

**Department of Environmental Conservation
Response to Comments**

for the

Medium Suction Dredge Placer Miners General Permit

APDES Permit No. AKG371000

Public Notice: March 25, 2021 – April 26, 2021

May 14, 2021



Alaska Department of Environmental Conservation
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501

1.0 Introduction

1.1 Summary of the Permit

The Medium Suction Dredge Placer Miners General Permit (AKG371000) authorizes discharges of wastewater from suction dredges with intake diameters greater than six inches and less than or equal to ten inches that process gold placer ores and rely on beneficiation processes based on gravity separation. The permit provides statewide coverage for discharges to fresh and marine waters of the U.S., with certain limitations. Fact Sheet Sections 1.0 and 2.0 provide additional coverage information and regulatory history. Specific conditions under which pollutants may be discharged are detailed in the permit and further explained in the fact sheet.

1.2 Opportunities for Public Participation

The Alaska Department of Environmental Conservation (DEC or the Department) proposed to reissue an Alaska Pollutant Discharge Elimination System (APDES) wastewater discharge permit for the discharges from medium suction dredge placer miners. To ensure public, agency, and tribal notification and opportunities for participation, the Department:

- identified the permit on the annual Permit Issuance Plan posted online at: <https://dec.alaska.gov/water/wastewater/pip/>;
- notified, via letter, fax and/or email, potentially affected tribes, and local governments that the Department would be working on the permit;
- posted a preliminary draft of the permit on-line for a 10-day applicant review on February 24, 2021 and notified potential permittees, tribes, local governments, and other agencies, including the Alaska Department of Fish and Game (ADF&G), the Alaska Department of Natural Resources (DNR), the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (USFWS), and the U.S. Environmental Protection Agency (EPA);
- formally published public notice of the draft permit in three newspapers (*Anchorage Daily News*, *Fairbanks Daily News-Miner*, and *The Nome Nugget*), posted the public notice on the Department's public notice web page, and distributed the public notice to potential permittees, tribes, local governments, and other agencies;
- posted the proposed final permit on-line for a 5-day applicant review on May 14, 2021 and notified potential permittees, tribes, local governments, and other agencies; and
- sent email notifications via the APDES Program List Serve when the preliminary draft, draft, and proposed final permit were available for review.

The Department received written comments on the draft permit from the following interested parties: U.S. Fish and Wildlife Service (USFWS) and Chickaloon Village Traditional Council (CVTC).

This document summarizes the comments submitted and the justification for any action taken or not taken by the Department in response to the comments. Commenter references are included within the comment summaries. Significant changes are identified herein and reflected in the final permit and fact sheet. Minor changes (such as formatting, typos, contact information, or minor wording edits) are not addressed within this document but may be included in the final permit and fact sheet.

2.0 General Comments

2.1 Comment – Freshwater Mussels

One comment voiced concern regarding the potential negative of impacts of dredging on freshwater mussels and noted that “since the effects of placer mining and suction dredging on freshwater mussels are not well understood or documented, as well as their distribution and abundance, more information is needed.” The comment encouraged DEC to consider working with the U.S. Fish and Wildlife Service and other agencies to develop a monitoring program to gain a better understanding of freshwater mussels in Alaska. (USFWS)

Response:

DEC appreciates the USFWS concern regarding the effects of dredging on freshwater mussels and is open to the possibility of assisting natural resource agencies to conduct field studies, as department resources and duties allow. No changes were made to the permit or fact sheet as a result of this comment.

2.2 Comment – Copper and Zinc

One comment referenced the Fact Sheet (Section 4.2 and Appendix A) regarding a suction dredge study in the Fortymile River area. The comment asked if “copper and zinc (were) measured in their dissolved form downstream to determine the point at which they diluted to below state WQS? Copper and zinc are known to have behavioral impacts on fish and aquatic life at low levels; is there a map of streams where this could be a risk from suction dredging?” (CVTC)

Response:

Regarding the studies referenced in Fact Sheet Section 4.2 and Appendix A, copper and zinc were measured in their dissolved form downstream of the dredge to determine values to relative upstream levels. Because dredges only discharge *in situ* water, the downstream values are measured relative to upstream ambient conditions (e.g., upstream samples). DEC is unaware of a map showing stream locations where suction dredging may have behavioral impact risk on fish and aquatic life due to copper and zinc. To ensure dredging does not adversely affect fish, permittees must

also contact ADF&G and obtain any necessary Fish Habitat Permits (Permit Part 1.5.5) prior to discharging. No changes were made to the permit or fact sheet as a result of this comment.

2.3 Comment – Cultural Artifacts

One comment voiced concerns that mining activities may adversely impact cultural resources, such as lithic scatters, by heavy equipment and vehicle traffic over trails, logistical staging and mining activities. The comment also noted that few cultural resource surveys have been conducted in the vicinity of these types of projects.

The comment requested that consultation occur with CVTC by “the State of Alaska and the Army Corps of Engineers at the time Suction Dredge General Mining Permit Applications are received in accordance with CFR 36 part 800; Section 106 of the National Historic Preservation Act of 1966, with Section 3 of the Alaska Native Claims Settlement Act.” The comment also requested that CVTC “be notified for all communications with the Army Corps of Engineers regarding state-generated Suction Dredge mining permits. The Corps is required, under 36 CFR Part 800.3(f)(2), 33 CFR Part 325 Appendix C, and Section 3 of 43 USC 1602 (Alaska Native Claims Settlement Act) to consult with federally-recognized Alaska Native Tribes where a permit may impact areas of cultural importance. Per the Alaska Historic Preservation Act of 1971 Sec. 41.35.010 Sec. 41.35.010 and Sec. 41.35.070(b)(c), ‘If the department determines that historic, prehistoric, or archeological sites, locations, or remains will be adversely affected by the public construction or improvement, the proposed [project]... may not be commenced until the department has performed the necessary site investigation, recording, and salvage of the site.’” The comment further requested that “If deemed necessary by CVTC, suction dredge operation areas need to be surveyed for cultural resources, in collaboration and consultation with the permitting entity, before granting mining permits and before mine operations commence.” (CVTC)

Response:

DEC appreciates the CVTC concern regarding the potential negative impacts of mining on cultural resources. The Medium Suction Dredge Placer Miners General Permit (AKG371000), issued by DEC, authorizes discharges of process wastewater to waters of the U.S. per Section 402 of the Clean Water Act (CWA). This permit authorizes discharges only within the waterbody and the dredging activity and discharge would not affect cultural resources outside of the waterbody. Although impact to cultural resources from permitted discharges is unlikely, Standard Conditions in Permit Appendix A, Part 1.15, stipulate that if cultural or paleontological resources are discovered because of the disposal activity, work that

would disturb such resources must be stopped, and the State Office of History and Archaeology must be notified immediately.

The permit does not authorize cross-country travel, camping activities, or similar types of mining activities that may disturb cultural resources. Land use activities typically fall under the jurisdiction of, and are authorized by, the State or federal land manager. Wastewater discharge authorizations issued under the APDES General Permit are independent of any permitting actions taken by the U.S. Army Corps of Engineers (USACE), which fall under Section 404 of the CWA. Thus, requiring consultation for individual discharge authorizations or notification of any communication with USACE is beyond the scope of the General Permit.

No changes were made to the permit or fact sheet as a result of this comment.

3.0 Comments on Permit Coverage

3.1 Comment – Permit Part 1.1.1 (Coverage Area)

One comment voiced concern regarding the potential negative of impacts of turbidity on estuaries and recommended excluding estuarine waters from the general permit and requiring individual permits for discharges to these habitats. (USFWS)

Response:

The Department acknowledges the potential negative impacts of turbidity on estuarine habitats. However, the General Permit is designed to protect all designated and existing uses of waters of the U.S. equally throughout all of Alaska including estuarine habitats. Per APDES regulations at 18 AAC 83.215, the Department retains the authority to require individual permits on a case by case basis as it deems such actions necessary.

Due to the sensitive nature of estuarine habits and mixing zone size limitations at 18 AAC 70.240(k)(1) (as approved for CWA purposes on September 30, 2019), certain operations may not be properly covered under a general permit. Thus, language has been added under Permit Part 1.3.4 noting that proposed discharges to estuaries are considered on a case-by-case basis and only authorized after coordination with ADF&G and considering all factors, such as the duration of the discharge, size of the operation, and nature of the location. Authorized discharges may be subject to additional conditions, such as reduced operational windows or restricted mixing zone

sizes per 18 AAC 70.240(k)(1), as approved for CWA purposes on September 30, 2019.

3.2 Comment – Permit Part 1.2 (Authorized Discharges)

One comment recommended language requiring water be discharged or returned to the same waterbody from which it was pumped to prevent erosion and unnecessary inputs of sediment into the stream. (USFWS)

Response:

Dredges operating under the General Permit typically dredge and discharge within a single drainage basin and into the same waterbody. DEC is unaware of any operations proposing to discharge to uplands, across separate drainage basins, or from separate waterbodies. Based on experience with past operations, the Department believes that an additional permit stipulation to address this concern is unwarranted because of low probability of occurrence and the Department’s ample regulatory authority to address erosion and sedimentation concerns without the additional permit language.

Stipulations under Permit Parts 3.1.1 and 3.1.3 currently prohibit dredging outside the active stream channel; dredging within the active stream channels that results in stream bank erosion; and placement of material in a manner that significantly alters the active stream channel or otherwise redirects the flow of water into the streambank causing erosion or undercutting. No changes were made to the permit or fact sheet as a result of this comment.

3.3 Comment– Permit Part 1.3.2 (Federal Reserves)

One comment recommended that rather than proceeding to authorize a discharge on a federal reserve “unless the Department receives a valid objection from the agency with management authority over the federal reserve within 30 days of the agency receiving the notice,” the Department not authorize a discharge unless the Department receives written approval or a statement of non-objection from the lead federal agency with jurisdiction over the area, similar to Section 1.3.2 of the Mechanical Placer Miners General Permit (AKG370000). (USFWS)

Response:

The language under Permit Part 1.3.2 was developed in a previously issued permit based on comments from, and consultation with, the Alaska Departments of Natural Resources and Law and serves to prevent unnecessary delay of authorization issuance beyond the 60-day notification window to the managing agency of the federal reserve. As notices to discharge within a federal reserve under Part 1.3.2, have rarely, if ever, occurred, and in consideration of comments received during the prior permit issuance,

the Department has elected to retain the existing permit language. No changes were made to the proposed permit or fact sheet as a result of this comment.

3.4 Comment – Permit Part 1.5.1 (Permit Changes)

One comment requested that Permit Part 1.5.1 include an explanation of the differences between the 2015 permit and the proposed 2021 permit. (CVTC)

Response:

Explanations of any changes between the 2015 permit and 2021 are detailed within the Fact Sheet and Response to Comments document. The Department appreciates the suggestion to improve the notice documents for public review. Although no changes were made to the proposed permit or fact sheet as a result of this comment, the Department may consider this suggestion for implementation in future notices.

3.5 Comment – Permit Part 1.5.1 (Notice of Application)

One comment requested that Permit Part 1.5 “clearly state how the public will know when a suction dredge operation has applied for a permit, been approved, and whether it will be in waters used by fish.”

The comment also asked if an *Application for Permits to Mine in Alaska* (APMA) submitted by an operator will this show the discharge location(s) and if the APMA will show the expected discharge relative to stream flow discharge?

The comment further noted that “it appears that a Fish Habitat Permit may not be required, if an ADF&G contact is provided, but it is not clear whether that would only be allowed in areas that are not used by fish, in areas not used by anadromous fish, or how the public would know any of this information.” (CVTC)

Response:

Facilities that meet the criteria for coverage under the General Permit and are proposing to discharge must submit Notices of Intent (NOIs) to DEC per Permit Part 1.1.3. Because Permit #AK371000 is a General Permit, submittal of an NOI differs from an “application” and grants coverage to eligible facilities meeting permit criteria. Although the General Permit undergoes a public comment period prior to issuance, individual NOIs or discharge authorizations under the permit do not undergo a similar notice period. Information on individual discharge authorizations is public record and available upon request from DEC. Discharge authorizations are also available online at <http://dec.alaska.gov/Applications/Water/WaterPermitSearch/Search.aspx>. APMA's

are posted on the State of Alaska *Online Public Notice* page at <https://aws.state.ak.us/OnlinePublicNotices/Default.aspx>.

An APMA submitted by an operator will show the discharge location. Because suction dredge operations are relatively mobile, the discharge location provided is an approximation and operators may move within the boundaries provided within the APMA. The APMA does not show the expected discharge relative to stream flow discharge; however, suction dredges within similar size categories typically discharge at similar volumes and stream flows can be determined from gauging stations, modeling, or similar methods.

Permit Part 1.5.5 requires permittees to contact ADF&G and obtain any necessary Fish Habitat Permits prior to discharging to ensure dredging does not adversely affect fish. The need for a Fish Habitat Permit is determined by ADF&G based on the nature of the operation, location, and regulatory authority. Language has been added to Permit Part 1.5.5 clarifying that any necessary Fish Habitat Permits be obtained “prior to discharging”. No additional changes were made to the proposed permit or fact sheet as a result of this comment.

4.0 Comments on Effluent Limitations and Monitoring Requirements

4.1 Comment – Permit Part 2.1 (Mixing Zones)

One comment objected to authorizing any mixing zone in waters with aquatic life, regardless of whether they are listed as anadromous waters or contain resident fish. The comment further recommended that “suction dredge water could be run through one or more settling ponds before re-entering the stream to reduce or eliminate turbidity. The only turbidity, then, should be what is running naturally in the creek. No Mixing Zone would be allowed. Pond water would be drained, with solids settled, when they are no longer needed (operation has moved on, or season has ended).” (CVTC)

Response:

State Water Quality Standards (18 AAC 70) grant DEC the authority to authorize mixing zones. See Fact Sheet Section 4.2 for a mixing zone analysis. Based on the nature of suction dredge operations (see Fact Sheet Section 3.0) and the infeasibility of incorporating typical water management techniques to control the quality of the discharge, mixing zones are required for discharges under this permit. Because suction dredges continually pump water during operation, the pond system would have to be very large to contain and treat the volumes of water produced to the required standard. The practice would cause undue riparian and upland disturbance, require the use of heavy equipment, and potentially introduce new pollutants to the stream. Furthermore,

most suction dredge operations are “self-reclaiming” as the tailings refill the dredge hole when an operation moves upstream. Thus, there is no existing material lost from, or new material added to, the stream during operation. Requiring dredges to redirect discharges, which are commingled with tailings, to onshore settling ponds would result in a net loss of stream material and potentially habitat. Fact Sheet Section 5.3 further describes the basis for water quality-based effluent limits. No changes were made to the proposed permit or fact sheet as a result of this comment.

4.2 Comment – Permit Part 2.1.2 (Turbidity Limit)

One comment requested the following changer to Permit Part 2.1.2: “preferred change would be to: ‘The discharge may not create a visible increase in turbidity (cloudiness or muddiness) ~~outside the mixing zone during operation.~~’ Since we assume DEC will not eliminate the Mixing Zone, we would at least suggest: ‘The discharge may not create a visible increase in turbidity (cloudiness or muddiness) outside the mixing zone ~~during operation.~~’” (CVTC)

Response:

DEC has retained mixing authorizations under the General Permit (see Response to Comments Part 4.1). Thus, the first requested wording change is not applicable. Regarding the second proposed wording change, the language “during operation” has been included since the original 1994 issuance and has proven effective. The permit applies to discharging operations and water quality impacts occurring outside the mixing zone after operations may be beyond the permittee’s control. Because adequate justification warranting a change has not been provided, the original wording of Permit Part 2.1.2 has been retained. No changes were made to the proposed permit or fact sheet as a result of this comment.

4.3 Comment – Permit Appendix A, Part 2.8.1 (Toxic Pollutants)

One comment referenced Permit Appendix A, Part 2.8.1 and asked, “why would a toxic pollutant NOT be limited in the permit, for either ‘frequent’ or ‘infrequent’ discharges?” (CVTC)

Response:

Permit Appendix A contains standard regulatory language that must be included in all APDES permits. These requirements are based on the regulations and cannot be changed in the context of an APDES permit action. The standard regulatory language covers requirements such as monitoring, recording, reporting requirements, compliance responsibilities, and other general provisions.

Although the conditions apply to all APDES permits, some conditions are less relevant for certain permit categories. As described in the fact sheet, a suction dredge is a

mechanical device that elevates bed material and *in situ* water into a sluice box from which gold may be recovered. The discharge consists entirely of intake water and bed material immediately released back into the receiving water. Dredges do not use chemicals for processing or add pollutants other than those already present in the intake water or bed material. Thus, limits for toxic pollutants are not warranted or included within the permit. No changes were made to the proposed permit or fact sheet as a result of this comment.

4.4 Comment – Permit Part 2.2 (Monitoring)

One comment stated that visual monitoring is subjective and asked how dredge operators can stay within State Water Quality Standards, when there may be no information on the natural background concentrations, and/or the concentrations vary considerably from year to year and month to month. The comment further recommended that in lieu of, or in addition to, visual monitoring, operators be required to use turbidimeters to measure turbidity above the discharge, at the discharge, and at the edge of the 500-foot mixing zone boundary. (CVTC)

Response:

Visual monitoring has been implemented in the permit since 1994 and is also used in similar National Pollutant Discharge Elimination System (NPDES) permits for suction dredges in other states. DEC recognizes that visual monitoring for turbidity is subjective and may be difficult. However, the alternative is to require sampling and analysis for turbidity, which the Department has determined would be impracticable and impose an unreasonable burden on suction dredgers. Due to variability and mobility of turbidity plumes, along with logistical challenges of working in often fast-moving water downstream of dredges, collecting concurrent and representative sample data is infeasible for most dredge operations. Because suction dredges lack treatment systems, the most effective methods of controlling turbidity are through Best Management Practices (BMPs) (Permit Part 3.1), seasonal restrictions (Permit Part 3.2), and separation requirements (Permit Part 3.3).

Since assuming permitting authority from EPA in 2010, DEC has not observed any compliance issues related to water quality with dredgers under the General Permit and visual monitoring has proven to be an effective method for ensuring effluent limits are met and BMPs are followed. See Fact Sheet Section 5.3 for an analysis of water quality-based effluent limits. No changes were made to the proposed permit or fact sheet as a result of this comment.

5.0 Comments on Special Conditions

5.1 Comment – Permit Part 3.1.6 (Invasive Species)

One comment recommended requiring operators to follow certain sections within the U.S. Fish and Wildlife Service’s *Guidelines for Preventing the Spread of Aquatic Invasive Species*, specifically Level 1 and Level 2 Decontamination Protocols and guidelines in the Scuba Divers and Snorkeler Fact Sheet, as BMPs to prevent the spread of aquatic invasive species. The USFWS guidelines are available at <https://www.fws.gov/alaska/sites/default/files/2021-01/Aquatic%20Invasive%20Species%20Prevention%20Guidelines.pdf>. (USFWS)

Response:

Although not considered under the CWA or Alaska State Water Quality Standards (WQS), this permit addresses invasive species prevention in permit Part 3.1.6 through a Best Management Practice (BMP) requiring permittees to self-inspect and clean dredges before placement in waters of the U.S. The BMP is intended to create awareness of invasive species among permittees. Most of the dredge operations covered under the proposed permit are relatively immobile and typically dredge in the same location over many years, with equipment stored onsite during the off-season. Generally, the risk of transferring invasive species through activities authorized under the proposed permit is relatively low. Permit Part 3.1.6 protects water quality by requiring inspection and cleaning and DEC has determined that requiring an invasive-species specific cleaning protocol is unwarranted. No changes were made to the proposed permit or fact sheet as a result of this comment.

5.2 Comment – Permit Part 3.3 (Polar Bears)

One comment voiced concern that discharges of dredge water onto sea ice may negatively impact polar bears which are listed as Threatened Species under the Endangered Species Act and rely on sea ice as critical habitat.

The comment recommended “that facilities operating on sea ice or within five miles of the Alaskan arctic coast from the Canadian border to Point Hope, within one mile of the western coast from Point Hope to Nome, or along the coast of St. Lawrence Island develop a human-polar bear interaction plan that includes ceasing operations if a polar bear moves within sight-range of operations. Plans should also include measures to manage attractants, operator training on bear safety, and methods to safely detect and deter polar bears.” USFWS *Polar Bear Interaction Guidelines* can be found at <https://fws.gov/alaska/pages/marine-mammals/polar-bear/interaction-guidelines>. (USFWS)

Response:

Although the General Permit covers discharges to waters of the U.S. statewide, the Department has not received interest from, or authorized, any dredge operations in coastal areas north of the Norton Sound area. Numerous dredge operations are permitted in Norton Sound; however, DEC is unaware of any operations in the area encountering polar bears. To minimize any negative polar bear impacts from possible future encounters, language has been added under Permit Part 3.3 (Separation Requirements) requiring dischargers to cease operation if a polar bear is observed and recommending permittees review USFWS *Polar Bear Interaction Guidelines* or contact USFWS to obtain additional information or report sightings. Based on the lack of historical polar bear encounters by permittees and lack of dredge operations in areas where polar bears frequent, the Department has determined that requiring operators to develop human-polar bear interaction plans is beyond the scope of this permit. DEC retains the ability to share the information through other means, such as through guidance documents, website links, or outreach workshops.

5.3 Comment – Permit Part 3.3.2 (Inter-Jurisdictional Fish)

One comment recommended the DEC consider expanding protection of spawning areas to exclude mixing zone authorizations within known spawning areas of anadromous whitefish species, such as sheefish, least cisco, broad whitefish, humpback whitefish, and bearing cisco. The comment further recommended the DEC take into consideration potential impacts to this resource during project planning and permitting. (USFWS)

Response:

DEC appreciates the responsibilities and concerns of the USFWS. The permit is designed to protect the "growth and propagation of fish, shellfish, other aquatic life, and wildlife." Per State Water Quality Standards [18 AAC 70.240(f), as approved for CWA purposes on September 30, 2019] a mixing zone will not be authorized in a spawning area for sheefish or whitefish, unless after consultation with ADF&G, it is determined that the discharge does not contain pollutants at concentrations that exceed the criteria for growth and propagation of fish, shellfish, other aquatic life, and wildlife; and will not adversely affect the capability of the area to support future spawning, incubation, and rearing activities.

As required in Permit Part 3.3.2, permittees must maintain a 500 feet distance from locations where locations where anadromous or resident fish are spawning or where anadromous or resident fish eggs, alevins, or spawning redds are known to exist at the time dredging occurs. Definitions of "anadromous" and "resident" fish in Permit Appendix C include sheefish and whitefish, encompassing least cisco, broad whitefish,

humpback whitefish, and bearing cisco. To further ensure protection of spawning locations, Permit Part 1.5.5 requires that permittees contact ADF&G and obtain any necessary Fish Habitat Permits prior to discharging. See Fact Sheet Sections 7.2 and 7.3 for a discussion of seasonal restrictions and separation requirements.

Lastly, DEC can and does take into consideration the evaluation of potential impacts to inter-jurisdictional fish during the review of the project plans and submittals prior to authorizing discharges under this permit. No changes were made to the permit or fact sheet as a result of this comment.