Fact Sheet

NPDES Permit Number: AKG-37-0000
Date: April 21, 2005
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The U.S. Environmental Protection Agency (EPA) Plans To Re-issue A Wastewater Discharge Permit To:

Alaska Mechanical Placer Miners

This will also serve as a notice of a
FINDING OF NO SIGNIFICANT IMPACT (FNSI),

and

NOTICE OF STATE CERTIFICATION
and
provide information on the
ALASKA COASTAL MANAGEMENT PROGRAM

EPA Proposes NPDES Permit Re-issuance.

EPA proposes to re-issue a *National Pollutant Discharge Elimination System* (NPDES) General Permit to Alaska Mechanical Placer Miners for gold placer mining operations in Alaska. The draft permit sets conditions on the discharge - or release - of pollutants from operations into waters of the United States. EPA's goal is to have this permit become effective as the 2000 GP expires. If this occurs then EPA is proposing to automatically cover anyone who submitted a timely NOI for reapplication under the 2000 GP. If the GP does not go into effect in October, EPA would make a determination at the time of re-issuance whether a new NOI would be necessary for coverage.

This Fact Sheet includes:

- ❄ information on public comment, public hearing, and appeal procedures
- ❄ a description of the industry
- ❄ a description of proposed effluent limitations, monitoring requirements, and other conditions.

Finding of No Significant Impact (FNSI)

In compliance with EPA headquarter guidance for re-issued NPDES permits, the EPA Region 10 NEPA Compliance Program has evaluated the proposed changes to the NPDES permit and balanced the need to re-evaluate the NEPA analysis. EPA Region 10 has determined that the previous Environmental Assessment for placer Mining developed in December 1993 does not need to be amended with a new NEPA analysis, as the draft permit conditions for the re-issued NPDES permit are not significantly different from the previous permit.

The State of Alaska certification.

The Alaska Department of Environmental Conservation (ADEC) has provided a draft certification of this NPDES general permit under section 401 of the Clean Water Act. This document may be found in Appendix A.

Consistency Determination

This GP was previously found consistent on June 23, 2000. On January 13, 2005, EPA requested information on the Alaska Coastal Management Program (ACMP) review. On March 2, 2005, the Department of Natural Resources/Office of Project Management and Permitting (OPMP) sent a response letter. In its response, OPMP stated that with the minor proposed changes to the GP, a new ACMP review is not required.

EPA invites comments on the draft permit and FNSI.

EPA will consider all substantive comments before issuing a final permit. Those wishing to comment on the draft permit, FNSI, or request a public hearing may do so in writing by the public notice expiration date. Please submit comments to USEPA-Region 10, 1200 Sixth Avenue, OWW-130, Seattle, Washington 98101. Comments may be submitted by e-mail to godsey.cindi@epa.gov or faxed to (206) 553-0165. All comments should include name, address, phone number, a concise statement of basis for the comment and relevant facts upon which it is based. A request for public hearing must state the nature of the issues to be raised as well as the requester's name, address and telephone number.

Persons wishing to comment on State Certification should submit written comments by the public notice expiration date to Luke Boles at the Alaska Department of Environmental Conservation, 610 University Avenue, Fairbanks, Alaska 99709. Mr. Boles may be reached by phone at (907) 451-2142 or by e-mail at boles.luke@dec.state.ak.us

For information on the ACMP review process, please contact Ms Amanda Henry at DNR/OPMP, 550 W. 7th Avenue, Suite 1660, Anchorage, AK, 99501 or at (907) 269-7468.

A General Permit follows rulemaking procedures so EPA's issuance and promulgation activities must be conducted in accordance with the Administrative Procedure Act (APA). The modifications in this general permit will become effective 30 days after publication of the final general permit in the Federal Register according to Section 553(d) of the APA. Anyone wishing to appeal this general permit must do so in court according to 40 CFR §124.19. Interested persons may challenge the modifications, within 120 days of issuance, in the Circuit Court of Appeals of the United States under Section 509(b)(1) of the Act.

Documents are available for review.

The draft NPDES permit and fact sheet can be reviewed at EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday. This material is also available for inspection and copying at the following places in Alaska:

USEPA Alaska Operations Office
Federal Building, Room 537
222 West 7th Avenue
Anchorage, Alaska 99513-7588
Telephone: (800) 781-0983 (Within Alaska)

USEPA Alaska Operations Office
410 Willoughby Avenue, Suite 100
Juneau, Alaska 99801
Telephone: (907) 586-7619

ADEC Watershed Development Program
Air and Water Quality Division
610 University Avenue
Fairbanks, AK 99709
Telephone: (907) 451-2142

Copies of the draft permit and fact sheet can be found on the EPA, Region 10 website at http://www.epa.gov/r10earth/waterpermits.htm (click on draft permits, then Alaska).

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LIST OF ACRONYMS

AAC	Alaska Administrative Code
ACMP	Alaska Coastal Management Program
ADEC	Alaska Department of Environmental Conservation
ADNR	Alaska Department of Natural Resources
AR	Annual Report
AWQS	Alaska Water Quality Standard
BAT/BCT	Best Available Technology/Best Conventional Technology
BMP	Best Management Practices
BPJ	Best Professional Judgement
CFR	Code of Federal Regulations
CSU	Conservation System Unit
CWA	Clean Water Act
DNR	Department of Natural Resources
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FR	Federal Register
GPM	gallons per minute
MCL	Maximum Contaminant Level
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
NTU	Nephelometric Turbidity Unit
OHMP	Office of Habitat Management and Permitting
OPMP	Office of Project Management and Permitting
SPCC	Spill Prevention Control and Countermeasure
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey

I. GENERAL PERMITS

A. Permit Coverage

1. Section 301(a) of the Clean Water Act (CWA) provides that the discharge of pollutants is unlawful except in accordance with a National Pollutant Discharge Elimination System (NPDES) permit. Although such permits are usually issued to individual dischargers, EPA's regulations also authorize the issuance of "general permits" to categories of discharges [40 CFR 122.28] when a number of point sources are:

    a. Located within the same geographic area and warrant similar pollution control measures;

    b. Involve the same or substantially similar types of operations;

    c. Discharge the same types of wastes;

    d. Require the same effluent limitations or operating conditions;

    e. Require the same or similar monitoring requirements; and

    f. In the opinion of the Director, are more appropriately controlled under a general permit than under individual permits.

2. Like individual permits, a violation of a condition contained in a general permit constitutes a violation of the Act and subjects the owner or operator of the permitted facility to the penalties specified in Section 309 of the Act.

3. A Notice of Intent (NOI) to be covered under this General Permit (GP) is required [40 CFR 122.28(b)(2)(i)] for facilities that did not submit an NOI under the expiring permit. The requirements are outlined in Permit Part I.A. and an NOI information sheet is Appendix A of the GP.

4. This GP will expire five (5) years from the date of effective date. 40 CFR 122.28(b)(1) allows a general permit to be administered according to the individual permit regulations found in 40 CFR 124 so the general permit will continue in force and effect until a new general permit is issued. Only those facilities authorized to discharge under the expiring GP that submit an NOI at least 90 days prior to the expiration of the GP are covered by the continued permit.

5. EPA is proposing that all facilities covered by the 2000 GP retain authorization under this GP if all NOI procedures are followed.

6. This GP, like the 2000 GP, proposes coverage for operations that use hydraulicking to remove overburden or to mine. Such coverage would be subject to the no discharge requirements of the GP.

B. Limitations on Coverage

1. Many streams and stream reaches in Alaska have been designated as part of the federal wild and scenic rivers system or as a Conservation System Unit (CSU). Because this permit does not relieve a permittee of the requirements of other applicable federal, state or local laws, permittees should contact the district offices of the agencies that administer these systems for additional restrictions that may apply to operations on claims within these designated areas.

2. Many streams in Alaska have been designated by Alaska Department of Natural Resources, Office of Habitat and Permitting (OHMP) as needing a permit with additional restrictions. Because this GP does not relieve a permittee of the requirements of other applicable federal, state or local laws, permittees should contact OHMP. See Section IV.B.4. of this Fact Sheet for more information.

C. Prohibitions

1. This GP does not apply to facilities that are proposed to be located in National Parks System Units (i.e., Parks and Preserves), National Monuments, National Sanctuaries, National Wildlife Refuges, National Conservation Areas, Wilderness Areas, or National Critical Habitat Areas.

   This constitutes a change to the 2000 GP which also included “waters adjacent to the boundaries of areas designated as wild under the Wild & Scenic Rivers Act” in this section. EPA, Region 10, has issued several individual permits with the same requirements as the GP to facilities in this designated area. EPA has never received a comment on a draft permit that indicated special requirements were necessary for operating in these areas. So EPA is proposing to remove this prohibition from the GP. If compelling comments are received contrary to this action, EPA will consider them in finalizing this GP.

2. This permit does not apply to wetlands designated in the 1995 Anchorage Wetlands Management Plan.

3. Hydraulicking facilities that have a discharge are not covered by the draft GP and would need to apply for an individual permit.

4. Discharges from the following beneficiation processes are not authorized under this permit: mercury amalgamation, cyanidation, froth floatation, heap and vat leaching.

D. Individual Permits

1. Owners or operators covered by a general permit may be excepted from coverage by applying to the Director of the NPDES program for an individual permit. This request must be made by submitting an NPDES permit application, together with supporting documentation within 90 days of publication by EPA of a final general permit in the Federal Register, or 180 days prior to the commencement of operation of a new source or new discharger.

2. The Director may require any person authorized by a general permit to apply for and obtain an individual permit, or any interested person may petition the Director to take this action. The Director may consider the issuance of an individual permit when:

   a. The single discharge or the cumulative number of discharges is/are a significant contributor of pollution;

   b. The discharger is not in compliance with the terms and conditions of the general permit;

   c. A change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the point source;

   d. Effluent limitation guidelines are subsequently promulgated for the point sources covered by the general permit;

   e. A Water Quality Management plan containing requirements applicable to such point sources is approved; or

   f. Circumstances have changed since the time of the request to be covered so that the discharger is no longer appropriately controlled under the general permit, or either a temporary or permanent reduction or elimination of the authorized discharge is necessary.

E. New Source Notification Requirements

EPA has decided that the changes to the Mechanical GP are not significant enough to warrant a new Environmental Assessment (EA) under the National Environmental Policy Act (NEPA). At this time EPA is issuing a

Finding of No Significant Impact (FNSI) based on the EA issued in December 1993.

An NOI must be submitted by January 1 of the year of discharge from a new facility or a facility established since 1988 subject to New Source Performance Standards (NSPS) that has not previously been covered by a permit. Each new source will have an EA prepared to make a determination of impacts in compliance with NEPA.

II. REGULATORY HISTORY OF PLACER MINING IN ALASKA

Regulation of discharges from gold placer mining operations in Alaska has been a matter of controversy since enactment of the Clean Water Act. Starting in 1976 and 1977, EPA issued approximately 170 individual NPDES permits to Alaskan gold placer miners. Those permits were challenged administratively. Some parties argued that the permits were not stringent enough, others argued that the permits were too stringent. EPA issued an additional 269 individual NPDES permits for gold placer mining in 1983. All of those permits were challenged judicially in Trustees for Alaska v. EPA, 749 F.2d 549 (9th Cir. 1984).

EPA issued a new round of individual permits (446 in total) in 1984 to replace expiring permits and to incorporate new promulgated regulations. In 1985, EPA modified the 1984 permits, based on the Trustee for Alaska decision, and issued 93 additional permits. In 1987, EPA issued an additional 368 new permits. The 1987 permits were the subject of litigation based on allegations that EPA and the State unreasonably delayed acting on requests for hearings on those permits in Stein v. Kelso, Case No. F89-21 Civil (D.Alaska) (litigation against EPA). The case against EPA was eventually dismissed as moot on April 12, 1990.

The permits EPA issued in 1985 and 1987 were challenged administratively and ultimately, judicially in Ackels v. EPA, 7 F.3d 862 (9th Cir. 1993). A decision by the State of Alaska to certify the 1985 permits was ultimately resolved by the Alaska Supreme Court in Miners Advocacy Council, Inc. v. State Dep't of Envtl. Conservation, 778 P.2d 1126 (Alaska 1989), cert. denied, 493 U.S. 1077 (1990). The State's certification of the 1987 permits was also challenged in Stein v. Kelso, 846 P.2d 123 (Alaska 1993).

EPA also was sued in the United States District Court for the District of Alaska in 1986. That case raised a variety of statutory and constitutional issues, that were ultimately dismissed or resolved in the federal courts. One of the concerns raised in the 1986 litigation, whether EPA had a duty to promulgate national effluent limitations guidelines for the gold placer mining point source category, was eventually resolved when EPA published such guidelines in 1988. (See 40 CFR Part 440 Subpart M). Those guidelines were the subject of litigation in Rybachek v. EPA, 904 F.2d 1276 (9th Cir. 1990).

On June 30, 1992, EPA received a notice of citizen suit, alleging that EPA failed to perform a non-discretionary duty to regulate suction dredge gold placer mining operations in Alaska. At that time, EPA decided it would issue individual permits for mechanical placer mining operations (for the 1993 mining season) and propose a general permit for suction dredge operations. On January 14, 1994, EPA proposed a general permit that extended coverage to mechanical as well as suction dredge operations [59 FR 2504 (Jan. 14, 1994)]. After responding to public comment, EPA issued the final general permit on May 13, 1994 [59 FR 28079 (May 31, 1994)]. On September 28, 1994, two environmental groups filed a petition for review of the general permit in the Ninth Circuit Court of Appeals.

On November 18, 1996, EPA and the two environmental groups entered into a settlement agreement to resolve the challenge to the general permit. Pursuant to the agreement, EPA agreed to issue three separate general permits to modify and supersede the original general permit challenged by the environmental groups in 1994. The settlement agreement also required EPA to complete two studies related to the impact of placer mining on the natural environment in Alaska. One study was to address the discharge of metals by placer mining operations and the other was to address the impact of suction dredge mining.

EPA issued three modified general permits on December 6, 1996, one for mechanical operations, one for medium-size suction dredge operations, and one for small suction dredges [61 FR 64796, December 6, 1996]. On April 4, 1997, three environmental groups challenged these permits. No. 97-70365 (9th Cir). In a separate action, the Alaska Miners Association (AMA) also challenged the general permits. No. 97-70379 (9th Cir.). These cases were consolidated on May 5, 1997. The challenge by the AMA was dismissed on January 21, 1999.

During the summers of 1997 and 1998 EPA staff and EPA contractors collected data at 31 placer mine sites and several suction dredge sites. These data were analyzed and presented in two final reports, one entitled “Alaska Placer Mining Metals Study” and the other entitled “Impact of suction dredging on water quality, benthic habitat, and biota in the Fortymile River, Resurrection Creek, and Chatanika River, Alaska.” The environmental groups believed that the suction dredge report did not address all of the required elements as set out in the 1996 settlement agreement.

To avoid further litigation over the general permits, EPA and the environmental groups entered into another settlement agreement. Pursuant to the agreement, EPA agreed that further study was necessary to quantify the full impact of suction dredge mining on the natural environment and that further research should be conducted before conclusions are reached about the impact of suction dredge mining on Alaska streams. EPA further agreed that by January 7, 2000, it would transmit to the Federal Register any necessary revisions to the modified general permits to address the results of the metals study. As a result, the environmental groups’ petition to review the three general permits was dismissed on August 31, 1999.

EPA transmitted the 2000 draft general permit to the Federal Register on January 7, 2000. The draft GP was published in the FR on January 14, 2000. The final GP was published on August 31, 2000. The permit was effective on October 3, 2000.

As of February 2005, 340 operations have active coverage under the GP. Re-notice, according to the 2000 GP, should occur by July 5, 2005 (90 day prior to the expiration date).

III. INDUSTRY DESCRIPTION

Placer mining involves the mining and extraction of gold or other heavy metals and minerals primarily from alluvial deposits. These deposits may be in existing stream beds or ancient, often buried, stream deposits, i.e. paleo or fossil placers. Many Alaskan placer deposits consist of unconsolidated clay, sand, gravel, cobble and boulders that contain very small amounts of native gold or other precious metals. Most are stream deposits that occur along present stream valleys or on benches or terraces above existing streams. Beach placer deposits have been and continue to be important producers in Alaska. These deposits, most notable near Nome, include both submerged and elevated beach placer deposits.

Essential components of placer mining include overburden removal, mining of the gold placer gravels, and processing (gold recovery).

1. *Overburden Removal*

   Various types of overburden include barren alluvial gravels, broken slide rock, or glacial deposits. In some parts of Alaska the pay gravels are overlaid by silty, organic-rich deposits of barren, frozen material generally comprised of wind-blown particles (loess). Particularly high ice content is common. Most facilities utilize mechanical methods for removal of overburden because they generally use the same excavating equipment for mining.

   Overburden can also be removed by hydraulicking. Hydraulicking consists of the loosening of material by water delivered under pressure through a hydraulic giant (monitor).

2. *Mining Methods*

   Placer mining methods include both dredging systems and open-cut mining.

   Dredging systems are classified as hydraulic or mechanical (including bucket dredging), depending on the methods of digging. Suction dredges, the most common hydraulic dredging system, are quite

popular in Alaska with the small or recreational gold placer miner. Like all floating dredges, suction dredges consist of a supporting hull with a mining control system, excavating and lifting mechanism, gold recovery circuits, and waste disposal system. All floating dredges are designed to work as a unit to dig, classify, beneficiate ores and dispose of waste. Because suction dredges work the stream bed rather than stream banks, the discharge from suction dredges consists totally of stream water and bed material.

Open-cut methods commonly used in Alaska involve the use of bulldozers to remove overburden, push pay dirt to sluiceboxes, stack tailing and construct ditches ponds and roads. At some sites, loaders are used to move material.

3. *Processing Methods*

A large percentage of the present gold placer mining operations use some type of sluice box to perform the primary processing function, beneficiation. An increasing number of jig plants are also being used at open-cut mines. Many operations make use of feed size classification that involves the physical separation of large rocks and boulders from smaller materials such as gravel and sand. The object of classification is to prevent the processing of large-sized material that is unlikely to contain gold values. Commonly used classification equipment includes: grizzlies, trommels and static or vibrating screens. The most common gold recovery method is sluicing. A sluice is a long, sloped trough into which water is directed to separate gold from ore. A slurry of water and ore flows down the sluice and the gold, due to its relatively high density, is trapped in riffles along the sluice.

IV. RECEIVING WATER

The receiving waters are the waters of United States and the State of Alaska most of which are classified in the Alaska Water Quality Standards [18 AAC 70] (AWQS) as Classes (1)(A), (B), (C), and (D) for use in drinking, culinary and food processing, agriculture, aquaculture, and industrial water supply; contact and secondary recreation; and growth and propagation of fish, shellfish, other aquatic life, and wildlife.

Some of the receiving waters have been reclassified as industrial use only. These are Isabell Creek (upper), Lillian Creek, Lucille Creek, Olive Creek (upper), and Ruth Creek near Livengood and Nolan Creek and all its tributaries excluding Acme Creek near Wiseman.

This permit will be available for dischargers in reclassified waters. The AWQS contained in this permit are more stringent than would be applied in an individual permit in these locations. A facility located on any of the above receiving water

may apply to ADEC for a turbidity and/or arsenic modification or for an individual NPDES permit under Section I.D.1.

V. EFFLUENT LIMITATIONS

In establishing permit limits, EPA first determines which technology-based limits must be incorporated into the permit. EPA then evaluates the effluent quality expected to result from these controls to see if it could result in any exceedences of the water quality standards in the receiving water. If exceedences could occur, EPA must include water quality-based limits in the permit. The draft permit limits will reflect whichever requirements (technology-based or water quality-based) are more stringent.

A. No Discharge Facilities:

Increasingly, EPA has received NOIs for permit coverage that indicate the facilities are no discharge facilities except in the case of a precipitation related event. In 1998, a review of NOIs showed that 42% stated zero effluent flow while an additional 18% reported flows of less than 50 gallons per minute (gpm). EPA received 340 NOIs during the 5 year cycle of this GP. Of these 340, 168 or 49% indicated there would be no discharge. An additional 4 NOIs indicated flows of less than 20 gpm.

Because a storm exemption gives the permittee relief from the technology-based requirements of the regulations and the receiving water is expected to be similarly affected by the precipitation event, EPA has determined that numeric effluent limitations are not necessary. Instead, a "no discharge" provision with a storm exemption is included in the draft GP and Best Management Practices (BMPs) have been developed.

These BMPs are supplemented by required effluent monitoring in the event of a discharge. The frequency of effluent monitoring will indicate whether the design size requirement should be reevaluated in future permitting actions.

If a discharge occurs during dry weather, EPA would require the facility to follow the requirements of the permit for Discharging Facilities.

B. Discharging Facilities

For the purpose of this permit, discharged wastewater consists of incidental waters commingled with process waters used to move the ore to and through the beneficiation process, water used to aid in classification, and water used in gravity separation.

1. Technology-Based Limitations

Pursuant to 40 CFR 440.143, BAT and NSPS requirements are as

follows:

a. The concentration of settleable solids in wastewater discharged from an open-cut mine plant or a dredge plant site must not exceed an instantaneous maximum of 0.2 ml/L.

b. The volume of wastewater that may be discharged from an open-cut mine plant or dredge plant site must not exceed the volume of infiltration, drainage and mine drainage waters that is in excess of the make-up water required for operation of the beneficiation process.

The effect of this requirement is to prohibit the discharge of any wastewater during periods when new water is allowed to enter the plant site.

These technology-based requirements are specified in Permit Part II.B.

2. Water Quality-Based Limits

EPA has concluded, based on review of the WQS and available sampling data, that turbidity and arsenic must be limited in order to meet the State WQS.

a. *Turbidity*:

According to the WQS, the most restrictive turbidity criteria applies to fresh water sources classified for water contact recreation uses. This criterion [18 AAC 70.020(b)(1)(B)(i)] state that 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." The criterion for Water Supply, Drinking, Culinary and Food Processing [18 AAC 70.020(1)(A)(i)] is identical except that the maximum increase is 25 NTUs.

The draft GP contains a turbidity limit that would assure compliance with water quality standards under worst case conditions. That is, the turbidity in the effluent must not be more than 5 NTUs above the background turbidity level in the receiving stream. This condition accounts for naturally occurring turbidity in the receiving water and allows the effluent to contain an additional 5 NTUs of turbidity where the receiving water is naturally turbid. The permit condition does not account for those situations where naturally occurring turbidity would allow an increase of up to 15 NTUs, nor does it account for the dilution effects of the receiving

stream. The reason for assuming worst case conditions is that EPA does not have current site-specific information to establish end-of-pipe limitations for each of the permits being processed.

Although worst case conditions are assumed in the draft permit, EPA will consider modifying the turbidity limitation to account for the dilution effects of the receiving stream. EPA will include turbidity modifications on receipt of an individual 401 Certification of a mixing zone from ADEC.

b. Arsenic

The arsenic effluent limitation is based on the "Withdrawal from Federal Regulations of the Applicability to Alaska's Waters of Human Health Criteria" which was published in the Federal Register on March 2, 1998 [63 FR 10140] and became effective on April 1, 1998. This rulemaking withdrew the human health criteria for arsenic for Alaska and made the drinking water maximum contaminant level (MCL) of 50 µg/L the applicable standard protective of the designated uses of the receiving waters covered by the GP.

The effluent limitation proposed for arsenic is a daily maximum limit of 50 µg/L. This is based on the Primary Drinking Water MCL applicable through 18 AAC 70.020(1)(A) for Toxic and other Deleterious Organic and Inorganic Substances. EPA defines the MCL as the *"maximum permissible level of a contaminant"* (40 CFR 142.2) so it is included as an instantaneous maximum limit.

The EPA MCL for arsenic is now 10 ug/L (66 FR 6975 as clarified in 68 FR 14501). The state of Alaska Drinking Water Program is planning to adopt this new standard during 2005. If the standard has been incorporated into the WQS before the permit is finalized, the arsenic limit in the GP will be 10 ug/L based on the drinking water use in 18 AAC 70.020 including primary drinking water MCL.

VI. Monitoring Requirements

Section 308 of the Clean Water Act and the federal regulations at 40 CFR § 122.44(i) require that permits include monitoring to determine compliance with permit requirements. Monitoring may also be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality. The permittee is responsible for conducting the monitoring and for reporting results to EPA.

A. No Discharge Facilities

The draft permit requires one turbidity sample of the discharge and upstream of the discharge point during a discharge event. One sample of the discharge for arsenic is also required. The required daily facility inspection to ensure compliance with the BMPs in Permit Part II.D. assures that the facility will discharge only in those instances when precipitation is excessive.

B. Discharging Facilities

The draft GP requires an annual arsenic sample in addition to daily settleable solids sampling.

The data collected between 1997 and 1998 for EPA's Metals Study were reviewed for the preparation of a recommendation paper entitled "Permit Recommendations Resulting from EPA's Metals Study." In this paper, EPA recognized that turbidity can be used as a surrogate for metals levels in the effluent of placer mines. To use turbidity as an effective surrogate, the proposed monitoring frequency is being increased to three times per week. The results of the Metals Study as well as the recommendations paper are discussed further in Appendix C.

The reporting requirement is based on 40 CFR § 122.48 which is specified in the permit as a submission of an Annual Report (AR) by January 31st of each year for the previous year's activities.

VII. BEST MANAGEMENT PRACTICES (BMPs)

BMPs are measures that are intended to prevent or minimize the generation and the potential for the release of pollutants from industrial facilities to the waters of the United States through normal operations and ancillary activities.

Pursuant to Section 301(b)(2) of the Clean Water Act, effluent guidelines were developed for the Category Ore Mining and Dressing Industry, Subcategory of Placer Mining that includes BMPs. BMPs, in addition to numerical effluent limitations, are required to control or abate the discharge of pollutants in accordance with 40 CFR § 122.44(k). Most of the BMPs in the draft permit are part of the Placer Mining Effluent Limitation Guidelines found at 40 CFR 440 Subpart M.

The draft permit requires compliance with the following BMPs:

A. The flow of surface waters (i.e., creek, river, or stream) into the plant site shall be interrupted and these waters diverted around and away to prevent incursion into the plant site.

The intent of this BMP is to avoid contamination of nonprocess water,

reduce the volume of water requiring treatment and maximize the retention time and the capacity of the settling ponds. The diversion must totally circumvent any gold recovery units, treatment facilities, etc.

B. Berms, including any pond walls, dikes, low dams, and similar water retention structures shall be constructed in a manner such that they are reasonably expected to reject the passage of water.

This BMP ensures that water retention devices are constructed appropriately. This may be achieved by utilizing on-site material in a manner that the fine sealing material (such as clays) are mixed in the berms with coarser materials. Berms should be toed into the underlying earth, constructed in layers or lifts and each layer thoroughly compacted to ensure mechanical and watertight integrity. Other impermeable material such as plastic sheets or membranes may be used inside the berms when sealing fines are unavailable or in short supply. The side slope of berms should not be greater than the natural angle of repose of the materials used in the berms or a slope of 2:1, whichever is flatter.

C. Measures shall be taken to assure that pollutant materials removed from the process water and wastewater streams will be retained in storage areas and not discharged or released to the waters of the United States.

The intent of this BMP is to ensure that the investment in pollution control pays the maximum benefit in terms of reduced pollutant volumes reaching water of the United States. These measures may include location of the storage ponds and storage areas to assure that they will not be washed out by reasonably predictable flooding or by the return of a relocated stream to its original stream bed. Materials removed from settling ponds should be placed in bermed areas where liquids from the materials cannot flow overland to waters of the United States. It may be necessary, in some cases, to collect such liquids and pump or divert them back to the settling pond for treatment. This requirement applies both during the active mining season and at all other times until reclamation is completed.

D. The amount of new water allowed to enter the plant site for use in material processing shall be limited to the minimum amount required as makeup water.

This requirement provides some of the same benefits as diverting water discussed in paragraph A, above. It reduces the volume of water requiring treatment, maximizes the capacity of the settling ponds, and assures that the amount of wastewater that is discharged is kept to a minimum.

E. All water control devices such as diversion structures and berms and all solids retention structures such as berms, dikes, pond structures, and dams shall be reasonably maintained to continue their effectiveness and to protect from failure.

The provisions of this BMP will ensure that water control devices are adequately maintained. This specifies that structures should be inspected on a regular basis for any signs of structural weakness or incipient failure. Whenever such weakness or incipient failure becomes evident, repair or augmentation of the structure to reasonably ensure against catastrophic failure must be made immediately.

F. The operator shall take whatever reasonable steps are appropriate to assure that, after the mining season, all unreclaimed mine areas, including ponds, are in a condition that will not cause degradation to the receiving waters over those resulting from natural causes.

The purpose of this requirement is to assure that all reasonable measures are taken to decrease the amount of pollutants being discharged to waters of the United States.

G. During each mining season, a permittee may not discharge into the receiving water within three hundred feet of any other upstream or downstream placer mining operation which is discharging or from which it is apparent that a discharge has occurred. Nor may a permittee discharge at a point within three hundred feet of the downstream edge of a mixing zone granted for any other upstream placer mining operation.

This requirement will ensure that there are areas of unimpacted substrate that exists between operations so that habitat is available for fish and the invertebrates upon which they prey.

H. Care shall be taken by the operator during refueling operations to prevent spillage into surface waters or to groundwater. Any spills shall be cleaned up using materials such as sorbent pads and booms. All spills shall be reported to DEC by calling 1-800-478-9300.

This requirement is included based on ADEC's draft §401 Certification which states: Under 18 AAC 75.300: a person must notify the [ADEC] by telephone immediately in the result of a release or discharge of a hazardous substance.

VIII. OTHER PERMIT CONDITIONS

A. Oil Spill Requirements

Section 311 of the Act prohibits the discharge of oil and hazardous materials in harmful quantities. The operator shall maintain fuel handling and storage facilities in a manner that will prevent the discharge of fuel oil into the receiving waters. A Spill Prevention Control and Countermeasure Plan (SPCC Plan) must be prepared and updated as necessary in accordance with the provisions of 40 CFR Part 112 for facilities with a storage capacity of 660 gallons in a single container above ground, 1320 gallons in the aggregate above ground, or 42,000 gallons below ground.

The Permittee must indicate in the AR if an SPCC Plan is necessary and in place at the site and if changes were made to the Plan over the previous year.

B. Endangered Species Act (ESA)

ESA requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered (T&E) species. EPA sent a letter to the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service on January 3, 2005, requesting a species list for the coverage area of the general permit.

In a letter dated February 23, 2005, NMFS stated that there are no marine mammals under their jurisdiction that will be affected by mining operations in freshwater streams. Since this GP is not applicable to marine waters, EPA has determined that no adverse effect to NMFS ESA species will result from the issuance of this permit.

In a letter dated February 23, 2005, USFWS listed several T&E species for Alaska along with one proposed (P) and one candidate (C) species. Their table included the short-tailed albatross (E, Gulf of Alaska, Aleutians, Bering Sea coast), Aleutian Shield Fern (E, Adak Island), Spectacled eider (T, W&N coastal Alaska), Steller's eider (T, southwestern, western and northern), Norther Sea Otter - SW Alaska population (P, Aleutian Islands, AK peninsula, Kodiak Island), and Kittlitz's Murrelet (C, coastal waters southern & northwestern Alaska). USFWS concluded that this project is not likely to adversely impact list species so no further consultation is necessary.

C. Essential Fish Habitat (EFH)

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act set forth a number of new mandates for NMFS, regional fishery management councils and other federal agencies to identify and

protect important marine and anadromous fish habitat. The action agency (in this case, EPA) must determine whether its actions may adversely impact EFH.

The most likely harm to come to fish as a result of placer mining is sediment loading or decreased light penetration cause by elevated instream turbidity. Since a facility in compliance with this draft GP is not expected to cause significantly elevated sediment loads or instream turbidity, EPA has determined that no adverse effect to EFH will result from the issuance of this permit.

D. Consistency Determination

This GP was previously found consistent on June 23, 2000. On January 13, 2005, EPA requested information on the Alaska Coastal Management Program (ACMP) review. On March 2, 2005, the Department of Natural Resources/Office of Project Management and Permitting (OPMP) sent a response letter. In its response, OPMP stated that with the minor proposed changes to the GP, a new ACMP review is not required.

E. State Certification

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

The Alaska Department of Environmental Conservation has provided a draft certification which has been included in this Fact Sheet as Appendix A. If the state authorizes different or additional conditions as part of the final certification, the permit may be changed to reflect these conditions.

F. Permit Expiration

This permit will expire five years from the effective date of the permit.

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR
410 Willoughby Avenue, Suite 303
Juneau, AK 99801-1795
PHONE: (907) 465-5175
FAX: (907) 465-5177

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
WASTEWATER DISCHARGE PROGRAM

February 16, 2005

Mike Lidgard
NPDES Unit Manager
USEPA
1200 Sixth Avenue
Seattle WA, 98101

ADEC Files: 900.60.001
900.68.002

RE: Draft 401 Certification of NPDES General Permits AKG-37-0000 and AKG-37-1000

Dear Mr. Lidgard;

On January 12, 2005 EPA Region 10 requested draft 401 certifications for the renewal of NPDES General Permits AKG-37-0000 and AKG-37-1000, regulating discharges from placer mining activities in Alaska.

The ADEC has enclosed the Draft Certificates of Reasonable Assurance to include as drafts in the public notice process. These draft 401 certifications were created using the current NPDES General Permits as preliminary draft permits. I look forward to working with your staff on the renewal of these General Permits.

If you have any questions regarding these draft certifications please contact me at 907-451-2142 or at luke_boles@dec.state.ak.us.

Sincerely,

SIGNATURE ON FILE

Luke Boles
Environmental Engineering Associate
Wastewater Discharge Program

Enclosures: Draft Certificates of Reasonable Assurance for NPDES General Permits AKG-37-0000 and AKG-37-1000.

CC:
Cindi Godsey, EPA, Anchorage
Sharmon Stambaugh, ADEC, Anchorage
Steve McGroarty, ADNR/DMLW, Fairbanks
Jack Kerin, ADNR/DMLW, Fairbanks
Mac McLean, ADNR/OHMP, Fairbanks
Bill Jefferss, ADNR/OPMP, Anchorage

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DRAFT CERTIFICATE OF REASONABLE ASSURANCE

A Certificate of Reasonable Assurance, as required by Section 401 of the Clean Water Act, has been requested by EPA, Region 10, for NPDES Permit No. AKG-37-0000, MECHANICAL PLACER MINING IN ALASKA

Public Notice of the application for this certification will be made in accordance with 18 AAC 15.140.

Water Quality Certification is required for the proposed activity because the activity will be authorized by an EPA permit identified as No. AKG-37-0000 and a discharge may result from the proposed activity.

Having reviewed the preliminary draft permit, the Alaska Department of Environmental Conservation certifies that there is reasonable assurance that the proposed activity, as well as any discharge that may result, is in compliance with the requirements of Section 401 of the Clean Water Act, which includes the Alaska Water Quality Standards (18 AAC 70), provided that the following stipulations are adhered to:

1. The ADEC authorizes the language contained in section II.B.4 allowing permittees to apply for a turbidity mixing zone.

Rationale: In accordance with State Regulations 18 AAC 70.240, the Department has authority to designate mixing zones in permits or certifications. Any authorized mixing zones will ensure that the water quality standards are met at all points outside of the mixing zone.

2. Add the following language to section II.D as BMP #8:

Care shall be taken by the operator during equipment refueling to prevent spillage into surface waters or to groundwater. **Any spills shall be cleaned up using materials such as sorbent pads and booms. All spills shall be reported to DEC by calling 1-800-478-9300.**

Rationale: Under 18 AAC 75.300: a person must notify the [ADEC] by telephone immediately in the result of a release or discharge of a hazardous substance.

February 23, 2005
Date

DRAFT
Gretchen Keiser
Program Manager
Wastewater Discharge Program

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DRAFT CERTIFICATE OF REASONABLE ASSURANCE

A Certificate of Reasonable Assurance, as required by Section 401 of the Clean Water Act, has been requested by EPA for NPDES Permit No. AKG-37-1000, ALASKA MEDIUM-SIZE SUCTION DREDGE PLACER MINERS

Public Notice of the application for this certification will be made in accordance with 18 AAC 15.140.

Water Quality Certification is required for the proposed activity because the activity will be authorized by an EPA permit identified as No. AKG-37-1000 and a discharge may result from the proposed activity.

Having reviewed the preliminary draft permit, the Alaska Department of Environmental Conservation certifies that there is reasonable assurance that the proposed activity, as well as any discharge that may result, is in compliance with the requirements of Section 401 of the Clean Water Act, which includes the Alaska Water Quality Standards (18 AAC 70), provided that the following stipulations are adhered to:

1. The ADEC authorizes the 500 feet mixing zone for turbidity contained in section II.A and the monitoring requirements contained in section II.B.1 of the draft permit.

Rationale: In accordance with State Regulations 18 AAC 70.240, the Department has authority to designate mixing zones in permits or certifications. This mixing zone will ensure that the water quality standards are met at all points outside of the mixing zone.

The Department considered all aspects required in 18 AAC 70.015 (Antidegradation) and 18 AAC 70.240-270 (Mixing Zones) including, but not limited to, the potential risk to human health and ecological resources of receiving waters and mixing zone modeling of the predicted effluent quality from the discharge.

The Department finds that the size of the mixing zone authorized for discharge in this certification is appropriate and provides reasonable assurance that existing uses of the receiving waters outside of the mixing zone are maintained and fully protected.

2. Amend section II.C.8 as noted in bold:

Care shall be taken by the operator during refueling of the dredge to prevent spillage into surface waters or to groundwater. **Any spills shall be cleaned up using materials such as sorbent pads and booms. All spills shall be reported to DEC by calling 1-800-478-9300.**

Rationale: Under 18 AAC 75.300: a person must notify the [ADEC] by telephone immediately in the result of a release or discharge of a hazardous substance.

February 23, 2005
Date

DRAFT
Gretchen Keiser
Program Manager
Wastewater Discharge Program

APPENDIX B -- BASIS FOR EFFLUENT LIMITATIONS

A. No Discharge Facilities:

1. Technology-based Limitations: Best Professional Judgement (BPJ) Determination

EPA has determined that a no discharge requirement with a storm exemption and BMPs should serve as a basis for Best Available Technology/Best Conventional Technology (BAT/BCT) effluent limitations. This determination is based on the following considerations:

a. Age of equipment and facilities, processes involved.

Regardless of the age of the facilities, mechanical operations and hydraulicking facilities operate similarly. Settling ponds are incorporated into the process to handle the amounts of water and material used.

b. Engineering aspects of the application of various types of control techniques; process changes

Many of the operations submitting NOIs in the past have indicated that the only discharge that would occur is precipitation related. EPA issued three individual “no discharge” permits to hydraulickers in 1999. The permittees at the time indicated that there would be no discharges except in the event of extreme precipitation. At this time, no other potential treatment methods are being considered as a basis for BAT at these facilities.

c. Cost Considerations

Since Region 10's determination that the currently utilized treatment technology will be utilized as BAT/BCT treatment for these facilities, there is no incremental cost involved in attaining the technology-based limits of the draft permit.

B. Discharging facilities:

1. Technology-based effluent limitations

The CWA requires industries to apply treatment technology representing BAT that is economically achievable. The BAT and the New Source Performance Standards (NSPS) [40 CFR 440 Subpart M] requirements specify the use of settling ponds plus total recirculation of process wastewater as the selected treatment technology. However, the regulation does allow the discharge of incidental waters (including waters that enter a mine through precipitation, snow melt, drainage water, ground water infiltration and the melting of permafrost) that have

commingled with process waters, provided that these incidental waters are in excess of the make-up water required, are treated in settling ponds and do not exceed 0.2 ml/L settleable solids prior to discharge.

2. Water Quality-based Limitations

Section 301(b)(1)(c) of the Act requires the imposition of ". . . any more stringent limitation, including those necessary to meet water quality standards, . . . or required to implement any applicable water quality standard established pursuant to this Act" by July 1, 1977. All discharges to state waters must comply with state and local coastal management plans as well as with state water quality standards, including the state's antidegradation policy. Discharges to state waters must also comply with limitations imposed by the state as part of its coastal management program consistency determination and of its certification of NPDES permits under section 401 of the Act.

The NPDES regulations at 40 CFR 122.44(d)(1) require that permits include water quality-based limits that "Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality."

EPA has concluded, based on review of the WQS and available sampling data, that turbidity and arsenic must be limited in order to meet the State WQS.

a. Turbidity: The most stringent turbidity standard, 5 NTUs above the natural condition, is found in 18 AAC 70.020(b)(12)(A)(i) protects for the drinking, culinary and food supply use. The WQS allow for a mixing zone approved by ADEC.

The basic form of this equation is:

$$Q_1C_1 + Q_2C_2 = Q_3C_3,$$

where C_1 = upstream turbidity;
C_2 = effluent turbidity;
C_3 = downstream turbidity after mixing where the allowable increase is 5 NTU above background (C_1 + 5 NTU);
Q_1 = stream flow downstream from any diversion and upstream from the discharge;
Q_2 = effluent flow; and,
Q_3 = total stream flow downstream from discharge after complete mixing.

b. Arsenic: The most stringent arsenic standard is 50 ug/L found Table I of the *Alaska Water Quality Criteria Manual* as referenced in 18 AAC 70.020(b)(11)(A)(i) protects for the drinking, culinary and food supply use. Currently, the ADEC Drinking Water

Program is in the process of adopting a new drinking water standard. If this new standard (10 ug/L) is incorporated into the WQS prior to the final issuance of this GP, the new standard would become the permit effluent limit. Permittees may request a modified arsenic limit reflecting the arsenic concentrations naturally present in the receiving waters as determined by ADEC. The provisions for this determination may be found in Permit Part II.B.6.a.

C. Pursuant to Section 301(b)(2) of the Act and 40 CFR 122.44(k)(3), BMPs are being proposed in the permit. These practices are reasonably necessary to carry out the Act's goals of eliminating the discharge of pollutants as much as practicable and to maintain water quality.

APPENDIX C -- REFERENCES

EPA, NPDES Permit Writer's Manual. Office of Water, Office of Wastewater Management, Permits Division. Washington, DC. 20460; EPA-833-B-96-003, December 1996, 220pp.

EPA, Technical Support Document for Water Quality-based Toxics Control. Office of Water Enforcement and Permits, Office of Water Regulations and Standards. Washington, DC, 20460; EPA/505/2-90-001, March 1991, 145pp.

EPA, Alaska Placer Mining Metals Study. Office of Environmental Assessment, Region 10, Seattle, Washington 98101; EPA910-R-98-003, April 1998.

EPA, Alaska Placer Mining Metals Study - Year Two. Office of Environmental Assessment, Region 10, Seattle, Washington 98101; EPA910-R-99-004, April 1999.

EPA, "Permit Recommendations Resulting from the EPA Metals Study." Office of Water, Region 10, Anchorage, Alaska 99513; unpublished, December 1999.

Society of Mining Engineers, Mining Engineering Handbook, 1973.

Administrative Record for the 2000 Re-issuance of the NPDES GP for Mechanical Placer Mining in Alaska (AKG-37-0000).