

8/19/96

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE ADMINISTRATOR

IN THE MATTER OF)	NPDES Docket Nos.
)	
1988 NPDES Permits for)	1088-05-05-402
Alaska Placer Miners)	1088-05-27-402
)	
1989 NPDES Permits for)	1089-07-29-402
Alaska Placer Miners)	
)	
1990 NPDES Permits for)	1090-07-17-402
Alaska Placer Miners)	
)	
1991 NPDES Permits for)	1091-08-19-402
Alaska Placer Miners)	

Clean Water Act -- NPDES -- Provisions in NPDES permits issued to gold placer miners in Alaska held to be sufficient with regard to effluent volume limitations. However, indirect controls for toxic metals and provisions for taking background measurements for turbidity held to be insufficient. Permits must require testing for the ten toxic metals found most frequently in Alaska placer miner effluent unless an exemption is granted. Permits must require "natural background" measurements for turbidity, and EPA must designate the location for the measurements.

Appearances

For Complainant: Joseph W. Ryan
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region X
1200 Sixth Avenue
Seattle, Washington 98181

For Trustees for Alaska
and Northern Alaska
Environmental Center: Michael M. Wenig
725 Christensen Dr., Suite 4
Anchorage, Alaska 99501

For Miners: Rosalie Rybachek, Stanley Rybachek and
Donald Stein
P.O. Box 55698
North Pole, Alaska 99705

Before

Lotis, J., Presiding Judge

INITIAL DECISION

I. Summary of Decision

A non-profit environmental group, "Trustees," challenged NPDES permits issued to Alaska placer miners in 1989 on three points. Trustees contended that the permits are insufficient with regard to (1) the wastewater recycling provision, (2) the absence of effluent limits for toxic metals other than arsenic, and (3) monitoring for turbidity.

With the inclusion of an amendment to the permits, as offered by EPA, for reporting of non-compliance, the permits are held to be sufficient with regard to the wastewater recycling requirement for limiting effluent volume.

The evidence shows that indirect controls in the permits for toxic metals are insufficient to indicate or limit levels of toxic metals in the effluent. Therefore Trustees' position that the discharges may potentially cause the Alaska water quality standards to be exceeded is upheld.

In order to meet Alaska water quality standards for turbidity, the permits must be amended to include "natural background" measurements for turbidity. The sites for such measurements must be determined by EPA for each permit on a case-by-case basis.

II. Background

This proceeding concerns permits issued by the U.S. Environmental Protection Agency (EPA) to placer miners under the National Pollutant Discharge Elimination System (NPDES). Under section 402(a)(1) of the Federal Water Pollution Control Act, 42 U.S.C. § 1342, commonly known as the Clean Water Act ("CWA"), an NPDES permit is required for the discharge of pollutants into navigable waters of the United States.

Placer mining is a method of mining alluvial or glacial deposits of loose gravel, sand, soil, clay or mud called "placers," typically in or adjacent to a stream bed. Placer deposits often contain particles of gold or other valuable minerals. Placer mining is the most common method of gold recovery. It involves directing water down a long sloped trough, the "sluice box," into which gold-bearing gravels are fed. The rapidly moving stream water allows the heavier gold bearing material to separate by gravity. The lighter sands, silts and clays become part of the wastewater, while the heaviest materials settle at the bottom of the sluice box and are periodically

removed. The non-gold bearing materials that flow out of the sluice box are either suspended in the wastewater, resulting in a decrease in water clarity (turbidity), or they eventually settle. At some point, the wastewater is discharged back into the stream.

The discharge of wastewater, or effluent, generally contains pollutants. The discharge is therefore subject to conditions set forth in NPDES permits. Section 301(b) of the CWA directs EPA to impose and enforce technology-based effluent limitations and standards. The EPA accomplishes this by means of the permit conditions.¹ For example, with regard to toxic pollutants, permits must include effluent limitations based on the best available technology economically achievable (BAT).²

The specific limitations are established in the permits on the basis of such technology-based standards, or on the basis of a more stringent limitation necessary to meet State water quality standards.³ Procedures set forth in 40 C.F.R. Part 124 govern decision making for issuance of NPDES permits and hearings for such permits. Under Subpart E of Part 124, an evidentiary hearing may be requested by any interested person to challenge an NPDES permit.

Evidentiary hearings were requested by several parties to contest certain provisions in NPDES permits issued in 1988, 1989, 1990 and 1991 to placer miners in Alaska. The parties included several placer mining permittees, the Miners Rights Action Group, the Miners' Advocacy Council, the Northern Alaska Environmental Center, and the Trustees for Alaska.⁴ The Trustees requested a hearing on certain conditions in NPDES permits issued in 1989. The Trustees claim that these conditions violate the Clean Water Act or the Alaska Water Quality Standards (AQWS).

The EPA Regional Administrator for Region 10 granted a hearing on several of the issues requested.⁵ These permit

¹ See, 40 C.F.R. Part 125.

² CWA § 301(b)(2); 40 C.F.R. § 125.3(a)(2)(iii).

³ CWA § 301(b)(1)(C); 40 C.F.R. § 122.44(d).

⁴ The latter two groups, which are non-profit public interest environmental groups, are collectively referred to herein as "Trustees." The other groups listed are collectively referred to as "Miners."

⁵ The Regional Administrator also granted requests for hearing on certain issues regarding the 1988 permits (June 30, 1989 Order), the 1989 permits (February 1, 1990 Order), the 1990

appeals were consolidated into one proceeding by Order dated May 13, 1992.

Upon retirement in September 1992 of the Administrative Law Judge originally presiding in this case, this proceeding was stayed pending reassignment. Upon redesignation to the undersigned, EPA moved to limit the scope of the hearing. By Order dated July 21, 1993, this proceeding was limited in scope to eleven specific issues.⁶

A hearing was held in Anchorage, Alaska on May 7, 1994. EPA and the Trustees filed post-hearing documents, including briefs and responsive pleadings.

Several of the eleven issues were resolved at or prior to the hearing. Pursuant to a joint pleading and stipulation by the EPA and the Miners, approved by order issued June 28, 1994, all remaining issues as they affect the Miners were dismissed from this proceeding.

The only issues remaining for resolution are issues 4, 7 and 8, raised by the Trustees with regard to the 1989 permits.⁷ The Trustees challenge the conditions in the permits as to effluent flow (Issue 4), the absence of monitoring requirements for toxic metals other than arsenic (Issue 7), and turbidity monitoring (Issue 8).

The EPA set the conditions and limitations for the 1989 permits after collecting and reviewing sampling data and evaluating the AWQS. EPA determined that the pollutants of primary concern were settleable solids, turbidity, and arsenic.⁸ Accordingly, the 1989 permits require, among other things, daily monitoring for effluent flow (or per discharge event if intermittent) and settleable solids, and once-per-season

permits (September 17, 1990 Order), and the 1991 permits (September 20, 1991 Order).

⁶ Numerical references to issues, e.g. "Issue 4," originate from the numbers assigned in the list of eleven issues identified in the July 21, 1993 Order.

⁷ It is noted that the 1989 permits expired on August 9, 1994. However, they continue in force under 40 C.F.R. § 122.6 until renewal or issuance of a new permit, provided the permittee submits an application for renewal or for a new permit. 40 C.F.R. § 122.6.

⁸ Administrative Record supporting the 1989 permits ("R.") 62, Fact Sheet for proposed 1989 permits ("Fact Sheet"), attached to Trustees' Post-Hearing Brief.

monitoring for turbidity and arsenic.⁹

III. Some Preliminary Matters

On October 28, 1994, Trustees filed a motion for oral argument on these issues, citing 40 C.F.R. § 124.85(c). That rule provides:

All direct and rebuttal evidence at an evidentiary hearing shall be submitted in written form, unless, upon motion and for good cause shown, the Presiding Officer determines that oral presentation of the evidence on any particular fact will materially assist in the efficient identification and clarification of the issues.

The motion for oral argument is denied. 40 C.F.R. § 124.85(c) provides for presentation of evidence, not for oral argument. Apart from the specific technical requirements of the rules, the presiding judge has broad authority to take all necessary measures to insure a fair and impartial decision under 40 C.F.R. § 22.04(c)(10). This would include the presentation of oral arguments if it would be helpful in reaching a decision. Here, however, issues have been briefed by the parties in multiple pleadings. The record is sufficiently clear and complete for the issues presented to be decided without oral argument.

With regard to the burden of proof, 40 C.F.R. § 124.85(a)(2) and (3) provide:

(2) The Agency has the burden of going forward to present an affirmative case in support of any challenged condition of a final permit.

(3) Any hearing participant who, by raising material issues of fact, contends:

(i) That particular conditions or requirements in the permit are improper or invalid, and who desires . . . [t]he inclusion of new or different conditions or requirements . . . (ii) . . . shall have the burden of going forward to present an affirmative case at the conclusion of the Agency case on the challenged requirement.

Thus, EPA has the burden to come forward with evidence that the conditions at issue are justified. If EPA makes a prima facie case, the burden shifts to the party who raised the issue to

⁹ Part I.A.2 of the 1989 permits, R. 390-392, attached to Trustees' Post-Hearing Brief.

prove its case.

Trustees argue that EPA's burden of presenting an affirmative case should be viewed on a "substantial evidence" standard. It is well settled that the proper standard for factual determinations in an administrative evidentiary hearing is the preponderance of evidence. That standard will be applied here. Steadman v SEC, 450 U.S. 91, 101-102 n. 21 (1981); In re NPDES Permit for City of Fayetteville, Arkansas, NPDES Appeal No. 88-1 (Second Order on Petitions for Review, December 22, 1988); In re Martin Electronics, RCRA (3008) Appeal No. 86-1 (Order on Sua Sponte Review, June 22, 1987) ("The substantial evidence standard does not apply to findings of fact in the Initial Decision"); In re Brown Wood Preserving Company, RCRA (3008) Appeal No. 86-4 (Final Decision, May 3, 1989).¹⁰

IV. Whether permit conditions I.A.2.a. and f. provide a basis for determining whether the effluent volume limitation in paragraph I.A.1.a. has been exceeded.

Part I.A.1.a of the 1989 permits reflects federal regulatory BAT limitations which require permittees to recycle that portion of wastewater which can be reused for sluicing. Specifically, the "volume of wastewater which may be discharged shall not exceed the volume of infiltration, drainage and mine drainage waters which is in excess of the make-up water required for operation of the beneficiation process."¹¹ A pump and pipe system is used to transport wastewater which has collected in a settling pond back to the sluice for reuse in the gold recovery process.

A. Position of the Parties

Trustees' position is that the permittees must confirm compliance with this "partial recycling" requirement¹² by

¹⁰ It is observed that the substantial evidence standard is mandated by statute in administrative proceedings for pesticide cancellation under the Federal Insecticide, Fungicide and Rodenticide Act § 6(d), 7 U.S.C. § 136d(d).

¹¹ 1989 Permit Part I.A.1.a; 40 C.F.R § 440.143(a).

¹² Trustees point out that the federal regulations only require recycling of that portion of the wastewater which can be reused for sluicing, and can still discharge the remaining wastewater into receiving streams. Therefore, Trustees characterize the recycling requirement as "partial." Trustees' Opposition to Motion for Partial Summary Determination, n. 21.

monitoring and submitting periodic reports. Otherwise, the flow monitoring regime in the 1989 permits is inconsistent with the CWA's technology-based provisions and permit reporting requirements.

EPA contends that compliance with Paragraph I.A.1.a is not determined by the flow monitoring required by Parts I.A.2.a and f,¹³ but with other parts of the permits. Part I.B.4 limits the amount of new water allowed to enter the plant site (for ore processing) to the minimum amount required as makeup water for processing operations. Part I.E.2 prohibits effluent discharges during periods when new water is allowed to enter the site.¹⁴

EPA contends further that compliance is also determined by visual site inspections required by Part I.A.2.b of the permits. That Part requires permittees to "institute a comprehensive visual inspection program to facilitate proper operation and maintenance of the recycle system and the wastewater treatment system." Inspections are to be performed daily during the mining season, and records thereof are required to be maintained by the miners. These records must include an evaluation of the condition of all water control and solids retention devices, and an assessment of the presence of sediment build-up within the settling ponds.¹⁵

Trustees respond that the EPA made inconsistent statements with regard to how the recycling requirement was intended to be monitored. In its comments on the draft 1989 permits, the EPA recognized Trustees' concerns over the lack of monitoring and reporting related to recycling, and consequently incorporated effluent flow monitoring (Part I.A.2.a and f) into the final permit.¹⁶ Yet, EPA now states that it is not effluent flow, but other parts of the permit upon which compliance with the

¹³ Parts I.A.2.a and f require effluent flow to be tested by instantaneous measurement in gallons per minute, at least once per day for continuous discharges or once per event for intermittent discharges. The measurements, number of discharge events and duration of discharge must be reported in an annual Discharge Monitoring Report (DMR) for each day of the mining season.

¹⁴ R. 392, 393, attachment to Trustees' Post-Hearing Brief.

¹⁵ R. 391, attachment to Trustees' Post Hearing Brief.

¹⁶ R. 462.

recycling requirement is to be determined.¹⁷ Trustees question why EPA did not believe these provisions were sufficient at the time it commented on the draft permit.

Earlier in the proceeding, EPA argued that it could enforce compliance by conducting on-site inspections, including inspections of records permittees are required to keep. However, just prior to the hearing, EPA submitted an offer to amend the permits to require the miners to report any violation of the recycling requirement "within the shortest reasonable period of time after the permittee becomes aware of the circumstances."¹⁸ EPA requests that Issue 4 be resolved according to its offer.

The Trustees do not accept the offer. The Trustees argue that the offer only requires reporting of known violations. Trustees believe that permittees may never inspect to determine compliance or may adopt insufficient measures to determine compliance. Non-compliance likely would be under-reported, Trustees predict. They suggest supplementing the offer with an EPA-prescribed method or test for determining compliance with the recycling requirement. They insist on a provision that permittees regularly perform the test and report results to EPA.

Thus, the question is whether these additional provisions are necessary in order for the permits to meet the technology-based provisions of the CWA and permit reporting requirements. Or, on the other hand, are the present conditions of the permit (the effluent flow monitoring provisions of sections I.A.2.a and f, the conditions stated in sections 1.B.4 and 1.E.2, the visual inspection requirement) and EPA's offer of non-compliance reporting condition adequate?

B. Discussion and Findings

EPA has made a prima facie showing that the 1989 permits as amended by the EPA's May 6, 1994 Offer of Judgment meet the provisions of the CWA and permit reporting requirements. Trustees' arguments are not persuasive.

40 C.F.R. § 122.44 requires each NPDES permit to include conditions meeting the applicable requirements listed thereunder. One of these requirements provides in relevant part as follows:

¹⁷ Declaration of Cindi Godsey (at 2); Motion for Summary Determination at 2-3.

¹⁸ EPA's Offers of Judgment on Trustees Issues 4 and 8, dated May 6, 1994; Transcript (Tr.) 78; 1989 Permit Part II.G, R. 397, attachment to Trustees' Post-Hearing Brief.

(2) Except as provided in paragraph (i)(4) and (i)(5) of this section, requirements to report monitoring results shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge, but in no case less than a year.

* * * *

(5) Permits which do not require the submittal of monitoring result reports at least annually shall require that the permittee report all instances of noncompliance not reported under § 122.41(l)(1), (4), (5) and (6) at least annually.

40 C.F.R. § 122.44(i)(2) and (5).

EPA reasons that the recycling scheme and non-compliance reporting requirement proposed by its offer complies with paragraph (5), so regular testing and reporting of results is not necessary.

The regulations and the 1989 permit conditions do not provide any guidance on this issue. With regard to recording and reporting of monitoring results, 40 C.F.R. § 122.48(b) provides that permits must specify required monitoring with frequency "sufficient to yield data which are representative of the monitored activity, including, when appropriate, continuous monitoring." Permits must also specify, under section 122.48(c), applicable reporting requirements "based upon the impact of the regulated activity and as specified in § 122.44." Additional monitoring requirements listed in the latter section include monitoring mass for each pollutant limited in the permit, volume of effluent discharged, and "other measurements as appropriate."¹⁹ Monitoring results must be reported annually on the Discharge Monitoring Report (DMR).²⁰ Any non-compliance which may endanger health or the environment must be reported within 24 hours of the permittee's awareness of the circumstances.²¹

No evidence or other guidance has been presented for the record on the question of whether wastewater recycling should be subject to regular testing and reporting or whether it should merely be subject to non-compliance reporting. Trustees have offered no suggestion on any type of testing that could be conducted to determine compliance with the recycling requirement, nor on the feasibility of any such testing.

¹⁹ 40 C.F.R. § 122.44(I).

²⁰ 40 C.F.R. § 122.41(l)(4); 1989 Permits Part II.B.

²¹ 40 C.F.R. § 122.41(l)(6); 1989 Permits Part II.G.

Trustees also have not shown that there is any need for any specific testing. Trustees merely speculate that the miners may not comply with the visual inspection and recycling requirements already existing in the 1989 permits. Mere speculation that water quality standards may be impaired by violations of a permit does not support a finding that the permit is insufficient as a matter of law. As noted In re NPDES Permit for City of Fayetteville, Arkansas, NPDES Appeal No. 88-1 (Order on Petitions for Review, June 28, 1988),

Speculation that Oklahoma's water quality standards might be impaired by permit violations (as opposed to being impaired by the permit itself . . .) is thus outside the scope of this proceeding. Such concerns are adequately addressed by the EPA's enforcement authority, as well as by the threat of citizen suits under 33 U.S.C.A. Section 1365.

The following provisions in the 1989 permits support wastewater recycling: effluent flow monitoring requirements in Parts I.A.2.a and f, the limitation on new water entering the site in Part I.B.4, the prohibition on effluent discharges during periods of inflowing new water in Part I.E.2, and the daily visual site inspection requirement of Part I.A.2.b. In addition, the reporting of noncompliance with the effluent limitation as proposed by EPA in its offer of judgment, supports wastewater recycling. I find no basis upon which to conclude that these requirements are insufficient, violate any applicable federal or State standard, or fail to provide an adequate basis for determining compliance with the limitation of Part I.A.1.a.

Accordingly, the permits are directed to be amended to incorporate the following, as proposed by EPA in its offer of judgment on issue 4: Permit condition II.G, Notice of Noncompliance Reporting, shall include an additional paragraph II.G.2.c, requiring permittees to report "any violation of the effluent limitation in Permit Part I.A.1.a."

V. Whether the permits are sufficient to satisfy the AWOS for toxic metals other than arsenic, when the permits do not contain effluent limits for any toxic metals other than arsenic.

A. Background

Toxic metals occur naturally in the soils of many placer mining areas in Alaska. These metals may be associated with the gold-bearing minerals. They may be released by mining into streams, where they are harmful to the aquatic life.²² The only

²² Trustees' exhibit A at 4.

restriction for metals in the 1989 permits is a limitation of 0.05 mg/l (milligrams per liter) for arsenic.²³ EPA emphasizes that the CWA does not generally require permit limitations for all pollutants. It only requires those conditions necessary to achieve water quality standards. CWA § 301(b)(1)(C) and 40 C.F.R. § 122.44(d)(1). In considering whether to include limits for toxic metals in the 1989 permits, EPA stated, "Based on past analysis of placer mining effluent data, EPA has determined that the only metal of concern is arsenic."²⁴

40 C.F.R. § 122.44(d)(1) requires each NPDES permit to include conditions meeting any requirements, in addition to or more stringent than promulgated effluent limitations guidelines or standards under the CWA, which are necessary to achieve water quality standards. Section 122.44(d)(1) provides further:

(i) Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including narrative criteria for water quality.

(ii) When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent . . . and where appropriate, the dilution of the effluent in the receiving water.

(iii) When the permitting authority determines, using the procedures in paragraph (d)(1)(ii) of this section, that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion

²³ This limitation is based on the Alaska drinking water standards, Alaska Admin. Code, Title 18 §80.050, which are the applicable AWQS for metals in some cases, and in others, standards for the protection of aquatic life are the applicable AWQS. See, Trustees' exhibit A at 9, 18, exhibit E at 7; CWA § 304(a).

²⁴ Response to Comments, Placer Mining NPDES Permits 1989 ("Response to Comments"), R. 461, attachment to Trustees' Post-Hearing Brief.

above the allowable ambient concentration of a State numeric criteria within a State water quality standard for an individual pollutant, the permit must contain effluent limits for that pollutant.

Thus the question is whether it has been shown that toxic metals "may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard."

B. Position of the Parties

EPA determined that arsenic had a reasonable potential to cause or contribute to an excursion above the AWQS. This determination was based on the naturally occurring abundance of arsenic in most Alaskan soils, and EPA's finding that reduction of settleable solids was not consistently adequate to achieve AWQS.²⁵ EPA stated that other toxic metals were found only in "trace amounts" in placer mining discharges and were therefore considered "of little significance."²⁶ Specifically, EPA found, based on available data, that metals in mining wastewater are "predominantly in the solid form" and are removed along with other solids when settleable solids are removed.²⁷

Therefore, EPA concluded that toxic metals (other than arsenic) are adequately controlled by regulation of settleable solids.²⁸ The settleable solids limit is 0.2 ml/l (milliliters per liter).²⁹ EPA observed that discharges of settleable solids (and thus toxic metals) into receiving streams are reduced by use of settlement ponds, and by recirculation (recycling) of process wastewater, as required by 40 C.F.R. § 440.143.³⁰

²⁵ Fact Sheet, R. 67; Response to Comments, R. 448.

²⁶ Fact Sheet, R 62; Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Ore Mining and Dressing Point Source Category, Gold Placer Mine Subcategory (Development Document) at 117, attachment to Trustees' Post-Hearing Brief.

²⁷ 53 Fed. Reg. 18764, 18769, 18783 (May 24, 1988).

²⁸ 53 Fed. Reg. 18764 at 18773, 18789, and 18783 (May 24, 1988).

²⁹ 40 C.F.R. § 440.142(a); 1989 Permits, paragraph I.A.1.b.

³⁰ 53 Fed. Reg. 18764 at 18769, 18780, 18783.

EPA points out that the State of Alaska has certified that the only pollutant of concern from gold placer mining is arsenic.³¹ Laurence A. Peterson, an employee of the State of Alaska, participated in the decision to certify that the 1989 permits comply with AWQS. He testified in a related State administrative proceeding, "[i]n other words, were the miners who are following the NPDES permit provisions did they - would they meet all of the metals criteria. I think they would."³² EPA argues that the Trustees have offered no evidence, from any mine site operating with recirculation technology pursuant to the 1989 permits, that the AWQS have ever been violated.

EPA asserts that the turbidity limit in the 1989 permits further assures that the AWQS are achieved. To buttress this position, EPA points to a comment on the draft 1989 permits by Dr. Jacqueline D. LaPerriere, an associate professor of fisheries and water resources at the University of Alaska. She and her associates conducted a study, funded by EPA, on gold-mining effects on heavy metals in streams. The study concluded that removal of settleable solids alone would not assure compliance with standards for toxic metals.³³ In her comments on the 1989 permits, Ms. LaPerriere explained that "non-settleable sediments that are measured indirectly by measuring turbidity, may have metals bound to the surfaces at levels exceeding the criteria for protection of aquatic life when turbidity is above the receiving water standards for the State of Alaska."³⁴ She acknowledged that the turbidity standard in the permits of 5 NTU (nephelometric turbidity units) above natural conditions is "appropriately conservative." Thus, EPA concludes that the provision for removal of settleable solids and the turbidity limit in the permits would adequately protect aquatic life.³⁵

³¹ EPA's Motion for Partial Summary Determination at 4-5.

³² Trustees' exhibit K at 42 (Proceedings Before the Commissioner of the Alaska Department of Environmental Conservation (DEC), November 14, 1990).

³³ Jacqueline LaPerriere, Stephen M. Wagener and David M. Bjerklie, "Gold-Mining Effects of Heavy Metals in Streams, Circle Quadrangle, Alaska," 21 *Water Resources Bulletin*, April 1985, p. 245, Trustees exhibit A at 4-9 (attached to Trustees' Post Hearing Reply Brief).

³⁴ Trustees' exhibit A at 2, ¶ 2 (LaPerriere comments on 1989 Permit, March 31, 1989).

³⁵ EPA cites *Rybachek v. EPA*, 904 F.2d 1276, 1292 (9th Cir. 1990). There the Ninth Circuit upheld EPA's determination that removal of solids in Alaska placer mine discharges is associated with substantial reduction of the concentration of all

Trustees' position is that EPA's reliance on indirect permit controls, namely the "partial recycling" requirement, controls on settleable solids, and turbidity, are insufficient to ensure that AQWS are complied with. Trustees assert that the correlation between settleable solids levels and metals concentrations is only rough and cannot be quantified for all mining drainages for more than one season. Moreover, Trustees assert, the controls in the permits for turbidity also do not adequately restrict levels of toxic metals.³⁶

Recycling of wastewater may raise concentrations of metals in the sluice water, which will be discharged into the receiving stream, Trustees point out. The Miners' expert witness, Laurence A. Peterson, testified in the Alaska administrative proceeding, that recycling "could cause the effluent water to be quite a bit dirtier."³⁷ After settling and recycling processes, EPA has estimated that Alaska placer miners collectively will discharge over six tons of toxic metals into Alaskan streams.³⁸

Trustees refute EPA's evidence of the relative abundance of arsenic compared to other metals in mining effluent. Arsenic is only a small fraction of all the toxic metals found in pollutants discharged from Alaska placer mines.³⁹ From the EPA's raw waste

of the toxic metals in treated wastewater. However, EPA's position here is not supported by that decision. It was based upon a challenge by the miners to BAT limitations in the permits, and does not address the degree to which those limitations effectively remove metals in order to meet AWQS.

³⁶ Trustees point to testimony of Dr. Paul Rusanowski, an expert witness for the Miners in an Alaska DEC administrative proceeding, who was asked the following question: "Turning to the discussion of the relationship between metals and turbidity, if - if I tell you that the change in turbidity above a mine, placer mine, and below a placer mine is a certain number, X, can you, based on that number, can you tell me what the metals concentrations will be below the mine?" His response was "No." Trustees' exhibit K at 57.

³⁷ Trustees' exhibit K at 15-16.

³⁸ Trustees' Opposition to Motion for Partial Summary Determination at 15; Development Document at 239.

³⁹ Development Document, p. 118, Table V-15; Trustees' exhibit A at 4-9, and at 12, 13, 17, 20: "Final Environmental Impact Statement, Kantishna Hills/ Dunkle Mine Study Report, December 1984 (this report notes, however, that the study area has comparatively higher ambient concentrations of heavy metals); Trustees' exhibit C.

data, Trustees estimate that arsenic makes up less than 0.01% by weight of all metals found in untreated Alaska placer mine effluent, and less than 10% by weight of all metals still remaining in treated effluent.⁴⁰ EPA acknowledged that recycling wastewater and controlling settleable solids do not protect the State standards for arsenic, so a specific limit for arsenic was needed in the permits. EPA stated as follows, in its Response to Comments on the 1989 permits:

Although the national effluent guidelines established an effluent limit for settleable solids only (0.2 ml/l), compliance with this guideline limitation does not automatically assure compliance with state water quality standards. In the case of arsenic, it is true that much of the arsenic settles out with the solids in the settling ponds. However . . . controlling the settleable solids to 0.2 mg/l does not always assure that arsenic will be controlled to the state water quality standard of 0.05 mg/l.⁴¹

Similarly, Trustees argue, controlling settleable solids and recycling wastewater also do not reasonably prevent excursions above the State limits for other toxic metals. Dr. LaPerriere found that not only arsenic but also other toxic metals are not adequately controlled by these methods.⁴² A study conducted in 1986 found that on a mined stream with a settleable solids level of only 0.1 ml/l, levels of arsenic, cadmium, copper, iron, nickel, zinc and mercury exceeded applicable water quality standards.⁴³

The relative abundance of arsenic does not mean that it is the only metal which has the potential to cause "an excursion" above the AWQS for metals, Trustees argue. Regulation should be site specific, as water quality based permit requirements are, rather than according to metals that are likely to be prevalent at every Alaskan placer mine or most mine sites.

Trustees urge that unless site specific evidence on the prevalence of metals in a given miner's wastewater are provided, EPA must include limits for ten or more toxic metals (generally found in mining effluent) in all of the placer mining permits. Thus, even if turbidity is used to indicate metals, such use must

⁴⁰ Id.

⁴¹ R. 448, attached to Trustees' Post Hearing Brief.

⁴² Trustees' exhibit A at 2, 9 (LaPerriere study and comments).

⁴³ Trustees' exhibit E at 5-6, 9-16.

be based upon individual site data.⁴⁴

C. Discussion and Findings

The current indirect controls on toxic metals are: (1) recycling of wastewater, (2) use of settling ponds, and (3) the limits for settleable solids and turbidity, as monitored daily for settleable solids and annually for turbidity. As the following discussion demonstrates, these indirect controls do not adequately limit levels of toxic metals in the effluent so as not to cause, have the reasonable potential to cause, or contribute to an excursion above the AWQS for any of those metals.⁴⁵ Thus, EPA has not demonstrated that toxic metals are controlled by conditions in the 1989 permits sufficiently to satisfy the AWQS for toxic metals.

Certification by the State that the permittees will comply with State standards without effluent limitations for metals (other than arsenic) is not persuasive evidence. Indeed, it begs the question. Under section 401(a)(1) of the CWA, to obtain an NPDES permit, an applicant must first obtain certification from the State that its discharge will comply with applicable provisions of the CWA. The State is not required under this section to provide absolute certainty that permittees will never violate State standards. Miner's Advocacy Council v. State of Alaska Department of Environmental Conservation, et al., 778 P.2d 1126, 1138 (Alaska, 1989). The certification may be challenged, as provided in 40 C.F.R. § 124.55, and the permit once issued may be challenged, under 40 C.F.R. Part 124 Subpart E.

In fact, Trustees were granted a hearing on the State's certification of the 1989 permits, concerning the lack of direct regulation of metals and of suspended sediment from placer mines. A State Administrative Law Judge and a Superior Court Judge ruled against Trustees regarding their contention that the 1989 permits

⁴⁴ Trustees refer to testimony of Dr. Rusanowski, who stated with regard to arsenic (but not generally as to all metals) that it is "site specific in nature of the concentrations one's dealing with." Trustees' exhibit K at 94.

⁴⁵ It is observed that the AWQS apply to individual dischargers, not to industries or groups considered as a whole. Miner's Advocacy Council v. State of Alaska Department of Environmental Conservation, et al., 778 P.2d 1126, 1133, n. 11. "No person may conduct an operation that causes or contributes to a violation of the water quality standards" Alaska Admin. Code, Title 18, § 70.010(a).

do not comply with the AWQS for metals.⁴⁶ However, Trustees assert that they have appealed the Superior Court Judge's ruling against Trustees on the metals issue. Trustees for Alaska et al. v. State of Alaska Department of Environmental Conservation, Alaska Supreme Court Docket No. S-5587.⁴⁷

The evidence shows that levels of toxic metals in placer mining effluent may cause or contribute to excursions above AWQS for metals, even where settleable solids meet the limit set forth in the 1989 permits.⁴⁸ Thus, even if most of the sediments settle from the recycled wastewater and are removed from the effluent, and levels of settleable solids do not exceed 0.2 ml/l, levels of toxic metals in the effluent still may cause the AQWS to be exceeded.

Even with the additional control for turbidity, the permits are inadequate. As the following discussion demonstrates, the annual monitoring requirement and limit for turbidity in the permits do not sufficiently assure that levels of toxic metals in the effluent will not cause or contribute to excursions above the AWQS for metals.

A study conducted on Alaska placer mines in 1987 showed that even where turbidity met the level required in the 1989 permits, applicable State standards for some toxic metals were exceeded. Approximately twelve stream sites were sampled and tested for turbidity, total suspended solids (TSS), and toxic metals. Of the sampling sites, three exceeded State standards for metals where turbidity was very low, between 2.1 and 2.3 NTU. Samples from two of the three sites had levels above the State public drinking water standard (maximum contaminant concentration) of 0.05 for chromium, namely 0.052 and 0.060 mg/l. A sample from the third site measured above the standard (maximum contaminant concentration) of 0.002 for mercury, specifically 0.003 mg/l.⁴⁹ Other studies in the record indicate levels of several toxic

⁴⁶ EPA's Post-Hearing Reply Brief at 7; Trustees' Opposition to EPA's Motion for Summary Determination, at 28, n. 26.

⁴⁷ Trustees' Opposition to EPA's Motion for Summary Determination, at 28, n. 26.

⁴⁸ Trustees exhibit A at 4-9; Trustees' exhibit E at 5-6, 9-16; Development Document at 239.

⁴⁹ Stephen F. Mack, Mary A. Moorman, Linda Harris, Alaska division of Geological and Geophysical Surveys, "Hydrologic and Water Quality Investigations Related to Placer Mining in Interior Alaska, Summer 1987," and "Water Quality and Discharge Data from Selected Sites in the Fortymile and Tolovana Drainages, Summer 1987," Trustees' exhibit B at 9 and exhibit C.

metals in mined streams exceeding AWQS, but the samples taken also exceeded State standards for turbidity and/or settleable solids.⁵⁰

The evidence shows some relationship among toxic metals, sediment, and turbidity, but it is not strong enough to support EPA's position. For example, the following statement appears in the 1983 ADEC study: "The results of heavy metal analyses indicate that heavy metals are primarily associated with suspended sediment particles. Consequently, substantial reductions in concentrations of heavy metals in receiving streams are possible either by removing suspended sediment particles from mine effluent or by preventing the discharge of sediment-laden mine effluent in receiving streams."⁵¹

Dr. Rusanowski, when asked by Miners' counsel whether there is a relationship between metals and sediment with regard to attempts to either measure or treat metal constituents in the water, testified in the State administrative proceeding, "Generally, yes. It's - it's a complex issue. However, a major portion of the measurement is associated with the presence of particulates in your samples."⁵² He further testified:

Q:If you control sediment, what would you expect that to do with regard to any mercury that might be present in the mineralized area?

Mr. Wenig: I'm sorry, when you say sediment, do you mean settleable solids or TSS [total suspended solids] or turbidity or all three or any one of them?

By Mr. Farleigh: In either form.

A: Mercury is associated with a particulate form whatever fraction it's in, which would either be the TSS or the settleable solids since the NTU is a measurement.

Q: Does particle size have some significance with regard to using sediment -- the control of sediment as a means of controlling a metal such as mercury?

A: Well, in our situation we found most of the metals have been associated with the particulate fraction. All of the

⁵⁰ Trustees' exhibit A at 13; See also exhibit E, at 5, 6, 12; and exhibit H.

⁵¹ Trustees exhibit A at 15; see also, Trustees exhibit A at 9, exhibit G at 9, 10.

⁵² Trustees' exhibit K at 63.

metals decrease in concentration if the samples are filtered versus unfiltered, so we have a significant portion associated with the metals. Being generally charged particles, not neutral, there's a tendency for the particulates to pick up metals out of the system. That doesn't hold for all metals. As mentioned earlier, zinc often times seems to be moving independently of sediment, so if you get the bulk of the sediment, you've got the bulk of the metals removed from the system. It's difficult to get the metals off of the sediments as well, so that's a good indicator of what might be available in the system.⁵³

Dr. Rusanowski's testimony refers to that of Mr. Peterson who testified in the State proceeding as follows, when asked by Trustees' counsel about which metals that could be found in Alaskan soils bind with sediments:

Gold doesn't. I don't -- I've got volumes on metals, but from the work at -- off the top of my head, zinc is a fairly mobile metal and so would -- does not -- does not combine with solids to a high degree. Below that would come cadmium, somewhat, and then you would get lead, and then iron and manganese would both be sort of at the opposite extreme of zinc, that they would either combine or be -- or oxidize and drop out of the water.⁵⁴

The above testimony does not show such a strong relationship among sediment, turbidity and toxic metals that the latter are sufficiently controlled by the conditions in the 1989 permits.

Furthermore, Dr. LaPerriere's conclusions and recommendations in her published study⁵⁵ and her comments as a whole, do not support EPA's position. From analysis of samples taken in 1982 and 1983,⁵⁶ the study found that placer mining caused downstream increases in concentration of arsenic, lead, zinc and copper, and of dissolved arsenic and zinc.⁵⁷ Excessive concentrations of metals were found at a site where settleable solids were almost undetectable, but where turbidity, measuring

⁵³ Id. at 73-74.

⁵⁴ Trustees' exhibit K at 33-34.

⁵⁵ Trustees' exhibit A at 2-9.

⁵⁶ It is observed that in 1982 and 1983, there was little or no control of wastewater, such as by use of settling ponds and recycling. Trustees' exhibit K at 40-41.

⁵⁷ Trustees exhibit A at 5, 7, 9.

from 53 to 310 NTU, exceeded the State limits. The study concluded that "No concentrations routinely exceeding the criteria for arsenic, lead, or zinc were found at any of our sites . . . where turbidity was below the State standard for the protection of aquatic life [25 NTU above background]" (emphasis added).⁵⁸

The recommendation based upon the study is that turbidity measurements might be used to monitor for the metals "[i]f correlations can be developed (perhaps they would have to be site-specific) between turbidity and individual heavy metals" (emphasis added).⁵⁹ That recommendation is also qualified by Dr. LaPerriere's comment that "[d]aily monitoring of turbidity should be required through the permit."⁶⁰

There is no evidence in the record that correlations have been developed between turbidity and individual metals associated with Alaska placer mining. Monitoring for turbidity is required only once per season, not daily, in the 1989 permits.

Furthermore, one seasonal measurement may not accurately reflect actual or representative levels of turbidity. Mr. Peterson testified in the State proceeding that measuring turbidity is difficult, and takes time and training to learn. Even after his 20 years of experience of measuring turbidity, he testified, "I still sometimes wonder if I'm getting the right numbers."⁶¹ In addition, he stated that good laboratory practice would dictate that a turbidimeter would have to be sent away to be recalibrated probably once a year.⁶²

Mr. Alan Townsend testified in the State proceeding that based on his experience inspecting placer mines over the years, turbidity levels can vary at a placer mine during the course of a season.⁶³ Mr. Peterson testified similarly about physical factors which cause variations in turbidity levels.⁶⁴ For

⁵⁸ Id. at 9.

⁵⁹ Id. It was noted in the study that turbidity measurements are relatively easier to obtain and less expensive than heavy metals measurements.

⁶⁰ Trustees exhibit A at 2, ¶ 3.

⁶¹ Trustees' exhibit K at 28-29.

⁶² Id. at 20.

⁶³ Id. at 117-119.

⁶⁴ Id. at 20, 29-31.

example, temperature, velocity of flow, geology, drainage, volcanic activity, different materials in any given area within a mining location, rainfall, aquifers, upset, broken equipment, and storms may significantly affect turbidity.

Therefore, even assuming that correlations were drawn between turbidity measurements and levels of toxic metals, such measurements cannot be reliable indicators of toxic metals where turbidity is measured only once per season.

Moreover, the turbidity limits in many of the 1989 permits exceed the standard which Dr. LaPerriere considered to be "appropriately conservative." EPA has modified the turbidity limits in a number of 1989 permits to be less stringent.⁶⁵ Mr. Peterson testified: "EPA has gone up to 7300 and some odd turbidity units in -- as an effluent limit."⁶⁶ Trustees assert that the number of permits so modified exceeds 300.⁶⁷ As the evidence shows, with greater turbidity, higher levels of metals are likely to be in the effluent. Consequently, at least with respect to these modified permits, an assumption that toxic metals are below AWQS in the receiving stream cannot be made on the basis that the permit limit for turbidity is met.

EPA fails to support its decision not to include in the permits specific limits for toxic metals other than arsenic. The evidence and testimony of record, including the conditions in the 1989 permits, and the evidence of variability of toxic metals found in placer mining effluent, has been taken into account. A preponderance of the evidence shows that several toxic metals may be discharged from placer mines subject to the 1989 permits at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above State water quality standards for toxic metals other than arsenic. I find that the 1989 permits are not sufficient to satisfy the AWQS for toxic metals other than arsenic.

Accordingly, effluent limits for metals in addition to arsenic must be included in the 1989 permits in order to satisfy the AWQS for these metals. Due to the variety of metals which the evidence shows may be elevated in mining discharges, the

⁶⁵ Tr. 97-98. In proposing the 1989 permits, EPA stated that it would consider modifying the NTU limitation to account for the dilution effects of the receiving stream, where the permittee provides site-specific information to justify a less stringent turbidity limit. Fact Sheet at 6, R. 65; Tr. 97.

⁶⁶ Trustees' exhibit K at 52-53.

⁶⁷ R. 440-46; Response to Comments at 4, R. 450; Trustees' Post-hearing reply brief at 4.

permits must include limits not only for arsenic but also for nine other toxic metals which are most frequently found in Alaska placer mining effluent. EPA must select these nine metals based upon their prevalence in effluent from Alaska placer mines which are subject to settling pond and wastewater recycling requirements. The nine metals, as well as arsenic, must be monitored seasonally and results reported on the Discharge Monitoring Report (DMR). The permits shall also provide that a permittee may be exempted from this monitoring requirement, as to any or all of the ten metals, if he submits sufficient site-specific information on the prevalence of metals in the effluent from his mine to justify such an exemption.

VI. Whether the reporting scheme, based on comparison of turbidity levels at the discharge point and at a point immediately above a placer mine, rather than a point above the highest placer mine on a given stream (condition I.A.2.c. of the permits) provides a sufficient indication of whether the AOWS for turbidity has been met.

A. Background

Turbidity causes impairment of aquatic ecosystems by blocking the flow of light, and injuring aquatic organisms through direct contact, and by preventing vertical mixing which is necessary to disperse dissolved oxygen and nutrients to lower portions of a water body.⁶⁸

Alaska's water quality standard for turbidity restricts the allowable level of turbidity in receiving waters attributable to placer mining. It allows a certain incremental increase in turbidity from all sources above "natural conditions," which is defined as the stream condition without any human-caused pollution.

Specifically, Title 18 of the Alaska Administrative Code, § 70.020(b)(1)(B)(I)(4) provides:

Turbidity shall not exceed 5 NTU above natural conditions when the natural turbidity is 50 NTU or less, and more than 10% increase in turbidity when the natural condition is more than 50 NTU, not to exceed a maximum increase of 15 NTU.

"Natural conditions" are defined as those conditions of a water body "before any human-caused discharge to, or addition of material to, the water." Alaska Admin. Code, Title 18 §

⁶⁸ Development Document at 134-135.

70.110(29).

Part I.A.2.a of the 1989 permits requires miners to monitor turbidity once per season by a grab sample of effluent and of "background" turbidity values. According to Part I.A.2.c, the background value is to be "taken above the discharge point at a location that is representative of the receiving stream." The effluent sample and background sample must be taken on the same day "within a reasonable time frame, i.e. within twenty minutes to one-half hour." Part I.F.1 of the permits define "background" as "above the effluent discharge point at a location that is representative of the receiving stream before being impacted by the mining operation."

B. Position of the Parties

The Trustees assert that the definition in the permits of "background" violates the AWQS. The Trustees point out that the permits allow the background measurement to be taken at a site immediately above a given mine, without accounting for any other mining or other human-caused sources of turbidity upstream from that mine. Therefore, they request that the miners must use a point on a watershed which is above all human-caused disturbances as a "natural background."

EPA adopted this view in its 1993 Alaska placer miner permits.⁶⁹

EPA submitted an offer (Tr. 78) on this issue, to amend the permits, as follows:

The permittee shall monitor the turbidity values of the effluent stream and the natural background turbidity values of the receiving stream [sic] then compare the two samples. The sample results shall be reported on the annual Discharge Monitoring Report.

The Permittee shall take one sample at a point that is representative of the discharge prior to entering the receiving stream. The Permittee shall take another sample above the discharge point at a location that is considered to be the natural background of the receiving stream. Natural Background means the level upstream from all mining and other man-made disturbances.

Upon request of the permittee, EPA will designate a point at which the permittee ought to measure the

⁶⁹ Tr. 132; Trustees' exhibit I at 3, 5; exhibit J at 2; EPA's exhibit 1 at 3.

turbidity of the natural condition of the stream. In determining the sample point, EPA will consider, with the input of the permittee and/or the Alaska Division of Mining, geologic factors, drainage patterns, access, and the location of active and historic man-made disturbances. Both samples shall be taken within a reasonable time frame. Monitoring shall be conducted in accordance with accepted analytical procedures. See attachment 1 for sampling protocol.

EPA requested that this issue be resolved according to this offer. On September 22, 1994, EPA agreed to Trustees' request that the term "background" in parts I.A.1.b. and I.A.2.a. be changed to "natural background." EPA acknowledged that other issues regarding turbidity monitoring remain for resolution in this proceeding.

The Trustees respond that EPA's offer still has important flaws. First, it allows miners to choose natural background designations in a manner and timing that will render the turbidity limit unenforceable as a practical matter. The miners would not be required to inform EPA of the locations they chose for measuring natural background or to justify how they chose the locations. Unable to determine whether the miners made the correct location choice, EPA could not enforce the requirement that miners measure "natural background."

Second, the miners would not be required to take their once-per-season measurements of turbidity until after commencing mining. After the end of the mining season, the measurements must be reported. Only then would EPA would have a chance to evaluate the adequacy of the miners' choice of locations for measuring background. No further corrections could be made in that mining season. If EPA does not know the proper natural background turbidity level, it cannot determine whether the effluent turbidity measurement is within the allowable increment above natural background.

Third, because the permittee would not be required to have EPA's concurrence of the background sampling location prior to mining, a miner's technical misjudgment of that location is not likely to be penalized in an EPA enforcement suit.

Therefore, Trustees urge that EPA designate in the permit the location for monitoring natural conditions based upon miners' site specific evidence. Trustees request that the proposed sampling locations be subject to public notice and comment before mining commences. This would allow the miners an opportunity to demonstrate the appropriate naturally occurring turbidity levels relative to their mines. Trustees argue that the approach for measuring turbidity as set forth in EPA's offer would effectively deprive the public of notice and an opportunity to comment on the

turbidity limit, which violates the CWA and implementing regulations.

Trustees cite section 402(a) of the CWA, allowing issuance of NPDES permits only after a public hearing, and section 101(e), which states that "Public participation in the development, revision and enforcement of any regulation, standard, effluent limitation, plan, or program established by the Administrator or any State . . . shall be provided for, encouraged, and assisted by the Administrator and the States."

Trustees point to Supreme Court and federal court opinions construing legislative history of the CWA as revealing Congress's desire that the public be given considerable input into EPA's water programs. Costle v. Pacific Legal Foundation, 455 U.S. 198, 215 (1979), *reh'g denied*, 446 U.S. 947; NRDC, et al. v. EPA, 859 F.2d 156, 175, 177 (D.C. Cir. 1988).

EPA responds that when Trustees requested a hearing they did not raise the issue of public notice and comment on the process of measuring background turbidity. Trustees merely proposed that the permits state that background should be measured at a point above the highest placer mine on a given stream. EPA asserts that the deadline for raising the issue of public notice and comment was several years ago. 40 C.F.R. § 124.13 provides that all persons "who believe any condition of a draft permit is inappropriate . . . must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period . . . under 124.10."

C. Discussion and Findings

Neither the conditions in the 1989 permits nor the EPA's offer adequately protect the AWQS for turbidity. Trustees' position is well taken. However, its argument with respect to public notice and comment was made too late and will be rejected.

The record suggests the difficulties and potential for misjudgment in the miners' selection of natural background sampling locations, and the difficulties in taking samples within a reasonable time frame. EPA in its 1989 Response to Comments acknowledged that a determination of natural background would be difficult to make.⁷⁰

Steven C. Borell, a mining engineer registered in the State of Alaska, stated in his declaration that background samples taken at points above the highest placer mine on the stream,

⁷⁰ Declaration of Cindi Godsey, EPA exhibit 1 ¶ 6.

"would result in ambiguous permit conditions that could not be uniformly applied or complied with," and that such conditions are "not enforceable."⁷¹ There are natural as well as man-made variables which affect turbidity levels, such as tributaries and flooding.⁷² Mr. Borell described the many difficulties of finding an appropriate sampling location, such as primitive or unavailable road access, and determining historic, temporary or shut-down mining activity, road construction or other man-made disturbances. He stated that it would be physically impossible to sample both effluent and background within a reasonable time frame.⁷³

Ms. Rosalie A. Rybachek, who has been involved in placer mining in Alaska since 1961, testified to the difficulty of traveling long distances over sometimes roadless areas in order to obtain a background sample. She emphasized the resultant impossibility of taking samples within a reasonable time frame.⁷⁴

The "natural background" sampling location is an important and complex issue, and should not be left merely to the miner's discretion either to determine or to request EPA to determine. There would not appear to be any incentive for a miner to request EPA to make such a determination, particularly where it is unlikely that any misjudgment on the part of the miner would be penalized. Recognizing the difficulty in determining the natural background location for an individual miner, EPA in consultation with the State and the permittees shall be required to make such determinations for each permit.

In sum, EPA has not shown by a preponderance of the evidence that the turbidity provisions as set forth in the 1989 permits, or in the EPA's offer of judgment, protect the AWQS for turbidity.

⁷¹ EPA's exhibit 4 ¶ 3.

⁷² Id. ¶¶ 4, 8.

⁷³ Id. ¶¶ 9, 13, 14.

⁷⁴ EPA's exhibit 4.

V. Conclusion and Order

1. EPA is entitled to judgment on Issue Number 4. The flow monitoring regime required by paragraphs 1.A.2.a. and 1.A.2.f. is sufficient to determine whether the effluent volume limitation in paragraph 1.A.1.a. has been exceeded. As agreed by EPA in its offer of judgment, Permit Condition II.G., "Notice of Noncompliance Reporting," is modified to include an additional paragraph II.G.2.c, requiring permittees to report "any violation of the effluent limitation in Permit Part I.A.1.a."

2. Trustees are entitled to judgment on Issue Number 7. I find and conclude that the 1989 permits are not sufficient to meet the AWQS for toxic metals. Accordingly, EPA is directed to determine the nine toxic metals which in addition to arsenic are found most frequently in Alaska placer mining effluent, and to set effluent limitations for each of those metals. Each of the 1989 permits is modified to include: (1) effluent limitations for the additional nine toxic metals found most frequently in Alaska placer mining effluent, (2) requirements for the permittee to sample effluent once per season and report sample results on the Annual Discharge Monitoring Report for each of the ten metals, and (3) a provision that the permittee may be granted an exemption from this monitoring requirement, as to any or all of the ten metals, if sufficient site-specific information is submitted on the prevalence of metals in the effluent to justify such an exemption.

3. Trustees are entitled to judgment on Issue Number 8. The reporting scheme in the NPDES permits does not provide a sufficient indication of whether the AQWS for turbidity has been met. Accordingly, "natural background" is substituted for the word "background" in permit conditions I.A.1.b, I.A.2.a and I.A.2.c. In section I.F, the definition of "background" is deleted. The turbidity provision in the 1989 permits, paragraph I.a.2.c, is modified as follows:

c. Turbidity Monitoring

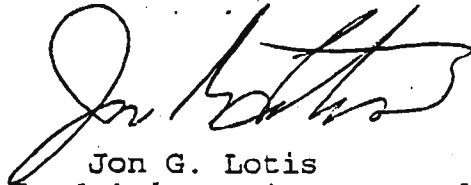
The Permittee shall monitor the turbidity values of the effluent stream and the natural background turbidity values of the receiving stream, then compare the two samples. The sample results shall be reported on the annual Discharge Monitoring Report (DMR).

The Permittee shall take one sample at a point that is representative of the discharge prior to entering the receiving stream. The Permittee shall take another sample above the discharge point at a location that is considered to be the natural background of the receiving stream.

Natural background means the level upstream from all mining and other man-made disturbances.

EPA shall designate the point at which the permittee must take a sample to measure natural background turbidity of the stream. In determining the sample point, EPA will consider, with the input of the permittee and/or the Alaska Division of Mining, geologic factors, drainage patterns, access, and the location of active and historic man-made disturbances. Both samples shall be taken within a reasonable time frame. Monitoring shall be conducted in accordance with accepted analytical procedures. See attachment 1 for sampling protocol.

4. Under 40 C.F.R. § 124.89(b), this decision will become the final decision of the Agency 30 days after the date of service of this decision unless either it is appealed in accordance with 40 C.F.R. § 124.91(a) or the Environmental Appeals Board elects, *sua sponte*, to review it as provided in 40 C.F.R. § 124.91(b).



Jon G. Lotis
Chief Administrative Law Judge

Dated: August 19, 1996
Washington, D.C.