilutions and a control. The dilution series must include and bracket specified receiving water concentrations. One of the specified receiving water concentrations for each outfall and flow tier is based on the AML, and a second is based on a more-sensitive trigger for accelerated WET testing. The triggers for accelerated WET testing are based on the discharge mixing with 25% of the volume of the stream flow, without applying the TSD's statistics.

Comment #2-45 (GEI for Hecla)

For Outfall 002, the permittee must begin accelerated testing if chronic toxicity is detected above the specified AML. Accelerated testing consists of four or more biweekly tests over an eight-week period. If none of the accelerated tests exceed the AML, the permittee may resume normal testing. If any of the tests exceed the AML, the toxicity reduction evaluation (TRE) requirements apply. Toxicity identification evaluations (TIEs) and TREs should only be initiated following demonstration of a "pattern of toxicity". A ''pattern of toxicity" would be better established using criteria used by other states, such as two consecutive test failures, or failure of three out of five tests (including the initial test).

Response #2-45

The implementation of a TRE in response to an exceedance of a WET trigger during accelerated testing is consistent with the recommendations of the *EPA Regions 8, 9 and 10 Toxicity Training Tool* (Denton et al. 2007). See the flowchart on Page 88. In the final permit, the permittee may return to the regular toxicity testing cycle if implementation of the initial investigation TRE workplan identifies the source of toxicity to the satisfaction of EPA.

Comment #2-46 (GEI for Hecla)

This comment concerns the requirements proposed in the 2015 draft permit to monitor for mercury concentrations in fish tissue.

Consistency with Idaho Implementation Guidance

The proposed monitoring plan for mercury in fish tissue does not follow the protocols discussed in the Idaho Department of Environmental Quality's (IDEQ) Implementation Guidance for Mercury Criteria (IDEQ 2005) nor the EPA methylmercury implementation document (EPA 2010). The IDEQ guidance notes that if total mercury concentrations in fish tissues are less than 0.24 mg/kg ww at a site, then the site should be considered non-impaired, and, as discussed in the Fact Sheet in Section VII.C, the Hecla facility should be considered a "de minimis" source of mercury. As stated in Appendix C of the 2015 Fact Sheet, the discharge does not have ''reasonable potential to cause or contribute to excursions above Idaho's fish tissue criterion for mercury" based on the historic data and the fact that the reissued permit will not authorize increased discharges of mercury. The suggested sampling frequency in the IDEQ guidance for non-impaired sites based on this criterion is once every five years. The EPA's guidance on implementation (EPA 2010) would also result in a "no reasonable potential" to exceed the tissue criterion and also states that in such a case, waterbodies should be screened once every five years, although they suggest biennial screening if resources are sufficient and commercial, recreational, or subsistence harvesting commonly occurs - none of these conditions apply to the site.

As noted in the IDEQ's guidance, the five-year interval was based in part on analysis of the data collected by GEI (formerly Chadwick Ecological Consultants [CEC]) on the Yankee Fork and Jordan Creek from 2000 through 2003 that indicated that variability within and among years in mercury concentration data in fish tissues was minimal within a given species. The guidance further states that "more frequent monitoring does not appear to be warranted", and that this sampling frequency is consistent with other states' protocols. In the Fact Sheet, the EPA states that they believe that a monitoring frequency of once every five years is inadequate to detect any trends in mercury concentrations on the Yankee Fork. We request that further discussion be provided by the EPA to indicate why there is a discrepancy between the EPA's proposed plan and the IDEQ's finding that more frequent monitoring is not needed given the

lack of any significant bioaccumulation to levels never approaching the EPA tissue criterion in over ten years of tissue monitoring.

Number of Fish Required

While we agree that the statistical analysis of any differences in mercury concentrations in fish tissues between the two Yankee Fork sites would be strengthened by the collection of ten fish per site, EPA' s suggestion to collect this number of fish from each site annually in Section E.6 of the draft permit may not be feasible based on the limited number of fish observed in the Yankee Fork, specifically at the site upstream of the discharge, as well as the restriction to not sample threatened and endangered fish species. Snorkeling surveys of three sites that were three miles or more downstream of the Jordan Creek confluence reported over 100 whitefish per site in 2001, but surveys of the two sites bracketing Outfall 003 in 2000 had substantially lower numbers of whitefish observed, with 22 fish or less at each site (CEC 2001, 2002). The draft permit does not specify that Mountain Whitefish must be the target species for collection; target species can also include other non-listed trout species and sculpin. However, the other fish species collected from these two sites in the 2000 surveys that were not federally listed species were also found in low numbers, and observations made during the whitefish surveys indicate that other trout species and sculpin of the appropriate size continue to not be abundant in this reach of the Yankee Fork. The sacrifice of these "test" species is not warranted by the facts. In addition, as discussed in more detail below, consistency with the previous data in terms of the species collected would be preferable.

Under the monitoring plan in place since 2003, the goal for each of the two sites bracketing the outfall was originally based on the need to monitor for potential selenium effects, with mercury also analyzed. Thus, the study plan was developed to collect five female Mountain Whitefish at each site. Female fish were preferred for this type of analysis based on the potential for the maternal transfer of selenium to the egg, embryo, and larval developmental stages, and gonadal tissues have been analyzed in the fish collected from each site in an effort to determine the potential for effects on reproductive success.

In the sampling events conducted annually since 2003, we have been unable to collect five female whitefish of the appropriate size from the upstream site in seven of the twelve years of sampling. In some years, male whitefish were collected instead to reach the goal of five tissue samples; however, we were unable to find any whitefish of either gender of the appropriate size in 2013, while in other years one to four fish were all we were able to collect. In order to reach the goal of five female whitefish, we have extended our sampling efforts to reaches upstream of the site as well as returning on consecutive days to resample the site. Despite this, we were still not able to collect five whitefish in some years. The habitat at the upstream site is likely limiting the abundance of whitefish, as it is homogenous, comprised mainly of riffles and runs, has few areas of undercut banks or overhanging vegetation, and has little of the pool and deep run habitat that whitefish prefer. The habitat at the downstream site is more diverse with a large, deep pool within the reach sampled. Whitefish numbers are higher at the downstream site, and five fish have been collected each year, although male fish have been substituted for female fish in some years.

As another consideration, permits for other Idaho projects that we have been involved in have specified that no more than 30 percent of a species at a site can be collected for tissue analysis during population sampling. The previous permit specifically for our work on the Yankee Fork did not include this wording in past years, but we would likely be collecting more than 30 percent of the total number of whitefish

present in these stream reaches if we collect ten fish per site. As this requirement is in place to protect fish populations from effects to the population from removal of the fish for tissue collection, following this general rule would be prudent.

Based on these past experiences, we feel that a substantial amount of additional effort would be required to attempt to locate and collect ten fish of the same species from the upstream site, and we would anticipate that even with the extra effort, we may not find ten fish in some years. Expansion of the site reach sampled would likely not increase the number of fish collected considerably based on past sampling efforts. Because of these concerns, if annual monitoring is determined to be necessary, we ask that consideration be given to continuing with the monitoring plan in place since 2003 and the goal of collecting five fish per site rather than ten fish.

Adverse Effect to Threatened and Endangered Species

We also ask that further consideration be given to modifying the monitoring requirements included in the draft permit based on the increased potential for adverse effects to the threatened fish present in the sampling area if the more intensive electrofishing becomes necessary to collect the higher number of fish tissues per site. Threatened fish species that inhabit this portion of the Yankee Fork include Chinook Salmon (Oncorhyncus tshawytscha), Bull Trout (Salvelinus confluentus), and summer Steelhead (0. mykiss). Chinook Salmon have been observed in the past at these sites, most recently in 2014, and resulted in our crew discontinuing electrofishing activities to avoid potential injury to the salmon. The more intensive sampling efforts that would likely be necessary to collect the required ten fish per site on an annual basis could potentially result in an increase in the inadvertent ''take'' of Chinook Salmon, as well as possibly the other species of concern in this area, and therefore would be inadvisable. The terms and conditions attached to the 2014 federal collection permit

for the Hecla sampling event cites that even walking in salmonid streams should be avoided when possible, especially in areas where listed salmonids are likely to spawn.

Consistency in Data Collection Efforts

We also request that consideration be given to the value of maintaining consistency in data collection efforts in the Yankee Fork with regard to the suggestion to require an increased number of fish tissues be collected from each site. We would agree that an increased number of Mountain Whitefish tissue samples at each site would be ideal, but, as discussed previously, the abundance of whitefish at the upstream Yankee Fork site is thought to be low and may preclude the collection often samples at that site. Other species of fish appear to be similarly limited in number within this reach. If, however, the decision was made to attempt to collect a different species of fish for analysis in hope that higher numbers of tissue samples could be more easily obtained, an additional source of potential variability in mercury concentrations would be introduced into the long-term dataset that would result in complications when analyzing long-term trends and comparisons between sites using the data to be collected in the future with the 2003 through 2014 data.

Development of the database over this length of time using consistent methods, amount of effort, and protocols that targets a specific size, gender, and species of fish provides a valuable resource that will be compromised to some extent if collection and analysis of a second species of fish becomes necessary due to permit limitations. Similarly, if the upstream site location were to be moved further upstream to

a stream reach with more diverse habitat, analysis of the long-term database would be complicated by the differing site locations.

Notification of Fish Tissue Exceedances

While we agree with the rapid notification of any exceedances of the 0.3 mg/kg ww human health criterion for methylmercury in fish tissues from the Yankee Fork that is included in Section I.E.8 of the draft permit, we request that the short time frames given for analysis of significant differences among sites and trends over time be extended to within 30 days of receipt of the data. A ten-day period between receipt of the laboratory analysis results and analysis of the trends seems to be an unnecessarily quick turnaround that may be difficult to comply with, given the time needed for validation and quality assurance review of the data.

Response #2-46

This comment has been addressed by changes made in the revised draft permit issued for public comment in 2016. As explained in Page 20 of the 2016 fact sheet, because of the long history of fish tissue monitoring in the watershed, which shows that fish tissue concentrations of mercury have consistently been below the water quality criterion, and because the permit includes numeric water quality-based effluent limits for mercury which are more stringent than the corresponding limits in the previous NPDES permit (for Outfall 002) and the CERCLA discharge authorization (for Outfall 003), and due to the absence of other point sources of mercury in the vicinity of this discharge, the EPA does not anticipate that fish tissue mercury concentrations will increase. Therefore, the EPA does not believe that it is necessary to require monitoring of methylmercury concentrations in fish tissue in this permit.

Other Changes to the Permit

Downstream Receiving Water Monitoring Location for Outfall 003 (Yankee Fork Creek)

On March 7, 2018, Hecla proposed to establish a new monitoring location in Yankee Fork Creek, downstream of outfall 003, because the historic monitoring site (S-10) would be impacted by the Bonanza Floodplain Reconnection Project. The new monitoring location, S-14, is closer to outfall 003 and upstream of the first new side channel that to be constructed under the Bonanza Floodplain Reconnection Project. The EPA agrees that the proposed new monitoring location will better characterize the effect of the discharge from outfall 003 upon Yankee Fork Creek and will eliminate confounding effects from the Bonanza Floodplain Reconnection Project upon water quality measured downstream from outfall 003. Therefore, the receiving water monitoring station in Yankee Fork Creek, downstream from outfall 003, has been changed from S-10 to S-14.

Terms and Conditions from Biological Opinions

The EPA has completed formal consultation with USFWS and NOAA Fisheries on the reissuance of this NPDES permit. Both Services' Biological Opinions included non-discretionary terms and conditions in their incidental take statements. These terms and conditions have been incorporated in to the permit as described below.

NOAA Fisheries Terms and Conditions

In Section 2.9.3, the NOAA Fisheries Biological Opinion specified the following reasonable and prudent measures (RPMs):

1. Minimize the potential for incidental take from the discharge of cadmium, cyanide, copper, zinc, chemical mixtures, and heat.
2. Minimize the potential for incidental take from electrofishing.
3. Ensure completion of a monitoring and reporting program to confirm that the terms and conditions in this incidental take statement (ITS) are effective in avoiding and minimizing incidental take from permitted activities and ensuring incidental take is not exceeded.

NOAA Fisheries Reasonable and Prudent Measure #1

To implement Reasonable and Prudent Measure (RPM) #1, the NOAA Fisheries Biological Opinion specified the following terms and conditions (T&C):

a. Ensure the water treatment plant (WTP) is operated and maintained in a manner that ensures optimal removal of contaminants.
b. To ensure the WTP is operating as intended, the EPA shall ensure ongoing monitoring of the effluent quality, WET (acute and chronic), and effluent flow is performed as prescribed in the proposed permit.
c. To ensure the assumptions forming the basis of this Opinion remain valid, the EPA shall ensure monitoring of the receiving streams' quality, flow, and biological communities is performed as prescribed in the proposed permit.
d. Laboratory analytical methods used for water quality samples must achieve method detection limits that are at least as low as those that have been used to date. Those are: cadmium (0.1 µg/L); copper (0.5 µg/L); WAD cyanide (2 µg/L), and zinc (2 µg/L).

The EPA believes that T&C 1.a is addressed by the existing permit language in Parts II.B, "Best Management Practices Plan" and IV.E, "Proper Operation and Maintenance." The final permit includes monitoring requirements for effluent quality, whole effluent toxicity, and flow (T&C 1.b) and receiving water quality, flow, and biological communities, consistent with T&C 1.c.

In general, the draft and proposed final permits had specified requirements for analytical sensitivity using minimum levels instead of method detection limits. To ensure compliance with T&C 1.d, the final permit specifies the listed method detection limits for cadmium, copper, cyanide, and zinc in addition to specifying minimum levels.

NOAA Fisheries Reasonable and Prudent Measure #2

To implement RPM #2, the NOAA Fisheries Biological Opinion specified the following T&Cs:

a. When performing fish sampling with electrofishing equipment the operation will be led by an experienced fisheries biologist and NOAA Fisheries' electrofishing guidelines (2000) will be followed.
b. Only direct current (DC) or pulsed direct current (PDC) will be used.
    i. If conductivity is less than 100 microseimens per centimeter (µS/cm), voltage up to 1100 volts (v) will be used. For conductivity ranges between 100 to 300 µS/cm, voltage up to 800 v will be used. For conductivity greater than 300 µS/cm, voltage will be less than 400 v.
c. Electrofishing will begin with a minimum pulse width and recommended voltage and then gradually increase to the point where fish are immobilized.
d. The anode will not intentionally contact fish while the current is being emitted.

e. Electrofishing will not occur when water temperature is warmer, or is expected to be warmer, than 64°F (17.8°C) during the sample interval.
f. Fish shall be held in containers that are adequately aerated and not overcrowded.
g. If held for extended periods of time, water shall be exchanged as necessary to maintain temperatures that mimic the stream.
h. If mortality or obvious injury (defined as dark bands on the body, spinal deformations, de-scaling of 25 percent or more of body, and torpidity or inability to maintain upright attitude after sufficient recovery time) occurs during electrofishing, operations will be immediately discontinued, machine settings, water temperature and conductivity checked, and procedures adjusted or postponed to reduce mortality.

The final permit includes these conditions in Part I.E.2.c.

NOAA Fisheries Reasonable and Prudent Measure #3

To implement RPM #3, the NOAA Fisheries Biological Opinion specified the following T&Cs:

a. The EPA shall prepare an annual aquatic biological monitoring report presenting the data and analysis of macroinvertebrate community and fish population (when performed) monitoring activities. The annual reports currently prepared by consultants for Hecla may be used to fulfill this requirement. When reporting results from the fish population monitoring, the report shall confirm the amount of incidental take (Section 2.9.1.1) exempted by this Opinion was not exceeded.
b. The EPA shall prepare an annual water quality sampling report that includes the following data for both the effluent and receiving waterbodies: water quality, temperature, and flow. The annual report shall confirm the authorized extent of incidental take exempted by this Opinion were not exceeded.
c. The EPA shall prepare an annual report summarizing the chronic and acute WET testing. The reports shall contain all relevant information described in the proposed permit. The annual reports currently prepared on behalf of Hecla may be used to fulfill this requirement.
d. If accelerated toxicity testing is performed, the EPA shall prepare a report summarizing those results within four weeks of receipt of data from Hecla. The reports shall contain all relevant information described in the proposed permit. summarizing the accelerated toxicity testing. Reports prepared by consultants for Hecla may be used to fulfill this requirement.
e. Reports prepared in accordance with 3.a, 3.b, and 3.c above shall be submitted to NOAA Fisheries by April 15 of the following year. Please submit electronic reports to: nmfswcr.srbo@noaa.gov and insert the following into the subject line: Hecla Grouse Creek Mine Monitoring Reports (WCR-2016-4509). Alternatively, paper copies may be sent to the following address:

    National Marine Fisheries Service
    Attention: WCR-2016-4509
    800 East Park Boulevard
    Plaza IV, Suite 220
    Boise, Idaho 83712

f. NOTICE: If a steelhead or salmon becomes sick, injured, or killed as a result of project-related activities, and if the fish would not benefit from rescue, the finder should leave the fish alone,

make note of any circumstances likely causing the death or injury, location and number of fish involved, and take photographs, if possible. If the fish in question appears capable of recovering if rescued, photograph the fish (if possible), transport the fish to a suitable location, and record the information described above. Adult fish should generally not be disturbed unless circumstances arise where an adult fish is obviously injured or killed by proposed activities, or some unnatural cause. The finder must contact NOAA Fisheries Law Enforcement at (206) 526-6133 as soon as possible. The finder may be asked to carry out instructions provided by Law Enforcement to collect specimens or take other measures to ensure that evidence intrinsic to the specimen is preserved.

In general, the 2016 draft permit already included requirement for an annual biomonitoring report (Part I.E.3) and an annual surface water monitoring report (Part I.D.10.b)) and reporting of WET testing (Part I.C.7). The requirement to quantify and report the amount of incidental take in T&C 3.a has been added to the final permit at Part I.E.3.d. The EPA will forward the relevant reports to NOAA Fisheries in order to comply with T&Cs 3.a – e above. T&C 3.f has been added to the final permit at Part I.E.3.g.

USFWS Terms and Conditions

In Section 2.8.3, the USFWS Biological Opinion specified the following reasonable and prudent measures (RPMs):

1. Minimize the potential for harassment, harm, and mortality to bull trout from electrofishing.
2. Minimize the potential for harassment to bull trout from elevated water temperatures in Jordan Creek and the Yankee Fork.
3. Minimize the potential for the proposed action to result in harm and mortality of sensitive bull trout life stages (i.e., eggs, alevins, and fry).

USFWS Reasonable and Prudent Measure #1

To implement RPM #1, the USFWS Biological Opinion specified the following T&Cs:

a. When performing fish sampling with electrofishing equipment the operation will be led by an experienced fisheries biologist and will follow the most current NOAA Fisheries electrofishing guidelines (2000).
b. Only direct current (DC) or pulsed direct current (PDC) will be used.
    i. If conductivity is less than 100 µS/cm, voltage up to 1100 v. will be used. For conductivity ranges between 100 to 300 µS/cm, voltage up to 800 v will be used. For conductivity greater than 300 µS/cm, voltage will be less than 400 v.
c. Electrofishing will begin with a minimum pulse width and recommended voltage and then gradually increase to the point where fish are immobilized.
d. The anode will not intentionally contact fish while the current is being emitted.
e. Electrofishing will not occur when water temperature is warmer, or is expected to be warmer, than 64ºF (17.8ºC) during the sample interval.
f. Fish shall be held in containers that are adequately aerated and not overcrowded.
g. If held for extended periods of time, water shall be exchanged as necessary to maintain temperatures that mimic the stream.
h. If mortality or obvious injury (defined as dark bands on the body, spinal deformations, de-scaling of 25 percent or more of body, and torpidity or inability to maintain upright attitude after

sufficient recovery time) occurs during electrofishing, operations will be immediately discontinued, machine settings, water temperature and conductivity checked, and procedures adjusted or postponed to reduce mortality.

These T&Cs are identical to those specified by NOAA Fisheries to implement its RPM #2, and the final permit includes these conditions in Part I.E.2.c.

USFWS Reasonable and Prudent Measure #2

To implement RPM #2, the USFWS Biological Opinion specified the following T&C:

a. Continue to monitor temperatures at S-4 and S-10/S-14, and provide the Service the seven day average of the daily maximum water temperatures for data collected between July and September.

The draft permit included conditions to monitor the stream temperatures at stations S-4 and S-10. As explained above, Station S-10 has been replaced with S-14 in the final permit. The final permit includes the additional condition that the annual report of surface water monitoring must include the 7-day averages of the daily maximum temperatures, for temperature data collected between July 1st and September 30th (Part I.D.10.b)(i)).

USFWS Reasonable and Prudent Measure #3

To implement RPM #2, the USFWS Biological Opinion specified the following T&C:

a. As soon as practicable, conduct bull trout redd surveys at and downstream of both outfall 002 and outfall 003. Use standard protocols and experienced personnel. If experts in the field determine that any areas to be surveyed are unsuitable for bull trout spawning (i.e., lack suitable substrate, stream temperatures are above 10 degrees C during the spawning season, etc.), redd surveys in these areas would not be required. Report the results to the Service as described in Section 2.8.5.

The requirement to conduct bull trout red surveys has been added to the final permit's biomonitoring requirements at Part I.E.2.d. The time frame of "as soon as practicable" is not enforceable, so the EPA has replaced this with a deadline of 1 year from the effective date of the final permit.

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Appendix A: Revised Reasonable Potential Analysis for Cyanide

				State Water Quality Standard		Max concentration at edge of...													
	Metal Criteria Translator as decimal	Metal Criteria Translator as decimal	Ambient Concentration (metals as dissolved)	Acute	Chronic	Acute Mixing Zone	Chronic Mixing Zone	LIMIT REQ'D?	Effluent percentile value		Max effluent conc. measured (metals as total recoverable)	Coeff Variation			# of samples	Multiplier	Acute Dil'n Factor	Chronic Dil'n Factor	
Parameter	Acute	Chronic	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*			*Pn*	*ug/L*	*CV*	*s*	*s^2*	*n*				COMMENTS
Cyanide <30 CFS	1.00	1.00	2.00	22.00	5.20	3.87	3.87	NO	0.99	0.979	6.00	1.01	0.837	0.700	221	1.27	3.00	3.00	25% MZ
Cyanide >30 CFS	1.00	1.00	2.00	22.00	5.20	3.87	3.87	NO	0.99	0.979	6.00	1.01	0.837	0.700	221	1.27	3.00	3.00	25% MZ