



FACT SHEET

NPDES Permit Number: AK-005334-1
Date: October 27, 2010
Public Notice Expiration Date: November 26, 2010
Technical Contact: Cindi Godsey (907) 271-6561 or
1-800-781-0983 (within Alaska)
godsey.cindi@epa.gov

The U.S. Environmental Protection Agency (EPA) Plans To Re-issue A Wastewater Discharge Permit To:

**Sumitomo Metal Mining Pogo LLC
Pogo Gold Mine**

**near
Delta Junction, Alaska**

and the State of Alaska proposes to Certify the Permit

EPA Proposes NPDES Permit Re-issuance.

EPA proposes to reissue a *National Pollutant Discharge Elimination System* (NPDES) permit to the Pogo Gold Mine (Pogo). The draft permit sets conditions on the discharges of pollutants from the mine to the Goodpaster River. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged.

This Fact Sheet includes:

- information on public comment, public hearing, and appeal procedures
- a description of the current discharge
- a description of the discharge location and a map and
- technical material supporting the conditions in the permit

Alaska State Certification.

EPA requests that the Alaska Department of Environmental Conservation (ADEC) certify the NPDES permit for Pogo under Clean Water Act (CWA) § 401. EPA may not issue the NPDES permit until the state has granted, denied, or waived certification. The state of Alaska has provided a certification for the draft permit (See Appendix B). For

more information concerning this review, please contact Tim Pilon at (907) 451-2136 or 610 University Avenue, Fairbanks, Alaska 99709 or Tim.Pilon@alaska.gov

On October 31, 2008, EPA approved the application submitted by the state of Alaska to administer the NPDES Program. Under the State program, ADEC will be phasing the assumption with different categories of discharges being phased in over a 3 year period. Under this phased approach, mining permits will transfer in year 2, at the end of October 2010. According to the Memorandum of Agreement between EPA and ADEC, EPA will complete work on any project where substantial work has been started but the State would issue any final permit. Because of the timing of the public notice of this permit, it will be issued as an APDES permit and as such, may be presented in a different format than that noticed by EPA although all required elements will be present.

National Environmental Policy Act (NEPA)

Since the final decision on permit issuance will not be a federal decision made by EPA, no evaluation under the NEPA has been prepared for this proposed action.

Public Comment

EPA will consider all comments before reissuing the final permit. Persons wishing to comment on, or request a public hearing for, the draft permit action may do so in writing by the expiration date of the public notice period. A request for a public hearing must state the nature of the issues to be raised as well as the requester's name, address, and telephone number. All comments should include name, address, phone number, a concise statement of basis of comment and relevant facts upon which it is based. All written comments should be addressed to the Director, Office of Water & Watersheds at U.S. EPA, Region 10, 1200 Sixth Avenue, Suite 900, OWW-130, Seattle, WA 98101; submitted by facsimile to (206) 553-0165; or submitted via e-mail to godsey.cindi@epa.gov

After the Public Notice expires and all substantive comments have been addressed, EPA's regional Director for the Office of Water & Watersheds will make a final decision regarding permit reissuance. If no comments requesting a change in the draft permit are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If comments are received, EPA will address the comments and issue the permit along with a response to comments. The permit will become effective 30 days after the issuance date or on a later specified date, unless the permit is appealed to the Environmental Appeals Board (EAB) within 30 days.

Persons wishing to comment on State Certification should submit written comments by the public notice expiration date to: Alaska Department of Environmental Conservation c/o Tim Pilon, 610 University Avenue, Fairbanks, Alaska 99709 or Tim.Pilon@alaska.gov

Documents are Available for Review.

The draft NPDES permit and related documents can be reviewed or obtained by visiting or contacting EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday (See address below). The Administrative Record for the Draft Permit consists of the documents contained in the Reference section of this Fact Sheet and these are available upon request. Draft permits, Fact Sheets, and other information can also be found by visiting the Region 10 website at <http://yosemite.epa.gov/R10/water.nsf/NPDES+Permits/Permits+Homepage>

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, Suite 900, OWW-130
Seattle, Washington 98101

(206) 553-0523 or 1-800-424-4372 (within Alaska, Idaho, Oregon and Washington)

The fact sheet and draft permit are also available at:

EPA Alaska Operations Office
222 W. 7th Avenue #19
Anchorage, Alaska 99513-7588
(800) 781-0983 toll free in Alaska only

Alaska Department of Environmental Conservation
610 University Avenue
Fairbanks, Alaska 99709

For technical questions regarding the permit or fact sheet, contact Cindi Godsey at (907) 271-6561 or godsey.cindi@epa.gov. Services can be made available to persons with disabilities by contacting Audrey Washington at (206) 553-0523.

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TECHNICAL INFORMATION

I. APPLICANT

Sumitomo Metal Mining Pogo LLC
PO Box 145
Delta Junction, AK 99737

Facility Contact: Todd Roth, General Manager

II. FACILITY ACTIVITY

Sumitomo Metal Mining Pogo LLC operates the Pogo gold mine located 38 miles northeast of Delta Junction, Alaska. The Pogo Mine includes an underground mine that feeds gold ore to a mill at a rate of approximately 2500 tons per day (tpd). The property will produce 380,000 to 400,000 ounces of gold annually.

The following are the major elements of the project:

- ◆ An underground cut-and-fill mine with a conveyor access to transfer ore to the surface,
- ◆ Surface gold mill for gold recovery through gravity concentration, flotation and cyanide leaching,
- ◆ Tailings preparation facilities, including cyanide destruction and filtration, to produce paste backfill for the underground mine workings and dewatered tailings material suitable for storage in a drystack facility on the surface,
- ◆ 249 person upper camp and an 126 person lower camp both with recreation and catering facilities,
- ◆ Transmission line along the Shaw Creek Hillside road and on-site electrical distribution system,
- ◆ 49 mile all-season road constructed along the Shaw Creek Hillside
- ◆ A water management system that maximizes recycling and treats all waters affected by the project in accordance with pertinent federal and state legislation.

Pogo is expected to continue operating through 2017 based on the 2009 ore reserve statement.

III. RECEIVING WATERS

- A. Outfall Location. The facility discharges to the Goodpaster River through two outfalls. Outfall 001, the discharge point for treated mine drainage and excess precipitation, is located at latitude 64° 28' 12" N, and longitude 144° 55' 03" W [NAD 83 Geographic]. Outfall 002, the discharge point for treated domestic wastewater, is located at latitude 64° 26' 36" N, and longitude 144° 56' 30" W [NAD 83 Geographic].
- B. Water Quality Standards. The Alaska State Water Quality Standards (WQS) are composed of use classifications, and numeric and/or narrative water quality criteria. The use classification system designates the beneficial uses that each water body is expected to achieve (such as contact recreation, growth and propagation of fish, etc.). The numeric and/or narrative water quality criteria are the criteria deemed necessary, by the State, to support the beneficial use classification of each water body.

The Goodpaster River is protected in the WQS for freshwater Classes (1) (A), (B), and (C) for uses in water supply (drinking, culinary and food processing, agriculture, aquaculture, and industrial water supply), water recreation (contact and secondary recreation), and growth and propagation of fish, shellfish, other aquatic life and wildlife.

The water quality parameters that could be affected by the discharge from the facility include metals, solids and pH. These are common water quality parameters of concern when discharging treated mine water.

IV. DESCRIPTION OF DISCHARGE

The volume of effluent to be discharged will vary with precipitation and mine drainage. Pogo selected a design basis for water treatment plant and dam sizing that provides an annual 95% probability of staying within the design criteria. These criteria would estimate the net precipitation and mine drainage or Net Allowable Discharge at 487 gallons per minute (gpm). Current site water balance modeling predicts that the volume of water to be treated and discharged is less than 487 gpm. With 107 gpm consumed in the process during operating conditions, under average conditions the water treatment plant effluent will be 189 gpm while at the 95th percentile, it would be 380 gpm. The main water treatment plant is designed to treat 400 gpm on a continuous basis with an ability to increase by approximately 20% (up to 480 gpm) for a few weeks at a time.

Modeling work completed for the off-river treatment works (ORTW) indicates that under the conservative case of a mine shutdown and maximum mine drainage, it would be necessary to discharge up to 600 gpm in order to maintain the Recycle Tailings Pond (RTP) volume at acceptable levels. This 600 gpm discharge rate would be achieved by combining effluents from both the underground and the

main water treatment plants. During such a shut down period, the underground water treatment plant, which would otherwise be dedicated to treating mine drainage to return to the process plant, would be available to treat effluent for discharge. Therefore, the ORTW is designed for a maximum of 600 gpm with a mixing ratio maximum of 25:1, for a total maximum effluent rate of 15,600 gpm.

The ORTW is considered by EPA to be a type of flow augmentation. By EPA policy, flow augmentation can be used only as a supplement to adequate treatment and not as a substitute. The monitoring data conducted under the current permit indicates that effluent from the treatment plant will be within the technology-based effluent guidelines. If it does not meet these standards, the treated water is routed back to the RTP. Therefore, EPA considers the requirements for this alternative to be met. The effluent from the water treatment plant is sampled and monitored at regular intervals prior to entering the ORTW between the first and second ponds. Samples are also taken upstream of the intake to the ORTW to determine the natural condition of the river. The final effluent is sampled at Outfall 001, the discharge point from the second pond.

The domestic wastewater (human body wastes from toilets and urinals, as well as wastewater from sinks, showers, laundries, safety showers, eyewash stations and galleys) from the camp will be treated and discharged through a diffuser at Outfall 002. In a draft CWA § 401 Certification (See Appendix B), ADEC has authorized a mixing zone at this location because this location does not support salmon spawning. The average discharge rate will be 20 gpm.

Since commencing the discharge in July 2005, there have been few compliance issues with the permit.

Non-compliance Summary		
Parameter	Maximum Daily ¹	Average Monthly ²
Cadmium	4 (1.7%)	5 (8.8%)
Cyanide	6 (2.6%)	6 (10.5%)
Flow	3 (1.3%)	
Turbidity	2 (0.9%)	
pH values were lower than the designated range 3 times (1.3%)		
1 – Percentages based on weekly sampling for 228 weeks since 2005.		
2 – Percentages based on 57 months since July 2005		

V. PERMIT REQUIREMENTS

A. Applicable Laws and Regulations

In general, the CWA requires that the effluent limits for a particular pollutant be the more stringent of either technology-based effluent limits or water quality-based limits. A technology-based effluent limit requires a minimum level of treatment for industrial point sources based on currently available

treatment technologies. A water quality-based effluent limit is derived to ensure that the criteria and designated uses of a waterbody are protected. See Appendix C.

B. Effluent Limitations

1. Wastewater from Outfall 001

An evaluation for the discharge from Outfall 001 was done comparing the technology-limitations in 40 CFR Part 440 Subpart J plus other parameters of concern with the WQ-based limitations discussed in Appendix C. For most parameters, the WQ-based limitation is more restrictive.

- a. The following summarizes the effluent limitations that are included in the draft permit:

Table 1: Compare current effluent limitations with new draft permit limitations						
Parameter	Units	Effluent Limitations				Monitoring Requirements
		Maximum Daily		Average Monthly		
		Current	Draft	Current	Draft	
Arsenic	ug/L	100.5	X	50	X	See Appendix C Table C-6 for the effluent limitations and monitoring requirements included in the draft permit. See Appendix C for rationale for the new cyanide limit contained in Table 2.
Cadmium ^{1,3}	ug/l	0.22	0.2	0.11	0.1	
Copper ^{1,3}	ug/l	4.5	4.5	2.2	2.2	
Chromium, Total	ug/l	---	X	---	X	
Chromium VI	ug/L	16	X	8	X	
Cyanide ⁴	ug/l	8.5	6.9	4.3	4.7	
Lead ^{1,3}	ug/l	1.1	1.3	0.6	0.5	
Manganese ^{1,3}	ug/l	73	88.0	50	50.0	
Mercury ^{2,3}	ug/l	0.02	0.02	0.01	0.01	
Nickel ^{1,3}	ug/l	27	X	13	X	
Zinc ^{1,3}	ug/l	42.9	43.0	21.4	16.8	
TDS	mg/l	820	X	408	X	
Turbidity, effluent	NTU	see FS Appendix C II.C.2.				
Turbidity, natural condition	NTU	---	---	---	---	
Sulfates	mg/l	410	X	204	X	
pH	s.u.	see FS V.B.1.b, below				
Outfall Flow ⁵	gpm	15,600	15,600	---	---	
Hardness, as	mg/l	---	---	---	---	

Chronic Whole Effluent Toxicity ⁶	TU _c	---	---	---	---	
<p>Footnotes:</p> <p>1 - These parameters must be analyzed and reported as total recoverable.</p> <p>2 - Mercury must be analyzed and reported as total.</p> <p>3 - Reporting is required within 24 hours of a maximum daily limit violation. See Part III.G.</p> <p>4 - Free cyanide will be analyzed as weak acid dissociable (WAD). A compliance level of 20 ug/L is being proposed based on a site specific Minimum Level.</p> <p>5 - Proposed that this flow limit not apply after 72 hours of the last effluent from the treatment plant entering the ORTW.</p> <p>6 - See Permit Part I.D. for whole effluent toxicity testing requirements.</p>						

EPA is proposing that the flow limitation found in Table 1 of the draft permit not apply to Outfall 001 if the facility has not discharged effluent into the ORTW for 72 hours. At this time, the water flowing through the ORTW should consist of river water alone so there is no need to limit the flow in the system.

- b. The pH shall be not be less than 6.5 standard units nor greater than 8.5 standard units.
- c. There shall be no discharge of floating solids, visible foam, other than in trace amounts, or oily wastes which produce a sheen on the surface of the receiving water.
- d. The turbidity measured in nephelometric turbidity units (NTU) must not be more than 5 NTUs above the natural condition measured in a sample taken from the Goodpaster River within an hour of the effluent sample being made.
- e. The permittee must collect effluent samples from the effluent stream after the last treatment unit prior to discharge into the receiving waters.
- f. The outfall flow, while limited to a maximum of 15,600 gpm, shall not exceed 25 times the flow from the treatment plant.

2. Whole Effluent Toxicity (WET) Requirements

Chronic WET testing is required in the current permit and is included in the draft permit on an annual basis. The testing will occur at Outfall 001 so that the full effects of the discharge into the Goodpaster River will be determined. A target level for chronic toxicity of 2 TU_c shall apply in complying with the permit requirements for the potential of accelerated testing and the development, if need be, of a Toxicity Reduction Evaluation (TRE) or a Toxicity Identification Evaluation (TIE).

3. Outfall 011 (internal monitoring of wastestream 001)

The allowance for the use of flow augmentation results in the need for monitoring and limiting some parameters in the treatment plant effluent rather than in the discharge to the Goodpaster River. Because flow augmentation can only be used after treatment (rather than instead of treatment), the technology-based effluent limitations must be met prior to the mixing of the wastestream with the river water in the ORTW or the water cannot be discharged. At times during the current permit cycle, pH limitations have not been met after treatment but the plant is plumbed to direct the water back to the RTP when discharges will not meet the limitations. TSS and pH are monitored weekly and limited by the technology-based effluent guidelines. Metals will be monitored quarterly and limited by the technology-based effluent guidelines. Additional monitoring for other parameters is done to assess the characteristics of the wastestream.

- a. The following table summarizes the limitations that are in the draft permit for Outfall 011. These limitations, with the exception of the cyanide limitations, are unchanged from the current permit. See Appendix C II.E. for information on the cyanide limitations.

Parameter	Units	Effluent Limitations		Monitoring Requirements	
		Maximum Daily	Average Monthly	Sample Frequency	Sample Type
Aluminum ¹	ug/L	—	—	quarterly	grab
Arsenic ¹	ug/L	—	—	quarterly	grab
Cadmium ¹	ug/l	100	50	quarterly	grab
Chromium, Total	ug/l	—	—	quarterly	grab
Copper ¹	ug/l	300	150	quarterly	grab
Cyanide ³	ug/L	—	—	weekly	grab
Iron ¹	mg/l	1639	817	weekly	grab
Lead ¹	ug/l	600	300	quarterly	grab
Mercury ²	ug/l	2	1	quarterly	grab
Nickel ¹	ug/l	—	—	quarterly	Grab
Selenium ¹	ug/l	—	—	quarterly	Grab
Silver ¹	ug/l	—	—	quarterly	Grab
Zinc ¹	ug/l	1500	750	quarterly	Grab
TSS	mg/l	30	20	weekly	Grab
TDS	mg/l	—	—	quarterly	Grab
Sulfates	mg/l	—	—	quarterly	Grab
Chlorides	mg/L	—	—	quarterly	Grab
pH	s.u.	see b. below		weekly	Grab

Table 2: Limitations at Outfall 011					
Parameter	Units	Effluent Limitations		Monitoring Requirements	
		Maximum Daily	Average Monthly	Sample Frequency	Sample Type
Outfall Flow	gpm	600	—	continuous	Recording
Hardness, as CaCO ₃	mg/l	—	—	weekly	Grab
Footnotes: 1 - These parameters must be analyzed and reported as total recoverable. 2 - Mercury must be analyzed and reported as total. 3 - Cyanide must be analyzed and reported as weak acid dissociable (WAD) cyanide.					

- b. The pH must not be less than 6.0 standard units (s.u.) nor greater than 9.0 standard units (s.u.).
- c. Minimum Levels. For all effluent monitoring, the permittee must use methods that can achieve a minimum level (ML) less than the effluent limitation whenever possible. For parameters that do not have effluent limitations, the permittee must use methods that can achieve MLs less than or equal to those specified in Table 5 (Permit Part I.E.3.).

4. Outfall 002

This outfall is for the discharge of domestic wastewater as defined in 18 AAC 72.990(23) as “waterborne human wastes or graywater derived from dwellings, commercial buildings, institutions or similar structures.” As such, the appropriate standards are the wastewater disposal standards found in 18 AAC 72.

Pogo uses a standard treatment plant for this type of effluent and ultraviolet disinfection to avoid the introduction of chlorine into the Goodpaster River. The discharge has been placed in an area of the river that was identified as a non-spawning area due to steep talus slopes. Thus, ADEC has provided a CWA § 401 Certification (See Appendix B) for a mixing zone allowing a dilution multiplier of 10 for fecal coliform and nitrates. The mixing zone also allows dilution for pH, dissolved oxygen and chlorine (if used).

The draft permit contains a provision to decrease monitoring frequency at Outfall 002 if the facility has been in compliance with its effluent limitations for 6 consecutive months. This compliance level was achieved for all parameters except flow for the entire 12 month period of 2009. When all limitations have been met for 6 consecutive months, the monitoring frequency can be reduced to monthly after consultation with EPA and ADEC.

- a. The following table contains the limitations from the current permit that are proposed in the draft permit for Outfall 002:

TABLE 3: Effluent Limitations at Outfall 002						
Parameter	7-Day Average	30-Day Average	Daily Maximum	Units	Sampling Frequency⁴	Sample Type
Flow	---	---	50	gpm	Daily	Recording
Biochemical Oxygen Demand (BOD₅)	45	30	60	mg/L	Weekly	Grab
Total Suspended Solids (TSS)	45	30	60	mg/L	Weekly	Grab
Fecal Coliform^{1,2}	---	200 ³	400	#/100 ml	Weekly	Grab
Nitrates¹	—	80	160	mg/L	Weekly	Grab
pH	See c., below			s.u.	Weekly	Grab
Dissolved Oxygen	See d., below			mg/L	Weekly	Grab

1 - It is expected that ADEC will certify a mixing zone with 10 to 1 dilution into the permit.
 2 - The standard holding time for a fecal sample is 6 hours or 6 hours transportation time if the sample analysis begins within 2 hours of receipt at the laboratory.
 3 - Averages are calculated as a geometric mean.
 4 - After consultation with EPA and ADEC, the sampling frequency may decrease to monthly if this discharge has been in compliance with all effluent limitations for 6 consecutive months.

- b. The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen on the surface of the receiving water.
- c. The pH must not be less than 6.0 standard units (s.u.) nor greater than 9.0 standard units (s.u.).
- d. Dissolved Oxygen (DO) must be greater than 2 mg/L.
- e. If chlorine is ever used for disinfection, the effluent limitation will be 0.02 mg/L, but the MDL is above this level, so the compliance level on the Discharge Monitoring Report will be 0.1 mg/L. If used for disinfection, chlorine shall be sampled on a weekly basis (the sampling reduction in footnote 4 of Table 3, above and in the Draft Permit, applies for chlorine, if used) from Outfall 002.
- f. Influent (prior to treatment) measurements of BOD₅ and TSS shall be conducted quarterly in January, April, July and October. From this information, percent removal shall be calculated and reported on the Discharge Monitoring Report (DMR) for that month. Percent removal shall meet or exceed 85% for both parameters.

- g. The permittee must collect samples from the effluent stream after the last treatment unit prior to discharge into the receiving waters.
- h. The previous permit contained an error in the holding time for fecal coliform. Although Standard Methods provide some relaxation of the holding time, EPA regulations at 40 CFR 136.3 specify that it is preferable to begin the analysis within 2 hours of sample collection but does allow a transport time of 6 hours as long as the analysis is begun within 2 hours of receipt at the laboratory.

5. Method Detection Limit (MDL) for Cyanide

EPA is proposing that a site specific MDL for cyanide of 10 ug/L and an associated minimum level of 20 ug/L be included in the permit. Analysis done for the EPA Compliance Order by Consent (COBC) shows that the colorimetric method for measuring cyanide can be unduly influenced by tannins in the sample added within the ORTW.

6. Surface Water (Ambient) Monitoring

Pogo conducted ambient monitoring and bioassessments in the Goodpaster River as part of their baseline work. The 2004 permit and this draft permit contain requirements to maintain two sites that have long term monitoring. The 2004 permit initiated monitoring at two other sites to monitor the water quality as construction and operation activities increase in the project area and these sites are retained in the draft permit. The draft permit proposes to continue bioassessments at an upstream site (SW01) and the historic downstream site (SW12).

Stations SW01 and SW15 are the long term monitoring stations shown on the project map in Appendix A. SW01 is the monitoring point for the background conditions that exist in the Goodpaster River. SW15 is the monitoring point downstream of all proposed activities which will indicate any overall change in the water quality due to the presence of the project.

The ambient monitoring during the 2004 Permit cycle does not show that any level of lead or mercury exceeded the criteria for either parameter. As such, EPA is proposing to remove Part I.A.5 of the 2004 Permit which allowed concurrent monitoring of the natural conditions. This provision of the permit was included because previous monitoring at SW01 indicated that there had been slight exceedences of the criteria in the baseline data set.

Station SW 41 is located downstream of the junction of Liese Creek valley with the Goodpaster River. This point is downstream of the discharge for the ORTW and downstream of the drainage where most of the project's components are located. Station SW 42 is downstream from the mixing zone for the discharge at Outfall 002.

The Table below contains the list of parameters that were monitored in the surface water during the last permit cycle.

Table 4 Surface Water Monitoring Parameters¹		
pH	TSS	Iron ⁴
DO	Hardness	Lead
Conductivity	Alkalinity	Copper
Temperature	Cyanide, WAD	Manganese ⁴
Turbidity	Aluminum ²	Mercury
Chlorides	Antimony ³	Nickel
Nitrates	Arsenic	Selenium ²
Sulfates	Cadmium	Silver
TDS	Chromium	Zinc
<p>1 - Freshwater criteria for metals are expressed in terms of the dissolved metal in the water column unless noted in other footnotes.</p> <p>2 – These values (Al and Se) are expressed in terms of total recoverable metal in the water column as expressly stated in the 2008 Toxics Manual included as part of the WQS.</p> <p>3 – This value should be expressed as total because the most stringent value for antimony is the drinking water MCL which are analyzed as total.</p> <p>4 - These values (Fe and Mn) are expressed in terms of total recoverable metal in the water column. Neither the WQS nor EPA's 1999 Recommended Criteria explicitly state the type of analysis to be used. In 1999, EPA was recommending for the first time that dissolved be used over total recoverable and changes were noted for each parameter. Therefore, the lack of specification implies that if a parameter was not noted, the type of analysis remained total recoverable.</p>		

The 2004 ambient monitoring program mistakenly required that all ambient monitoring be done in the dissolved form for metals. The Alaska WQS contain various forms for metals and these have been outlined in the table above.

The Permittee must use Minimum Levels (MLs) that can measure compliance with the permit limitations. Table 5 contains MLs for parameters not limited in the permit. The Permittee may request different MLs. Such a request must be in writing and must be approved by EPA and ADEC.

Table 5: Minimum Levels (ML)		
Parameter	Units	ML
Aluminum	ug/l	20
Antimony	ug/l	3
Arsenic	ug/l	5
Chromium, Total	ug/l	10

Table 5: Minimum Levels (ML)		
Parameter	Units	ML
Selenium	ug/l	1.9
Silver	ug/l	0.3

C. Monitoring Requirements

40 CFR 122.48(b) requires that the permit contain monitoring requirements. Self-monitoring of effluent parameters is necessary for the permittee to demonstrate compliance with effluent limitations, to assure that WQS are met, and to provide information for future permitting actions. Monitoring frequencies are based on the Agency's determination of the minimum sampling frequency required to adequately monitor the facility's performance. Required sample types are based on the Agency's determination of the potential for effluent variability. These determinations take into consideration several factors, of which the most important are the type of pollutants of concern and the type of treatment system. The Tables above and in Appendix C include the monitoring frequency and sample type proposed in the draft permit.

D. Best Management Practices

Section 304(e) of the CWA requires EPA to include conditions in the NPDES permit that require the permittee to develop a Best Management Practices (BMP) Plan. The BMP Plan will be used to control the discharge of toxics or hazardous pollutants by way of spillage or leaks, sludge or waste disposal, and drainage from raw material storage. Any applicable storm water requirements already included in the Storm Water Pollution Prevention Plan as required by the Storm Water Multi-Sector General Permit for Industrial Activities (MSGP) may be incorporated into the BMP Plan by reference.

The intent of the BMP Plan is to recognize the hazardous nature of various substances used and produced by the facility and the way such substances may be accidentally dispersed. The BMP Plan should incorporate elements of pollution prevention as set forth in the Pollution Prevention Act of 1990, 42 U.S.C. 13101.

The BMP Plan must be amended whenever there is a change in the facility or in the operation of the facility which materially increases the potential for an increased discharge of pollutants. Within 60 days of the effective date of the reissued permit, the permittee will be required to reevaluate the current BMP Plan and notify both EPA and ADEC when complete. Any changes made to the BMP Plan will follow the requirements of Permit Part II.F. BMP Plan Modification.

E. Quality Assurance Plan

The permittee was required under the current permit to develop and implement a Quality Assurance Plan. The purpose of the Quality Assurance Plan is to establish

appropriate sampling, handling and analytical procedures for all effluent, ambient water, and fish tissue samples taken. This plan may be contained in an overall project monitoring plan. Within 60 days of the effective date of the permit, the permittee will reevaluate the QAP and notify EPA and ADEC when this is complete.

F. Additional Permit Provisions

Sections II, III, and IV of the draft permit contain standard regulatory language that must be included in all NPDES permits. Because they are regulations, they cannot be challenged in the context of an NPDES permit action. The standard regulatory language covers requirements such as monitoring, recording, reporting requirements, compliance responsibilities, and other general requirements.

The standard regulatory language of a permit that ADEC would issue is different than that issued by EPA. Appendix E contains the standard language from the Alaska Pollutant Discharge Elimination System (APDES) Program.

VI. **OTHER LEGAL REQUIREMENTS**

A. Endangered Species Act

Section 7 of the Endangered Species Act (ESA) requires federal agencies to request a consultation with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) regarding potential effects an action may have on listed endangered species. EPA sent letters to the Services on April 28, 2009, requesting species lists for the project area.

EPA has not received a response from the Services so another request for an updated species list will be sent with the draft permit and fact sheet. EPA is not aware of any ESA listed species in the project area.

B. Essential Fish Habitat

Section 305(b) of the Magnuson-Stevens Act [16 USC 1855(b)] requires federal agencies to consult with NMFS when any activity proposed to be permitted, funded, or undertaken by a federal agency may have an adverse effect on designated Essential Fish Habitat (EFH) as defined by the Act. The EFH regulations define an adverse effect as any impact which reduces quality and/or quantity of EFH and may include direct (e.g., contamination or physical disruption, indirect (e.g., loss of prey, reduction in species' fecundity), site-specific, or habitat-wide impacts, including individual, cumulative or synergistic consequences of actions.

EPA has determined that re-issuance of this permit is not likely to have an adverse effect on EFH in the vicinity of the discharge. Effluent limitations have been incorporated into the draft permit based on criteria considered to be protective of overall water quality necessary to support aquatic life in the Goodpaster River. Also,

the facility will need to acquire any necessary Alaska Department of Fish and Game (ADF&G) permits which will be protective of the anadromous populations in the Goodpaster River. EPA will provide NMFS with copies of the draft permit and fact sheet during the public comment period. Any comments received from NMFS regarding EFH will be considered prior to final reissuance of the permit.

C. State Certification

CWA § 401 requires EPA to seek state certification before issuing a final permit. As a result of the certification, the state may require more stringent permit conditions to ensure that the permit complies with WQS. The certification may also require additional monitoring requirements and authorize a mixing zone. A CWA § 401 Certification is included as Appendix B.

D. Permit Expiration

This permit will expire five years from the effective date of the permit. Permits may be administratively extended under 40 CFR 122.6 if all the requirements of this regulation are met.

VII. **REFERENCES**

Reapplication package dated September 29, 2008.

Final Environmental Impact Statement. September 2003.

EPA 1999. *National Recommended Water Quality Criteria – Correction*. Office of Water, Washington DC, April 1999. EPA 822-Z-99-001.

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

Guidance on Water Quality Based Effluent Limits Set Below Analytical Detection/Quantitation Limits. EPA Memorandum from Cindi Godsey, NPDES Permits Unit; Michael Lidgard, Manager NPDES Permits Unit; and Kim Ogle, Manager NPDES Compliance Unit to the NPDES Permits Unit Consistency Book; April 25, 2005. Seattle, Washington.

EPA, 1996b. *The Metals Translator: Guidance for Calculation a Total Recoverable Permit Limit from a Dissolved Criterion*. EPA 823-B-96-007, June 1996.

1976 EPA Memorandum from Assistant Administrator for Enforcement, Assistant Administrator for Water and Hazardous Materials and General Counsel to the Regional Administrators and State NPDES Directors. Subject: Use of Low Flow Augmentation by Point Sources to Meet Water Quality Standards.

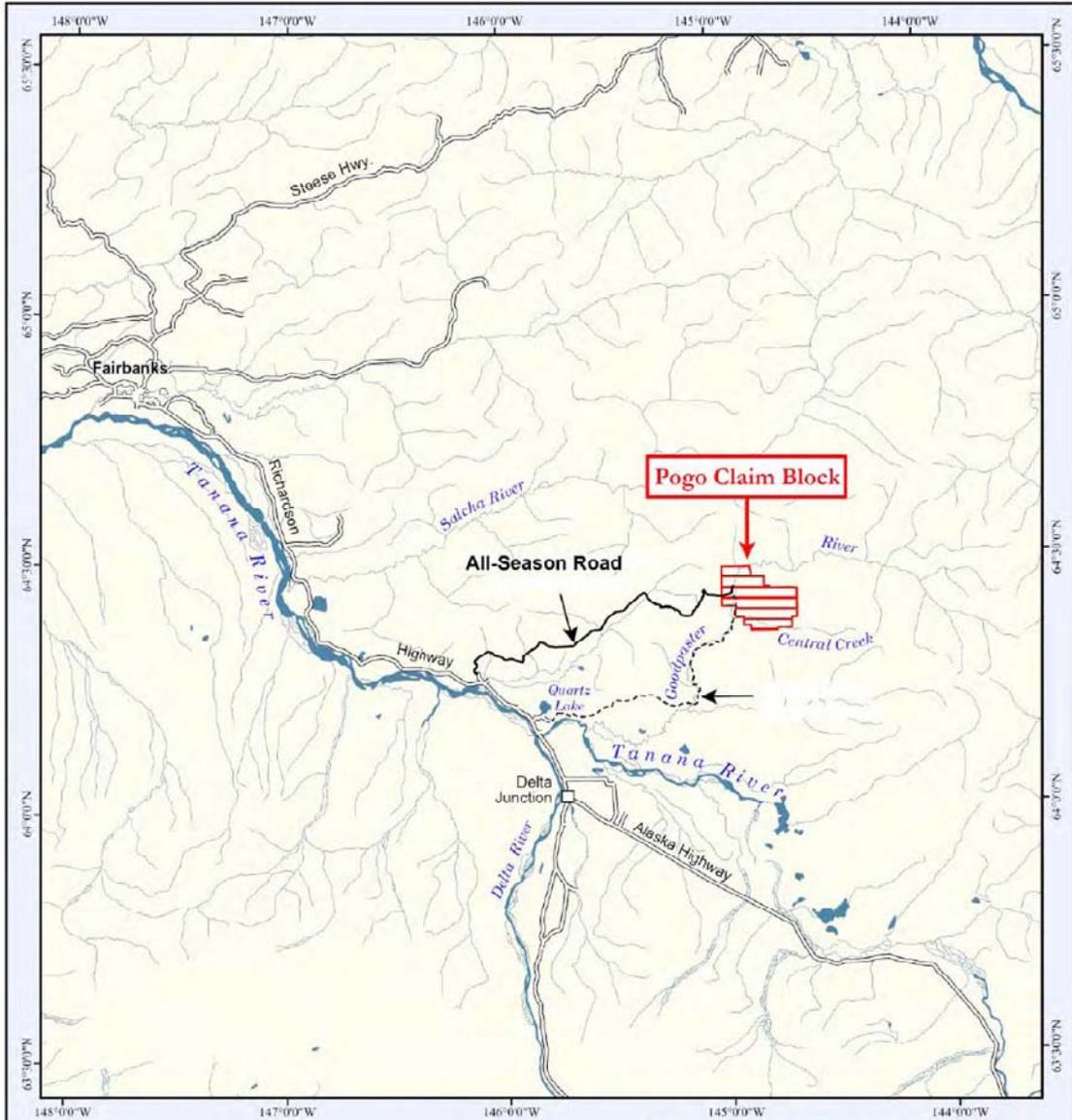
18 AAC 70, the Alaska Department of Environmental Conservation's Water Quality Standards with Alaska Water Quality Criteria Manual For Toxic And Other Deleterious Organic And Inorganic Substances as amended through December 12, 2008.

18 AAC 72, the Alaska Department of Environmental Conservation's regulations for Wastewater Disposal.

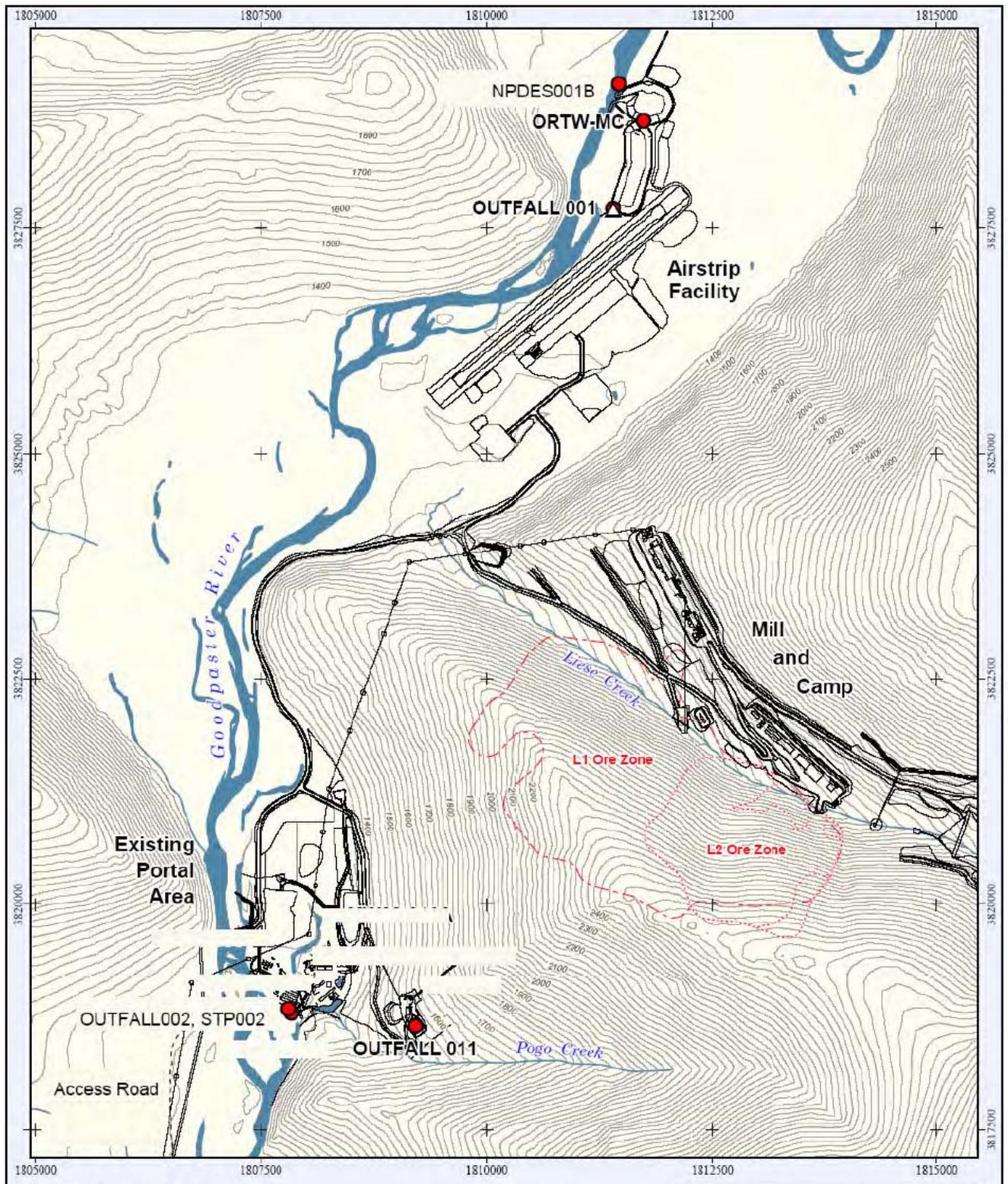
18 AAC 80, the Alaska Department of Environmental Conservation's regulations for Drinking Water.

Response dated March 1, 2010, from Sumitomo Metal Mining Company, Ltd. to EPA's Compliance Order by Consent (COBC).

APPENDIX A Pogo Project Location



APPENDIX A
Pogo Sampling Locations



APPENDIX B - Draft 401 State Certification

STATE OF ALASKA

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
WASTEWATER DISCHARGE AUTHORIZATION PROGRAM**

SEAN PARNELL, GOVERNOR
610 University Avenue
Fairbanks, Alaska 99709
Phone: (907) 451-2100
Fax: (907) 451-2187
www.dec.state.ak.us

October 12, 2010

File No. 121.62.003

Todd Roth, General Manager
Sumitomo Metal Mining Co., Ltd.
P.O. Box 145
Delta Junction, AK 99737

Re: Draft NPDES AK-005334-1, Pogo Mine

Dear Mr. Roth:

Under Section 401 of the Clean Water Act and provisions of the Alaska Water Quality Standards, Alaska Department of Environmental Conservation (department) issues the enclosed Certificate of Reasonable Assurance for *draft* National Pollutant Discharge Elimination System (NPDES) Permit AK-005334-1. Conditions in U.S. Environmental Protection Agency (EPA), draft NPDES Permit AK-005334-1 regulate the discharge of treated wastewater from Pogo Mine including discharge points, effluent limitations, and monitoring requirements.

The permitted discharges are located at Pogo Mine, 38 miles northeast of Delta Junction, Alaska, at the following locations (datum: NAD 83 Geographic):

<u>Outfall</u>	<u>Receiving Water</u>	<u>Latitude</u>	<u>Longitude</u>
001	Goodpaster River	64° 28' 12"	144° 55' 03"
002	Goodpaster River	64° 26' 36"	144° 56' 30"

Department regulations provide that any person who disagrees with this decision may request an informal review by the Division of Water Director in accordance with 18 AAC 15.185 or adjudicatory hearing in accordance with 18 AAC 15.195 - 18 AAC 15.340. An informal review request must be delivered to the Division of Water Director, 555 Cordova Street, Anchorage, AK 99501 within 15 days after receiving this permit decision. An adjudicatory hearing request must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Street, Suite 303, Juneau, AK 99811, within 30 days after the date of this permit decision. If a hearing is not requested within 30 days, the right to appeal is waived.

By copy of this letter, we are advising EPA of our actions and enclosing a copy of the Certificate for their use.

Sincerely,

Sharon Morgan, Manager
Wastewater Discharge Authorization Program

Enclosure: Certificate of Reasonable Assurance

cc: Tim Pilon, ADEC/Fairbanks
Cindi Godsey, EPA/Anchorage
Michael Bussell, EPA/Seattle
Jack Winters, ADF&G/Fairbanks

Jack DiMarchi, ADNR/Fairbanks
Allan Nakanishi, ADEC/Anchorage
Mac McLean, ADF&G/Fairbanks

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CERTIFICATE OF REASONABLE ASSURANCE

A Certificate of Reasonable Assurance, as required by Section 401 of the Clean Water Act (CWA), has been requested by U.S. Environmental Protection Agency (EPA) for draft National Pollutant Discharge Elimination System (NPDES) Permit AK-005334-1 to discharge treated domestic and non-domestic wastewater from the Pogo Mine. The facility is located 38 miles northeast of Delta Junction, AK, with discharges to the Goodpaster River.

A Water Quality Certification is required because the activity is authorized by an EPA permit identified as NPDES Permit AK-005334-1 and discharges will result from the activity.

This NPDES permit certification covers wastewater discharges from the following outfalls:

1. Outfall 001 – Discharge from the Off River Treatment Works including treated non-domestic wastewater including: mine drainage and mine site runoff. Outfall 001 is located at Latitude 64° 28' 12" N, Longitude 144° 55' 03" W.
2. Outfall 002 – Discharge from the domestic wastewater treatment plant. Outfall 002 is located at Latitude 64° 26' 36" N, Longitude 144° 56' 30" W.

Alaska Department of Environmental Conservation (department) reviewed the permit application and *draft* NPDES permit. Based on that, the department certifies there is reasonable assurance the proposed activity and the resulting discharges are in compliance with the requirements of Section 401 of the CWA, which includes 18 AAC 70 (Water Quality Standards (WQS)), provided that the terms and conditions of this permit and certification are adhered to.

In the 2004 401 certification, the permittee requested a natural condition-based site specific criterion (NCBSSC) under 18 AAC 70.235(b), as amended June 26, 2003, which are the most recent NCBSSC regulations approved by EPA for issuance and certification of NPDES permits. The department found that the applicant's proposal to measure the natural condition concurrent with the discharge is in accordance with 18 AAC 70.235(b). In September and October 2003, the public was notified about the NCBSSC in accordance with 18 AAC 70.235 (Site-specific criteria) and 18 AAC 15 (Administrative Procedures). The NCBSSC was approved by EPA Region 10 on March 11, 2004. See references.

The department reviewed the discharges with respect to the antidegradation policy of the WQS and finds the reduction in water quality to be in accordance with the requirements of 18 AAC 70.015 (Antidegradation policy), provided that the terms and conditions of this certification are covered by the NPDES permit. See Appendix A for the antidegradation analysis of decisions contained in this certification.

Through this certification, in accordance with 18 AAC 15.120 (Adoption of NPDES permits), the NPDES permit will constitute the permit required under AS 46.03.100 (Waste management and disposal authorization), provided that the terms and conditions of the certification are covered by the NPDES Permit. The department is specifying the following permit terms and conditions under authority of AS 46.03.110(d).

- 1) Goodpaster River – Outfall 002: The department authorizes a mixing zone with dilution of 9 parts receiving flow to 1 part effluent flow, equaling a dilution multiplier of 10, for fecal coliform bacteria (FC), nitrate, pH, dissolved oxygen, and chlorine (Cl) contained in the discharge from outfall 002. Modeling indicates that fecal coliform bacteria are the controlling parameter for the mixing zone size at outfall 002. The mixing zone is defined as a trapezoid with a downstream length of five feet. The bases of the trapezoid defining the mixing zone are five feet wide at the upstream end (the diffuser width is five feet) and seven feet at the downstream end. The mixing zone includes the vertical extent of the water column from the water surface to, but not including, the riverbed.

Rationale: In accordance with State Regulations, 18 AAC 70.240-270 (as amended June 26, 2003), the department can authorize mixing zones in permits or certifications. This mixing zone will ensure that the most stringent WQS limitations for fecal coliform bacteria, 20 FC per 100 milliliters (mL) as a 30-day geometric mean and not more than 10% of the samples may exceed 40 FC/100 mL, is met at all points outside of the mixing zone.

The department considered all aspects required in 18 AAC 70.015 (Antidegradation policy) and 18 AAC 70.240-270 (Mixing zones) including, but not limited to, the potential risk to human health and ecological resources based on existing monitoring data of the Goodpaster River water quality and mixing zone modeling of the predicted effluent quality from the discharge.

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

- 2) The department authorizes the outfall 002 effluent limits and monitoring frequency for the parameters contained in Table 3 of the draft permit.

Rationale: In accordance with State Regulations 18 AAC 70.245 (Mixing zones: appropriateness and size determination), the department has authority to ensure that existing uses of the waterbody outside the mixing zone are maintained and fully protected. The specified effluent limits and monitoring will provide evidence to the department that the treatment and mixing zone size are adequate to protect all designated and existing uses.

- 3) The department requires effluent limits for pH, which shall not be less than 6.0 standard units or greater than 9.0 standard units at outfall 002.

Rationale: In accordance with State Regulations 18 AAC 15.090 (Permit terms and conditions), the department may attach terms and conditions to a permit, variance, or approval, including operating, monitoring, inspection, sampling, access to records and reporting requirements, and the posting of a performance bond or other surety, that it considers necessary to ensure that all applicable criteria will be met.

- 4) The department requires an effluent limit for dissolved oxygen, which shall be greater than 2 milligrams per liter (mg/L) at all times from outfall 002.

Rationale: In accordance with State Regulations 18 AAC 15.090 (Permit terms and conditions), the department may attach terms and conditions to a permit, variance, or approval, including operating, monitoring, inspection, sampling, access to records and reporting requirements, and the posting of a

performance bond or other surety, that it considers necessary to ensure that all applicable criteria will be met.

- 5) The department requires that if chlorine (Cl) is used for disinfection, the daily maximum effluent limit for Cl shall be 0.02 mg/L at all times from outfall 002. The current EPA-approved method detection limit for Cl is 0.1 mg/L; therefore, the compliance level for Cl is 0.1 mg/L. If used for disinfection, Cl shall be sampled on a weekly basis (if Cl is used, the sampling reduction in footnote 2 of Table 3 in the *draft* permit applies) from outfall 002.

Rationale: In accordance with State Regulations 18 AAC 15.090 (Permit terms and conditions), the department may attach terms and conditions to a permit, variance, or approval, including operating, monitoring, inspection, sampling, access to records and reporting requirements, and the posting of a performance bond or other surety, that it considers necessary to ensure that all applicable criteria will be met.

- 6) The department authorizes the monitoring for the parameters listed in section I.E, Table 4, of the *draft* permit at the Goodpaster River station SW-42 to ensure that WQS are met at the outside boundary of the mixing zone. In order to ensure that the aquatic resources of the Goodpaster River are protected, the surface water monitoring contained in section I.E.1 should be specified to occur during the following six periods of time: (a) late-February to mid-March, (b) mid-May, (c) mid-June, (d) early-August, (e) late-September, and (f) during the month of December.

Rationale: In accordance with State Regulations 18 AAC 70.245 (Mixing zones: appropriateness and size determination), the department has authority to ensure that existing uses of the water body outside the mixing zone are maintained and fully protected. The specified effluent limitations and monitoring will provide evidence to the department that the treatment and mixing zone size are adequate to protect all designated uses.

- 7) To ensure that WQS are met at the outside boundary of the mixing zone, the department requires that monitoring at the Goodpaster River station SW-42 include all parameters for which a mixing zone has been authorized, FC, nitrate, pH, dissolved oxygen, and Cl (if used for disinfection).

Rationale: In accordance with State Regulations 18 AAC 70.245 (Mixing zones: appropriateness and size determination), the department has authority to ensure that existing uses of the water body outside the mixing zone are maintained and fully protected. The specified effluent limitations and monitoring will provide evidence to the department that the treatment and mixing zone size are adequate to protect all designated uses.

- 8) The department requires that signs be placed on the riverbanks near the mixing zone and the outfall 002 discharge line. The signs must provide the identity and telephone numbers of the discharger and must inform the public that a mixing zone exists, that treated and disinfected wastewater is being discharged, and that users of the area should exercise caution.

Rationale: In accordance with AS 46.03.110(d), the department may specify in a permit the terms and conditions under which waste material may be disposed. The notification requirement is intended to inform and provide assurances to the public that the wastewater is being treated in accordance with WQS.

APPENDIX A
ANTIDegradation ANALYSIS OF THE
CERTIFICATE OF REASONABLE ASSURANCE
FOR NPDES PERMIT AK-005334-1

The antidegradation policy of the Alaska Water Quality Standards (18 AAC 70.015) states that the existing water uses and the level of water quality necessary to protect existing uses must be maintained and protected. This appendix analyzes and provides rationale for the department's decisions in the Section 401 Certification with respect to the antidegradation policy.

The department's approach to implementing the antidegradation policy found in 18 AAC 70.015 is based on the requirements in 18 AAC 70 and the *Interim Antidegradation Implementation Methods* dated July 14, 2010. Using these requirements and policies, the department determines whether a waterbody or portion of a waterbody is classified as Tier 1, Tier 2, or Tier 3, where a larger number indicates a greater level of water quality protection. To qualify as a Tier 3, or "outstanding national resource" water, one of two criteria must be met. The water must either be 1) in a national or state park or wildlife refuge or 2) possess exceptional recreational or ecological significance. This evaluation considers the segment of the Goodpaster River including outfall 001, which discharges treated, mine contact water, and outfall 002, which discharges treated, domestic wastewater into a 30-square foot mixing zone. Neither Pogo Mine nor the Goodpaster River is located in a national or state park nor a wildlife refuge. Currently, the affected segment of the Goodpaster River is located in a remote and publicly inaccessible area, lacks exceptional recreational significance, and is not considered an area of exceptional ecological significance. Prevailing circumstances lack sufficient merit to consider designating the affected water as Tier 3. Since the department determined that the Goodpaster River is not Tier 3 water, the following analysis provides highest available level of protection or classifies the water as Tier 2. Under 18 AAC 70.015(a)(2), antidegradation analysis was applied on a parameter-by-parameter basis to permit limits associated with reduction of water quality.

The department's 401 certification of the *draft* NPDES permit authorizes a mixing zone at outfall 002, which discharges domestic wastewater after receiving secondary treatment. The mixing zone allows reduction of water quality within its boundaries (a trapezoid five feet extending five feet downstream to a width of seven feet) for pH and concentrations of fecal coliform bacteria (FC), nitrate, dissolved oxygen, and chlorine (Cl). The antidegradation analysis was applied on a parameter-by-parameter basis for pH and concentrations of FC, nitrate, dissolved oxygen, and Cl.

Outfall 001 discharges treated, mine contact water. Table 1 lists specific parameter-by-parameter changes made in the draft permit to effluent limits that are subject to antidegradation analysis.

Table 1: Comparison of outfall 001 effluent limits in the 2004 permit with the draft permit					
Parameter	Units	Effluent Limits			
		Maximum Daily		Average Monthly	
		2004	Draft	2004	Draft
Arsenic	µg/L	100.5	Limit removed but continue	50	Limit removed but continue monitoring
Cadmium	µg/L	0.22	0.2	0.11	0.1
Chromium,	µg/L	---	Monitoring	---	Monitoring removed
Chromium VI	µg/L	16	Limit and monitoring	8	Limit and monitoring removed
Cyanide	µg/L	8.5	6.9	4.3	4.7
Lead	µg/L	1.1	1.3	0.6	0.5
Manganese	µg/L	73	88.0	50	50.0
Nickel	µg/L	27	Limit and monitoring	13	Limit and monitoring removed
Zinc	µg/L	42.9	43.0	21.4	16.8
TDS	mg/L	820	Limit removed but continue	408	Limit removed but continue monitoring
Sulfates	mg/L	410	Limit removed but continue	204	Limit removed but continue monitoring

Wastewater discharged under this permit are subject to scrutiny as detailed in the department's July 14, 2010 Policy and Procedure guidance for *Interim Antidegradation Implementation Methods* for Tier 2 water. The State of Alaska's antidegradation policy states the following:

18 AAC 70.015(a)(1) existing water uses and the level of water quality necessary to protect existing uses must be maintained and protected;

18 AAC 70.015(a)(2) if the quality of water exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality must be maintained and protected unless the department, in its discretion, upon application, and after receiving from the applicant all information reasonably necessary for a decision on the application, allows the reduction of water quality for a short-term variance under 18 AAC 70.200, a zone of deposit under 18 AAC 70.210, a mixing zone under 18 AAC 70.240, or another purpose as authorized in a department permit, certification, or other approval. The department will allow a reduction of water quality only after finding that five specific requirements of the antidegradation policy at 18 AAC 70.015(a)(2)(A)-(E) are met. The department's findings follow.

(A) Allowing lower water quality is necessary to accommodate important economic or social development in the area where the water is located.

Rationale: Pogo Mine contributes substantial economic benefit to local and state economies by providing employment opportunities, payments in lieu of taxes (PILT), annual payments to the state, and business to supporting industries.

Alaska's Office of Economic Development, Mineral Development section provided economic data for Pogo Mine. A portion of that information is contained in the following summary. As an annual average during the first three years of production, 2006 through 2008, the mine provided 357 full-time equivalent jobs, paid about \$32,200,000 in wages, and spent \$110,500,000. Considering businesses that supported the mine, local and otherwise, 529 jobs were created annually during that span. In 2009, Pogo Mine produced 389,808 ounces of gold worth approximately \$379 million. The mine has also provided direct benefits to local government. To date, Pogo Mine has supplied \$1,000,000 to the City of Delta Junction through PILT.

As noted above, the operation of Pogo Mine is important to the economies of the City of Delta Junction, Fairbanks North Star Borough, and State of Alaska. The department finds that authorization of the mine's discharge accommodates important economic activity and that this requirement is met.

(B) The reduced water quality will not violate applicable water quality criteria except as allowed under 18 AAC 70.015(a).

Rationale: The discharge allowed by the permit at outfall 001 conforms to the requirements of 18 AAC 70.020, 18 AAC 70.235, and 18 AAC 70.030. No mixing zones are authorized at outfall 001. More specifically, the effluent limits in this permit for outfall 001 are based on the applicable water quality standards (18 AAC 70.020), converted to maximum daily and average monthly limits using established, EPA-consistent requirements and procedures, prescribed calculations, and water quality data collected as required by the 2004 permit.

With the exception of the mixing zone at outfall 002, the draft permit effluent limits prohibit violation of water quality standards in 18 AAC 70.020. Reduction of water quality in the mixing zone is specifically authorized in accordance with 18 AAC 70.240 to 18 AAC 70.270 (as amended June 26, 2003). The authorized mixing zone has been sized to ensure that all applicable water quality criteria are met at all points outside of the mixing zone; therefore, reduction of water quality in the mixing zone is allowed under the antidegradation policy at 18 AAC 70.015(a)(2), and outside the mixing zone 18 AAC 70.020 is observed.

The department finds that the reduced water quality will not violate applicable water quality criteria and that the requirement is met.

(C) Resulting water quality will fully protect existing uses.

Rationale: Data and performance of the wastewater treatment plants indicate that the water quality of discharges can and has fully protected existing uses. Regardless of the changes to the draft permit, these facilities are expected and required to continue protecting all designated and existing uses in the Goodpaster River. Additionally, aquatic biomonitoring in the Goodpaster River, as required by the draft permit, will ensure that all limits remain protective.

No mixing zone is authorized for outfall 001. The water quality standards, upon which the effluent limits are based, serve the specific purpose of protecting the existing and designated uses. Effluent

limits in this permit are the same as the 2004 permit or slightly different due to recalculation based on performance of the water treatment plant and water quality data.

A comparison of the effluent limits for cyanide, lead, manganese, and zinc from the draft permit to those in the 2004 permit shows that the daily maximum and monthly average limits increased or decreased slightly. That is because those limits were calculated using the 2005 through 2010 water quality data, and the more recent data set varied from previous data used to calculate limits. Despite the fact that some limits are less stringent, the limits are protective, based on new data, and resulted from strict adherence to prescribed limits and previously used calculation procedures. (See NPDES Fact Sheet, Appendix C, Section III. B. for an anti-backsliding analysis.)

Arsenic, total dissolved solids, and sulfate, monitoring requirements are carried forward in the draft permit, but limits contained in the 2004 permit are removed. The 2004 permit preceded construction and discharge from outfall 001. Development of the 2004 permit employed conservative assumptions broadening the constituents of concern to ensure protection of water quality. Consequently, arsenic, total dissolved solids, and sulfate were included. However, based on new data and strict adherence to prescribed limits calculation procedures, examination indicates that there is no reasonable potential for arsenic, total dissolved solids or sulfate to cause or contribute to an exceedance of water quality standards. Consequently, those limits cannot be generated, but monitoring for those parameters is carried forward in the draft permit as a measure for safety.

The data for total chromium, chromium VI, and nickel indicate that the pollutants are not constituents of concern. Further, the concentrations of these constituents in the effluent are exceptionally low, and statistical analyses of water quality data, reasonable potential analyses, indicate total chromium, chromium VI, and nickel monitoring is unnecessary and not required.

The draft permit proposes the same effluent limits for outfall 002 for discharge from the domestic wastewater treatment plant as the 2004 permit. The draft permit includes restrictions on flow and effluent limits for pH, FC, Cl, nitrate, and dissolved oxygen. Effluent water quality has been sampled and analyzed weekly since 2005. With the exception of five FC exceedances during upset conditions when effluent flows were greatly reduced, all effluent limits have been met and a large margin of compliance maintained.

Monitoring station SW-42 was established in Goodpaster River to measure impacts to water quality beyond the mixing zone. Since 2005, water from SW-42 has been sampled and analyzed six times per year for an array of constituents including those which have a mixing zone. Ambient downstream water quality data indicates that WQS have been maintained and all uses protected.

The department finds that the resulting water quality will be adequate to fully protect existing and designated uses and that the requirement is met.

(D) *The most effective and reasonable methods of pollution prevention control and treatment will be applied to all wastes and other substances to be discharged.*

Rationale: The department finds the most effective methods of prevention, control, and treatment are the practices and requirements set out in this permit and currently in use for both outfalls at this mine. The permittee is required to implement a best management practices (BMP) plan as required by the 2004 permit and draft permit. The permittee was required in the 2004 permit, and is still required in the draft permit, to review their BMP Plan annually. The BMP Plan includes pollution

prevention measures and controls appropriate for each facility and discharge. The design, construction, and performance of the water treatment plants has also been reviewed and approved by the department.

The water treatment plant uses three steps to remove contaminants from wastewater before discharge via outfall 001. First, a high-density sludge process co-precipitates metals. Second, a lime-softening and recarbonation process removes calcium and magnesium and thereby reduces total dissolved solids. Third, a multi-media pressure filter removes residual suspended before discharge. This is a proven treatment technology and water quality data of the water treatment plant effluent indicates that it performs effectively.

The facility treats domestic sewage with a sequencing batch reactor including nutrient removal and disinfection with ultraviolet light before discharging via outfall 002. This proven state of the art technology goes beyond secondary treatment standards in providing tertiary treatment.

The department finds that this criterion to address pollution prevention, control, and treatment is met.

(E) Wastes and other substances discharged will be treated and controlled to achieve the highest statutory and regulatory requirements.

Rationale: Applicable “highest statutory and regulatory requirements” are defined in 18 AAC 70.990(30) (as amended June 26, 2003). Accordingly, there are three parts to the definition. The first part of the definition includes all federal technology-based effluent limitation guidelines (ELGs). For outfall 001, the draft permit imposes the technology-based ELGs for the subcategory of gold mines as found in 40 Code of Federal Regulations (CFR), Part 440, Subpart J.

Pogo Mine’s wastewater treatment plant is a privately owned treatment works, and there are no promulgated technology-based effluent limits that apply specifically to privately owned treatment works. When technology-based effluent limits have not been promulgated, technology-based effluent limits may be established using best professional judgment (BPJ) under the authority of Section 402(a)(1)(B) of the CWA. An accepted exercise of BPJ is to apply promulgated technology-based effluent limits for similar sources to the source being permitted (see page 71 in U.S. EPA NPDES Permit Writer’s Manual, EPA-833-B-96-003). Even though the permitted facility is not a publicly owned treatment works (POTW), it serves the same function as a POTW, i.e. treat and discharge domestic wastewater. BPJ indicates that “secondary treatment” effluent limitations, found in 40 CFR §133.102 apply to Pogo Mine wastewater treatment plant under authority of Section 402(a)(1)(B) of the CWA, and the draft permit imposes “secondary treatment” standards at outfall 002.

The second part of the definition of “highest statutory and regulatory requirements” considers discharge of sewage to sewers and is not applicable to this facility.

The third part of “highest statutory and regulatory requirements” considers any more stringent treatment required by state law including 18 AAC 70 and 18 AAC 72. The draft permit requires the permittee to implement a BMP Plan, which will control the discharges to satisfy all applicable state and federal limitations.

The department finds that the treatment required in this permit achieves the highest statutory and regulatory requirements and that the requirement is met.

References

Alaska Department of Commerce, Community, and Economic Development. June 8, 2010. Richard Hughes email and attached Excel file.

ADEC (Alaska Department of Environmental Conservation). 2003. 18 AAC 70.240-270. June 26, 2003. pp 41–47.

ADEC. 2010. Interim Antidegradation Implementation Methods. Policy and Procedure Number 05.03.103. July 14, 2010. 12 pp.

Basketfield, S.S. 2002. Design of a Mixing Zone in the Goodpaster River for Discharge of Treated Domestic Wastewater from the Pogo Mine. Design Science & Engineering, Inc. December 2002. 18 pp.

EPA (U.S. Environmental Protection Agency). March 11, 2004. Letter from EPA Region 10 Director, Randall Smith, to ADEC Division of Water Director, Dan Easton, approving Goodpaster River Natural Condition Site-Specific Criteria. 3 pp.

Sumitomo Metal Mining Pogo LLC. 2010. Pogo Mine 2009 Annual Activity and Monitoring Report. March 1, 2010. 86 pp.

APPENDIX C - Development of Effluent Limitations

The section discusses the basis for and the development of limitations in the proposed permit. The discussions include the development of technology-based effluent limitations (Section I.) and water quality-based effluents limitations (Section II.) and a summary of the effluent limitations included in the draft permit.

I. Outfall 001 Evaluation

A. Technology-based Evaluation

Section 301(b) of the CWA requires technology-based controls on effluents. Pogo is considered a new source. The term “*new source*” means any source, the construction of which is commenced after the publication of proposed regulations prescribing a standard of performance under this section (Section 306 of the CWA) which will be applicable to such source, if such standard is thereafter promulgated in accordance with this section. On December 3, 1982, EPA published effluent guidelines for the mining industry which are found in 40 CFR Part 440. Within these guidelines, Subpart J of Part 440, titled *Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores Subcategory*, applies to the mine discharges from Pogo. The New Source Performance Standards (40 CFR 440.104) are used to provide the technology-based effluent limitations for copper, zinc, lead, mercury, cadmium, pH and TSS.

40 CFR 440.104(a) states that the concentration of pollutants discharged in mine drainage from mines that produce copper, lead, zinc, gold, silver or molybdenum bearing ores or any combination of these ores from open-pit or underground operations other than placer deposits shall not exceed:

TABLE C-1 Technology-based Effluent Limitations		
Parameter	Daily Maximum	Monthly Average
TSS, mg/L	30	20
Cadmium, ug/L	100	50
Copper, ug/L	300	150
Lead, ug/L	600	300
Zinc, ug/L	1500	750
Mercury, ug/L	2	1
pH, standard units	Between 6.0 and 9.0	

40 CFR 440.104(b) states that there shall be no discharge of process wastewater to navigable waters from mills that use the froth-flotation process alone or in conjunction with other processes for the beneficiation of gold ore. In the event that the annual precipitation falling on the treatment facility and the drainage area contributing surface runoff to the treatment facility exceed the annual evaporation, a volume of water equal to the difference (net precipitation) may be discharged subject to the limitations set forth in Table C-1, above.

B. Water Quality-based Evaluation

CWA § 301(b)(1)(C) requires the development of limitations in permits necessary to meet water quality standards. Discharges to state waters must also comply with limitations imposed by the state as part of its certification of NPDES permits under CWA § 401. The NPDES regulation [40 CFR 122.44(d)(1)] implementing CWA § 301(b)(1)(C) requires that permits include limits for all pollutants or parameters which “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 state narrative criteria for water quality.”

The regulations require that this evaluation be made using procedures which account for existing controls on point and non-point sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water. The limits must be stringent enough to ensure that water quality standards are met, and must be consistent with any available wasteload allocation.

When evaluating the effluent to determine if water quality-based effluent limits are needed based on chemical specific numeric criteria, a projection of the effluent water concentration (where no mixing zone is authorized) for each pollutant of concern is made. The chemical specific concentration of the effluent and ambient water and, if appropriate, the dilution available from the ambient water are factors used to project the receiving water concentration. If the projected concentration of the effluent exceeds the numeric criterion for a specific chemical, then there is a reasonable potential that the discharge may cause or contribute to an excursion above the applicable water quality standard, and a water quality-based effluent limit is required.

The water quality parameters that may be affected by the discharge are metals (cadmium, copper, lead, manganese, mercury and zinc), cyanide, pH, sulfates, and turbidity.

1. **Toxics - Metals and Cyanide**

Water quality based effluent limitations for metals were developed based upon guidance in EPA's Technical Support Document for Water Quality-based Toxics Control (TSD). The water quality-based analysis consists of four steps:

- Δ Determine the appropriate water quality standard,
- Δ Determine if there is “reasonable potential” for the discharge to exceed the standard in the receiving water,
- Δ If there is “reasonable potential”, develop a wasteload allocation (WLA), and a long term average (LTA), then
- Δ Develop effluent limitations based on the LTA.

The following sections provide a detailed discussion of each step. Appendix D provides an example calculation to illustrate how these steps are implemented.

a. Water Quality Standards

The first step in developing water quality-based limitations is to determine the applicable water quality standard. For Alaska, the current State Water Quality Standards (WQS) are found in 18 AAC 70. The applicable criteria are based on the designated uses of the receiving water. The Goodpaster River is protected for all designated uses so the most stringent standard applicable is used in determining the reasonable potential to violate water quality standards for aquatic life and calculate the effluent limitations. These standards are provided in Table C-2.

Parameter, (in ug/L unless noted otherwise)	Aquatic Life		Other	
	Acute	Chronic	(D)rinking (H)uman Health	(I)rrigation (S)tock
Aluminum	750	87	5000(I)	
Arsenic	340	150	10(D) 100(I) 50(S)	
Cadmium ¹	0.62	0.11	5(D) 10 (S,I)	
Chlorides (mg/L)	860	230	—	
Chromium, III	670	32	—	
Chromium, VI	16	11	50 (S)	
Copper ¹	4.5	3.3	1300 (H) 200 (I)	
Cyanide ²	22	5.2	200 (D) 700 (H)	
Iron	—	1000	5000 (I)	
Lead ¹	17.5	0.68	5000 (I) 50 (S)	
Manganese	—	---	50 (H) 200 (I)	
Mercury	2.4	0.012	0.14	
Nickel ¹	168.6	18.7	610 (H) 200 (I)	
Selenium	20	5	50 (D) 170 (H) 20 (I) 10 (S)	
Silver ¹	0.51	---	—	
Zinc ¹	43	43	2000 (I) 9100(H)	
TDS	Shall not exceed 500 mg/L		—	
Sulfates	Shall not exceed 250 mg/L		—	
1 - Hardness based standards at H = 29.82 mg/L				
2 - Free cyanide is measured as weak acid dissociable (WAD).				

Some criteria are expressed as a function of hardness (measured in mg/L of calcium carbonate - CaCO₃). As the hardness of the receiving water increases, the toxicity decreases and the numerical value of the criteria increases. Because a mixing zone is not allowed where it could have an adverse impact on anadromous or resident fish spawning [18 AAC 70.250(2)(A)], the 5th percentile

receiving water hardness of 29.82 mg/L CaCO₃ was used to determine the criteria for the hardness-based metals indicated in Table C-2.

b. Reasonable Potential Evaluation

A reasonable potential analysis was performed to verify the need for limits. This analysis compares the maximum projected effluent concentration (C_e) to the standard for that pollutant. If the projected effluent concentration exceeds the standard, there is “reasonable potential” (RP) and a limit must be included in the permit. EPA uses the recommendations in Chapter 3 of the TSD to conduct this analysis.

The maximum projected effluent concentration (C_e) is defined by the TSD as the 99th percentile of the effluent data. This is calculated by multiplying the maximum reported effluent concentration by a reasonable potential multiplier (RPM). Pogo is a new source and in 2004, no effluent had been discharged so modeling was done to determine the probable effluent characteristics for the RP evaluation performed for the 2004 permit. During the reissuance of this permit, the maximum value of the actual effluent data will be used to reanalyze the RP. For parameters with technology-based effluent limitations guidelines, the maximum effluent concentration used to determine the RP is the technology-based maximum daily limitation. The technology-based limits are used since water quality-based limits are only required if discharges at the technology-based limits have the RP to exceed water quality standards in the receiving water. The RPM accounts for uncertainty in the effluent data. The RPM statistically depends upon the amount of effluent data and the variability of the data as measured by the coefficient of variation (CV) of the data set. The RPM decreases as the number of data points increases and the variability of the data decreases. If the maximum projected effluent concentration is greater than the applicable water quality criterion then a water quality-based effluent limit is required.

Table C-3
Reasonable Potential Determination

Parameter (in ug/L unless otherwise noted)	Maximum Effluent Concentration	Number of Samples	CV	RPM	Maximum Projected Effluent Concentration	Reasonable Potential (when compared with Standards in Table C-2)
Arsenic	1.73	257	0.73	1.2	2.0	No
Cadmium ¹				1.0	100	Yes
Cadmium	0.18	258	1.014	1.21	0.2	Yes
Chromium ²	2.12	258	0.912	1.19	2.5	No
Copper ¹				1.0	300	Yes
Copper	5.0	250	0.6	1.14	5.7	Yes
Cyanide ³	30.9	514	1.19	1.0	30.9	Yes
Lead ¹				1.0	600	Yes
Lead	0.894	259	1.093	1.22	1.1	Yes

**Table C-3
Reasonable Potential Determination**

Parameter (in ug/L unless otherwise noted)	Maximum Effluent Concentration	Number of Samples	CV	RPM	Maximum Projected Effluent Concentration	Reasonable Potential (when compared with Standards in Table C-2)
Manganese	41.8	258	0.731	1.16	48.3	No
Mercury ¹				1.0	2	Yes
Mercury	0.0054	259	0.995	1.2	0.007	No
Nickel	5.0	258	1.369	1.26	6.3	No
Sulfate (mg/L)	43	258	0.232	1.05	45.2	No
TDS (mg/L)	149.0	258	0.155	1.04	154.2	No
Zinc ¹				1.0	1500	Yes
Zinc	13.4	259	1.033	1.21	16.2	No

¹ Metals with technology-based effluent guidelines.

² These values are reported as total chromium but the comparison is to chromium VI. Even if all the chromium reported was chromium VI, there would be no reasonable potential to violate the Cr VI standard.

³ Since the maximum value for WAD cyanide exceeds the criteria, there is reasonable potential to violate the standard without determining an RPM.

c. Water Quality-Based Permit Limitation Derivation

Once EPA has determined that a water quality-based limitation is required for a pollutant, the first step in developing the permit limitation is development of a Wasteload Allocation (WLA) for the pollutant. A WLA is the concentration (or loading) of a pollutant that the permittee may discharge without causing or contributing to an exceedence of water quality standards in the receiving water. WLAs and permit limitations are derived based on guidance in the TSD. WLAs for this permit were established based on meeting water quality standards at the end-of-pipe using the current Alaska WQS. The WLAs used to determine the permit limitations are equal to those used to calculate the current effluent limitations.

The acute and chronic WLAs are then converted to long term average concentrations (LTAs) and compared. The most stringent LTA concentration for each parameter is statistically converted to effluent limitations. This section describes each of these steps.

Calculations of WLAs:

Where no mixing zone is allowed, the standard becomes the WLA. Establishing the standard as the WLA ensures that the permittee does not contribute to an exceedence of the standard.

The NPDES regulations require that metals limits be expressed as total recoverable (TR) metals [40 CFR 122.45(c)]. This is because changes in water chemistry as the effluent and receiving water mix could cause some of the

particulate metal in the effluent to dissolve. Because the WQS are expressed in dissolved, a translator is used in the WLA equation to convert the dissolved criteria to total recoverable. Since the State has not proposed translators in the recent revision to the WQS and there are no site-specific translators, the default of 1/CF where CF is the conversion factor in the WQS is used.

the WLA (TR) = the standard (diss) * the translator.

The WQS are expressed as a total recoverable number or an equation multiplied by a conversion factor (CF). Since the default translator is 1/CF, the equation becomes:

$$\text{WLA (TR)} = \text{CF} * \text{standard (TR)} * 1/\text{CF}$$

$$\text{WLA (TR)} = \text{standard (TR)}.$$

Calculations of Long-term Average (LTA) Concentrations:

As discussed above, WLAs are calculated for each parameter for each standard (acute, chronic). Because standards are based on different criteria which apply over different time frames, it is not possible to compare them or the WLAs directly to determine which results in the most protective limits. For example, acute criteria are applied as a one-hour average, while chronic criteria are applied as a four-day average.

To allow for comparison, the acute and chronic WLAs are statistically converted to LTA concentrations. The conversion is dependent upon the coefficient of variation (CV) of the effluent data and the probability basis used. The probability basis corresponds to the percentile of the estimated concentration. EPA uses a 99th percentile for calculating LTA, as recommended in the TSD. The following equation from Chapter 5 of the TSD is used to calculate the LTA concentrations (Table 5-1 of the TSD may also be used).

$$\text{LTA} = \text{WLA} * \exp[0.5\sigma^2 - z\sigma]$$

Where:

$$\sigma^2 = \ln(\text{CV}^2 + 1) \text{ for acute WLA, and}$$

$$\sigma^2 = \ln(\text{CV}^2/4 + 1) \text{ for chronic WLA}$$

CV= the coefficient of variation (see Table C-3)

Z = 2.326 for the 99th percentile probability basis (TSD)

Calculation of Effluent Limitations:

The LTA concentration is calculated for each WLA and compared. The most stringent LTA concentration is then used to develop the maximum daily limitation (MDL) and the average monthly limitation (AML) to be used in the permit. The MDL is based on the CV of the data and the probability basis while the AML is dependent upon these two variables and the monitoring frequency. As recommended in the TSD, EPA used a probability basis of 95 percent for the AML calculation and 99 percent for the MDL calculation. The MDL and AML are

calculated using the following equations from the TSD (Table 5-2 of the TSD may also be used).

$$\text{MDL or AML} = \text{LTA} * \exp[z\sigma - 0.5\sigma^2]$$

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

For the AML: $\sigma^2 = \ln(\text{CV}^2/4 + 1)$
 $z = 1.645$ for the 95th percentile probability basis (TSD)

For setting water quality-based limits for protection of human health (Manganese), the TSD recommends setting the AML equal to the WLA then calculating the MDL. The human health MDL is calculated based on the ratio of the AML and MDL as described in Table 5-3 of the TSD.

Appendix D shows an example of the WLA, LTA, and permit limitation calculations for copper in Outfall 001.

2. **Total Dissolved Solids (TDS):** The WQS require that the level of TDS not exceed 500 mg/L and the level of neither chlorides nor sulfates may exceed 250 mg/L.

The maximum value measured in the effluent over the period from July 2005 to December 2009 was 149 mg/L. The maximum projected effluent concentration is 154 mg/L. Since this level does not exceed the WQS, there is no reasonable potential to violate the standard and no effluent limitation is required. Effluent monitoring for TDS will still be required but at the reduced frequency of monthly.

3. **Turbidity:** The most protective standard for turbidity is for the water supply use for drinking, culinary and food processing. The turbidity may not exceed 5 nephelometric turbidity units (NTU) above natural conditions. Natural conditions, as defined in 18 AAC 70.990(42), means any physical, chemical, biological, or radiological condition existing in a waterbody before any human- caused influence on, discharge to, or addition of material to the waterbody. The measure of the natural condition of the Goodpaster River is upstream of the discharge at a point where the river is not influenced by the presence of the mine development. This point could be immediately upstream of the intake to the ORTW if this point is not influenced by any facility disturbance that may cause increased turbidity in the Goodpaster River.
4. **Chromium:** The most protective standard for Chromium is for the hexavalent form or Cr VI. The acute criterion is 16 ug/L and the chronic value is 11 ug/L. Sampling for Cr VI is challenging because the hold time is only 24 hours. The 2004 permit contained limitations for Cr VI based on the projected effluent quality from the modeling but only required that Cr VI be analyzed if the total Chromium levels were greater than 11 ug/L. The data collected for total Chromium during the 2004 permit cycle shows that even if all the Chromium found in the effluent was Cr VI, there would be no reasonable potential for the effluent to exceed the criteria. EPA has removed the limitations and monitoring for Cr VI and the

monitoring requirements for total Chromium because there is no reasonable potential to exceed the criteria so limitations are not warranted.

5. **pH:** The WQS require a pH range of 6.5 - 8.5 standard units for waters protected for aquaculture, water supply and contact recreation.

III. Summary of Draft Permit Effluent Limitations

As discussed in Section V.A. of the fact sheet, the draft permit contains the more stringent of technology and water quality-based effluent limitations. The water quality-based limits are more stringent than the technology-based limits for the metals of concern and have therefore been included in the permit.

A. Proposed Effluent Limitations & Monitoring Requirements for Outfall 001

Table C-4 contains the effluent limitations and monitoring requirements proposed in this draft permit. The above calculations to determine reasonable potential show that limitations are not required for the following parameters: Total Chromium, Chromium VI, and Nickel. Limitations and monitoring for these parameters have been removed from the permit.

Some parameters that show no reasonable potential in the above calculations are proposed to be monitored in the draft permit. These include: arsenic, total dissolved solids, sulfates and turbidity.

Changes in the monitoring requirements are being proposed based on the reasonable potential evaluation. Monthly monitoring is proposed for those parameters that have no effluent limitations except for WET which contains annual monitoring. Parameters that have no reasonable potential to violate WQS but are required to be included in the permit because they are contained in the ELG are proposed to have monthly monitoring as well. Any parameter showing a reasonable potential to violate WQS will continue to be monitored weekly.

Table C-4: Proposed Effluent Limitations & Monitoring Requirements Outfall 001					
Parameter	Units	Effluent Limitations		Monitoring Requirements	
		Maximum Daily	Average Monthly	Sample Frequency	Sample Type
Arsenic ¹	ug/l	---	---	Monthly	Grab
Cadmium ¹	ug/l	0.2	0.1	Weekly	Grab
Copper ¹	ug/l	4.5	2.2	Weekly	Grab
Cyanide ²	ug/l	6.9	4.7	Weekly	Grab
Lead ¹	ug/l	1.3	0.5	Weekly	Grab
Manganese ¹	ug/l	88.0	50.0	Weekly	Grab
Mercury ³	ug/l	0.02	0.01	Monthly	Grab
Zinc ¹	ug/l	43.0	16.8	Monthly	Grab
TDS	mg/l	---	---	Monthly	Grab
Turbidity, effluent	NTU	---	---	Monthly	Grab
Turbidity, natural condition	NTU	---	---	Monthly	Grab
Sulfates	mg/l	---	---	Monthly	Grab
pH	s.u.	6.5 to 8.5		Weekly	Grab
Outfall Flow	gpm	15,600	---	Continuous	Recording
Hardness, as CaCO ₃	mg/l	---	---	Weekly	Grab
Chronic Whole Effluent Toxicity	TU _c	---	---	Annual	Grab

Footnotes:
1 - These parameters must be analyzed and reported as total recoverable.
2 - Free cyanide is analyzed and reported as weak acid dissociable (WAD)
3 - Mercury must be analyzed and reported as total.

EPA is also proposing that the flow limitation found in Table 1 of the draft permit not apply to Outfall 001 if the facility has not discharged effluent into the ORTW for 72 hours. At this time, the water flowing through the ORTW should consist of river water alone so there is no need to limit the flow in the system.

B. Backsliding

Under the anti-backsliding provisions of the Act, any limit in a reissued permit must be at least as stringent as the current limit unless a change meets one of the exceptions listed in CWA § 402(o)(2):

402(o)(2) EXCEPTIONS — A permit with respect to which paragraph (1) applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant if —

- (A) material and substantial alterations or addition to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;
- (B)(i) information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or
 - (ii) the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B).
- (C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;
- (D) the permittee has received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); or
- (E) the permittee has installed the treatment facilities required to meet the effluent limitations in the current permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the current effluent limitation, in which case the limitation in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

Subparagraph (B) shall not apply to any revised waste load allocations or any alternative grounds for translating water quality standards into effluent limitation, except where the cumulative effect of such revised allocations results in a decrease in the amount of pollutants discharged into the concerned waters and such revised allocations are not the result of a discharger eliminating or substantially reducing its discharge of pollutants due to complying with the requirements of this Act or for reasons otherwise unrelated to water quality.

The changes in the permit's effluent limitations are the result of the collection of information to characterize the effluent. The information used to calculate the limits for the 2004 permit was based on theoretical information on the efficacy of the treatment plant and ORTW which provided projections of the final effluent characteristics. The limitations developed for this draft permit are based on the analysis of actual effluent that has been treated within the system. Any changes in the effluent limitations are based on the collection and statistical analysis of this new information and, if the limitations increase or show no reasonable potential and are no longer necessary, backsliding is allowed per CWA 402(o)(B)(i). This is true only if the Wasteload Allocations relied on are the same as those previously used to calculate effluent limitations. The WLAs used to calculate the effluent limitations for this draft permit are the same as those used in the 2004 permit. EPA (or ADEC)

may elect to reissue the permit with the 2004 effluent limitations except where a WLA has become more stringent.

APPENDIX D - Example Water Quality-based Effluent Limitation Calculation

This appendix demonstrates how the water quality-based analysis (reasonable potential determination and development of effluent limitations) was performed using copper at Outfall 001 as an example.

Step 1: Determine the applicable water quality standard.

Table D-1 Copper criteria				
Parameter	Acute standard	Chronic standard	Human Health Standard	Drinking Water Standard
Copper*, ug/L	4.48	3.3	1300	---
* these standards are already translated from the dissolved standard to a total recoverable standard				

Step 2: Determine if there is reasonable potential for the discharge to exceed the standard.

To determine reasonable potential, the maximum projected effluent concentration, when no mixing zone is authorized, is compared to the applicable water quality standards. If this exceeds the standard, then a reasonable potential exists and a water quality-based effluent limit is established.

Since copper is a technology-based effluent limit, the following equation applies:

$$300 * \text{RPM (reasonable potential multiplier)} = 300 * 1 = 300 \text{ ug/L}$$

If this had been based on a water quality-based limit, the following calculations apply where:

$$P_n = (1 - \text{confidence level})^{1/n} = (1 - 0.99)^{1/250} = 0.982$$

Where P_n is the percentile represented by the highest concentration in the data set
the confidence level is the 99th percentile = 0.99
n = the number of samples = 250

$$\text{RPM} = C_{99}/C_{0.982} = \exp(z_{0.99}\sigma - 0.5\sigma^2) / \exp(z_{0.982}\sigma - 0.5\sigma^2)$$

Where $z_{0.99} = 2.326$ for 99th percentile probability basis
 $\sigma^2 = \ln(\text{CV}^2 + 1) = \ln(0.598^2 + 1) = 0.306$ $\sigma = 0.553$
 $z_{0.982} = 2.097$ for 98.2th percentile probability basis

$$\begin{aligned} \text{RPM} &= \exp[(2.326*0.553) - (0.5*0.306)] / \exp[(2.097*0.553) - (0.5*0.306)] \\ &= 1.14 \end{aligned}$$

The maximum measured effluent value is 5.0 so the calculated maximum effluent value is $5.0 * 1.14 = 5.7$. Since this value exceeds the copper criteria of 3.32 ug/L, the effluent from Outfall 001 has the reasonable potential to exceed the copper water quality standard therefore, water quality-based limitations are required.

Step 3: Determine the wasteload allocation.

The wasteload allocations (WLAs) for cadmium are equal to the standards:

<u>WLA</u>			
Acute	4.48	Chronic	3.32

Step 4: Develop long-term average (LTA) concentrations.

Effluent limitations are developed by converting the aquatic WLAs to LTAs. The most stringent of the acute or chronic LTA is then used to develop the effluent limitations.

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

where,

$z = 2.326$ for 99th percentile probability basis (per the TSD)

$CV = 0.598$

For acute: $\sigma^2 = \ln(CV^2 + 1) = \ln[(0.598)^2 + 1] = 0.306$ $\sigma = 0.55$

For chronic: $\sigma^2 = \ln(CV^2/4 + 1) = \ln[(0.598)^2/4 + 1] = 0.086$ $\sigma = 0.29$

LTA

Acute $4.48 * \exp[(0.5 * 0.306) - (2.326 * 0.55)] = 1.45$

Chronic $3.3 * \exp[(0.5 * 0.086) - (2.326 * 0.29)] = 1.75$

The most stringent LTA concentration (acute) is used to derive the aquatic life effluent limitations for copper for outfall 001.

Step 5: Develop effluent limitations

The acute LTA concentration is converted to a maximum daily limit (MDL) and an average monthly limit (AML).

$$MDL, AML = LTA * \exp[z\sigma - 0.5\sigma^2]$$

where, for the MDL:

$z = 2.326$ for 99th percentile probability basis (per the TSD)

σ^2, σ See acute, above

for the AML:

$z = 1.645$ for the 95th percentile probability basis (per the TSD)

σ^2, σ See chronic, above

$n =$ number of samples per month = 4

$$MDL = 1.45 * \exp[z\sigma - 0.5\sigma^2] = 1.45 * \exp[2.326 * 0.55 - 0.5 * 0.306] = 4.47$$

$$AML = 1.45 * \exp[z\sigma - 0.5\sigma^2] = 1.45 * \exp[1.645 * 0.29 - 0.5 * 0.086] = 2.24$$

STANDARD CONDITIONS

APDES PERMIT

NONDOMESTIC DISCHARGES

June 2010

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Appendix A of the permit contains standard regulatory language that must be included in all APDES permits. These requirements are based on the regulations and cannot be challenged in the context of an individual APDES permit action. The standard regulatory language covers requirements such as

monitoring, recording, reporting requirements, compliance responsibilities, and other general requirements. Appendix A, Standard Conditions is an integral and enforceable part of the permit. Failure to comply with a Standard Condition in this Appendix constitutes a violation of the permit and is subject to enforcement.

1.0 Standard Conditions Applicable to All Permits

1.1 Contact Information and Addresses

1.1.1 Permitting Program

Documents, reports, and plans required under the permit and Appendix A are to be sent to the following address:

State of Alaska
Department of Environmental Conservation
Division of Water
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, Alaska 99501
Telephone (907) 269-6285
Fax (907) 269-7508
Email: DEC.WQPermit@alaska.gov

1.1.2 Compliance and Enforcement Program

Documents and reports required under the permit and Appendix A relating to compliance are to be sent to the following address:

State of Alaska
Department of Environmental Conservation
Division of Water
Compliance and Enforcement Program
555 Cordova Street
Anchorage, Alaska 99501
Telephone Nationwide (877) 569-4114
Anchorage Area / International (907) 269-4114
Fax (907) 269-4604
Email: dec-wqreporting@alaska.gov

1.2 Duty to Comply

A permittee shall comply with all conditions of the permittee's APDES permit. Any permit noncompliance constitutes a violation of 33 U.S.C 1251-1387 (Clean Water Act) and state law and is grounds for enforcement action including termination, revocation and reissuance, or modification of a permit, or denial of a permit renewal application. A permittee shall comply with effluent standards or prohibitions established under 33 U.S.C. 1317(a) for toxic pollutants within the time provided in the regulations that establish those effluent standards or prohibitions even if the permit has not yet been modified to incorporate the requirement.

1.3 Duty to Reapply

If a permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain a new permit. In accordance with 18 AAC 83.105(b), a permittee with a currently effective permit shall reapply by submitting a new application at least 180 days before the existing permit expires, unless the Department has granted the permittee permission to submit an application on a later date. However, the Department will not grant permission for an application to be submitted after the expiration date of the existing permit.

1.4 Need to Halt or Reduce Activity Not a Defense

In an enforcement action, a permittee may not assert as a defense that compliance with the conditions of the permit would have made it necessary for the permittee to halt or reduce the permitted activity.

1.5 Duty to Mitigate

A permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

1.6 Proper Operation and Maintenance

1.6.1 A permittee shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances that the permittee installs or uses to achieve compliance with the conditions of the permit. The permittee's duty to operate and maintain properly includes using adequate laboratory controls and appropriate quality assurance procedures. However, a permittee is not required to operate back-up or auxiliary facilities or similar systems that a permittee installs unless operation of those facilities is necessary to achieve compliance with the conditions of the permit.

1.6.2 Operation and maintenance records shall be retained and made available at the site.

1.7 Permit Actions

A permit may be modified, revoked and reissued, or terminated for cause as provided in 18 AAC 83.130. If a permittee files a request to modify, revoke and reissue, or terminate a permit, or gives notice of planned changes or anticipated noncompliance, the filing or notice does not stay any permit condition.

1.8 Property Rights

A permit does not convey any property rights or exclusive privilege.

1.9 Duty to Provide Information

A permittee shall, within a reasonable time, provide to the Department any information that the Department requests to determine whether a permittee is in compliance with the permit, or whether cause exists to modify, revoke and reissue, or terminate the permit. A permittee

shall also provide to the Department, upon request, copies of any records the permittee is required to keep under the permit.

1.10 Inspection and Entry

A permittee shall allow the Department, or an authorized representative, including a contractor acting as a representative of the Department, at reasonable times and on presentation of credentials establishing authority and any other documents required by law, to:

- 1.10.1 Enter the premises where a permittee's regulated facility or activity is located or conducted, or where permit conditions require records to be kept;
- 1.10.2 Have access to and copy any records that permit conditions require the permittee to keep;
- 1.10.3 Inspect any facilities, equipment, including monitoring and control equipment, practices, or operations regulated or required under a permit; and
- 1.10.4 Sample or monitor any substances or parameters at any location for the purpose of assuring permit compliance or as otherwise authorized by 33 U.S.C. 1251-1387 (Clean Water Act).

1.11 Monitoring and Records

A permittee must comply with the following monitoring and recordkeeping conditions:

- 1.11.1 Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity.
- 1.11.2 The permittee shall retain records in Alaska of all monitoring information for at least three years, or longer at the Department's request at any time, from the date of the sample, measurement, report, or application. Monitoring records required to be kept include:
 - 1.11.2.1 All calibration and maintenance records,
 - 1.11.2.2 All original strip chart recordings or other forms of data approved by the Department for continuous monitoring instrumentation,
 - 1.11.2.3 All reports required by a permit,
 - 1.11.2.4 Records of all data used to complete the application for a permit,
 - 1.11.2.5 Field logbooks or visual monitoring logbooks,
 - 1.11.2.6 Quality assurance chain of custody forms,
 - 1.11.2.7 Copies of discharge monitoring reports, and
 - 1.11.2.8 A copy of this APDES permit.
- 1.11.3 Records of monitoring information must include:
 - 1.11.3.1 The date, exact place, and time of any sampling or measurement;

- 1.11.3.2 The name(s) of any individual(s) who performed the sampling or measurement(s);
- 1.11.3.3 The date(s) and time any analysis was performed;
- 1.11.3.4 The name(s) of any individual(s) who performed any analysis;
- 1.11.3.5 Any analytical technique or method used; and
- 1.11.3.6 The results of the analysis.

1.11.4 Monitoring Procedures

Analyses of pollutants must be conducted using test procedures approved under 40 CFR Part 136, adopted by reference at 18 AAC 83.010, for pollutants with approved test procedures, and using test procedures specified in the permit for pollutants without approved methods.

1.12 Signature Requirement and Penalties

- 1.12.1 Any application, report, or information submitted to the Department in compliance with a permit requirement must be signed and certified in accordance with 18 AAC 83.385. Any person who knowingly makes any false material statement, representation, or certification in any application, record, report, or other document filed or required to be maintained under a permit, or who knowingly falsifies, tampers with, or renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be subject to penalties under 33 U.S.C. 1319(c)(4), AS 12.55.035(c)(1)(B), (c)(2), and (c)(3) and AS 46.03.790(g).
- 1.12.2 In accordance with 18 AAC 83.385, an APDES permit application must be signed as follows:
 - 1.12.2.1 For a corporation, by a responsible corporate officer.
 - 1.12.2.2 For a partnership or sole proprietorship, by the general partner or the proprietor, respectively.
 - 1.12.2.3 For a municipality, state, federal, or other public agency, by either a principal executive officer or ranking elected official.
- 1.12.3 Any report required by an APDES permit, and a submittal with any other information requested by the Department, must be signed by a person described in Appendix A, Part 1.12.2, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - 1.12.3.1 The authorization is made in writing by a person described in Appendix A, Part 1.12.2;

- 1.12.3.2 The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, including the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility; or an individual or position having overall responsibility for environmental matters for the company; and
- 1.12.3.3 The written authorization is submitted to the Department to the Permitting Program address in Appendix A, Part 1.1.1.
- 1.12.4 If an authorization under Appendix A, Part 1.12.3 is no longer effective because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Appendix A, Part 1.12.3 must be submitted to the Department before or together with any report, information, or application to be signed by an authorized representative.
- 1.12.5 Any person signing a document under Appendix A, Part 1.12.2 or Part 1.12.3 shall certify as follows:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

1.13 Proprietary or Confidential Information

- 1.13.1 A permit applicant or permittee may assert a claim of confidentiality for proprietary or confidential business information by stamping the words "confidential business information" on each page of a submission containing proprietary or confidential business information. The Department will treat the stamped submissions as confidential if the information satisfies the test in 40 CFR §2.208, adopted by reference at 18 AAC 83.010, and is not otherwise required to be made public by state law.
- 1.13.2 A claim of confidentiality under Appendix A, Part 1.13.1 may not be asserted for the name and address of any permit applicant or permittee, a permit application, a permit, effluent data, sewage sludge data, and information required by APDES or NPDES application forms provided by the Department, whether submitted on the forms themselves or in any attachments used to supply information required by the forms.

1.13.3 A permittee's claim of confidentiality authorized under Appendix A, Part 1.13.1 is not waived if the Department provides the proprietary or confidential business information to the EPA or to other agencies participating in the permitting process. The Department will supply any information obtained or used in the administration of the state APDES program to the EPA upon request under 40 CFR §123.41, as revised as of July 1, 2005. When providing information submitted to the Department with a claim of confidentiality to the EPA, the Department will notify the EPA of the confidentiality claim. If the Department provides the EPA information that is not claimed to be confidential, the EPA may make the information available to the public without further notice.

1.14 Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any action or relieve a permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under state laws addressing oil and hazardous substances.

1.15 Cultural and Paleontological Resources

If cultural or paleontological resources are discovered because of this disposal activity, work that would disturb such resources is to be stopped, and the Office of History and Archaeology, a Division of Parks and Outdoor Recreation of the Alaska Department of Natural Resources (<http://www.dnr.state.ak.us/parks/oha/>), is to be notified immediately at (907) 269-8721.

1.16 Fee

A permittee must pay the appropriate permit fee described in 18 AAC 72.

1.17 Other Legal Obligations

This permit does not relieve the permittee from the duty to obtain any other necessary permits from the Department or from other local, state, or federal agencies and to comply with the requirements contained in any such permits. All activities conducted and all plan approvals implemented by the permittee pursuant to the terms of this permit shall comply with all applicable local, state, and federal laws and regulations.

2.0 Special Reporting Obligations

2.1 Planned Changes

2.1.1 The permittee shall give notice to the Department as soon as possible of any planned physical alteration or addition to the permitted facility if:

2.1.1.1 The alteration or addition may make the facility a "new source" under one or more of the criteria in 18 AAC 83.990(44); or

2.1.1.2 The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged if those pollutants are not subject to effluent limitations in the permit or to notification requirements under 18 AAC 83.610.

2.1.2 If the proposed changes are subject to plan review, then the plans must be submitted at least 30 days before implementation of changes (see 18 AAC 15.020 and 18 AAC 72 for plan review requirements). Written approval is not required for an emergency repair or routine maintenance.

2.1.3 Written notice must be sent to the Permitting Program address in Appendix A, Part 1.1.1.

2.2 Anticipated Noncompliance

2.2.1 A permittee shall give seven days' notice to the Department before commencing any planned change in the permitted facility or activity that may result in noncompliance with permit requirements.

2.2.2 Written notice must be sent to the Compliance and Enforcement Program address in Appendix A, Part 1.1.2.

2.3 Transfers

2.3.1 A permittee may not transfer a permit for a facility or activity to any person except after notice to the Department in accordance with 18 AAC 83.150. The Department may modify or revoke and reissue the permit to change the name of the permittee and incorporate such other requirements under 33 U.S.C. 1251-1387 (Clean Water Act) or state law.

2.3.2 Written notice must be sent to the Permitting Program address in Appendix A, Part 1.1.1.

2.4 Compliance Schedules

2.4.1 A permittee must submit progress or compliance reports on interim and final requirements in any compliance schedule of a permit no later than 14 days following the scheduled date of each requirement.

2.4.2 Written notice must be sent to the Compliance and Enforcement Program address in Appendix A, Part 1.1.2.

2.5 Corrective Information

2.5.1 If a permittee becomes aware that it failed to submit a relevant fact in a permit application or submitted incorrect information in a permit application or in any report to the Department, the permittee shall promptly submit the relevant fact or the correct information.

2.5.2 Information must be sent to the Permitting Program address in Appendix A, Part 1.1.1.

2.6 Bypass of Treatment Facilities

2.6.1 Prohibition of Bypass

Bypass is prohibited. The Department may take enforcement action against a permittee for any bypass, unless:

- 2.6.1.1 The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - 2.6.1.2 There were no feasible alternatives to the bypass, including use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. However, this condition is not satisfied if the permittee, in the exercise of reasonable engineering judgment, should have installed adequate back-up equipment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and
 - 2.6.1.3 The permittee provides notice to the Department of a bypass event in the manner, as appropriate, under Appendix A, Part 2.6.2.
- 2.6.2 Notice of bypass
- 2.6.2.1 For an anticipated bypass, the permittee submits notice at least 10 days before the date of the bypass. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the conditions of Appendix A, Parts 2.6.1.1 and 2.6.1.2.
 - 2.6.2.2 For an unanticipated bypass, the permittee submits 24-hour notice, as required in 18 AAC 83.410(f) and Appendix A, Part 3.4, Twenty-four Hour Reporting.
 - 2.6.2.3 Written notice must be sent to the Compliance and Enforcement Program address in Appendix A, Part 1.1.2.
- 2.6.3 Notwithstanding Appendix A, Part 2.6.1, a permittee may allow a bypass that:
- 2.6.3.1 Does not cause an effluent limitation to be exceeded, and
 - 2.6.3.2 Is for essential maintenance to assure efficient operation.

2.7 Upset Conditions

- 2.7.1 In any enforcement action for noncompliance with technology-based permit effluent limitations, a permittee may claim upset as an affirmative defense. A permittee seeking to establish the occurrence of an upset has the burden of proof to show that the requirements of Appendix A, Part 2.7.2 are met.
- 2.7.2 To establish the affirmative defense of upset, the permittee must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that:
 - 2.7.2.1 An upset occurred and the permittee can identify the cause or causes of the upset;
 - 2.7.2.2 The permitted facility was at the time being properly operated;

- 2.7.2.3 The permittee submitted 24-hour notice of the upset, as required in 18 AAC 83.410(f) and Appendix A, Part 3.4, Twenty-four Hour Reporting; and
- 2.7.2.4 The permittee complied with any mitigation measures required under 18 AAC 83.405(e) and Appendix A, Part 1.5, Duty to Mitigate.
- 2.7.3 Any determination made in administrative review of a claim that noncompliance was caused by upset, before an action for noncompliance is commenced, is not final administrative action subject to judicial review.

2.8 Existing Manufacturing, Commercial, Mining, and Silvicultural Discharges

- 2.8.1 In addition to the reporting requirements under 18 AAC 83.410, an existing manufacturing, commercial, mining, and silvicultural discharger shall notify the Department as soon as that discharger knows or has reason to believe that any activity has occurred or will occur that would result in:
 - 2.8.1.1 The discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
 - 2.8.1.1.1 *One hundred micrograms per liter (100 µg/L);*
 - 2.8.1.1.2 *Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile, 500 micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol, and one milligram per liter (1 mg/L) for antimony;*
 - 2.8.1.1.3 *Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 18 AAC 83.310(c)-(g); or*
 - 2.8.1.1.4 *The level established by the Department in accordance with 18 AAC 83.445.*
 - 2.8.1.2 Any discharge, on a non-routine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
 - 2.8.1.2.1 *Five hundred micrograms per liter (500 µg/L);*
 - 2.8.1.2.2 *One milligram per liter (1 mg/L) for antimony;*
 - 2.8.1.2.3 *Ten times the maximum concentration value reported for that pollutant in the permit application in accordance with 18 AAC 83.310(c)-(g); or*
 - 2.8.1.2.4 *The level established by the Department in accordance with 18 AAC 83.445.*

3.0 Monitoring, Recording, and Reporting Requirements

3.1 Representative Sampling

A permittee must collect effluent samples from the effluent stream after the last treatment unit before discharge into the receiving waters. Samples and measurements must be representative of the volume and nature of the monitored activity or discharge.

3.2 Reporting of Monitoring Results

At intervals specified in the permit, monitoring results must be reported on the EPA discharge monitoring report (DMR) form, as revised as of March 1999, adopted by reference.

- 3.2.1 Monitoring results shall be summarized each month on the DMR or an approved equivalent report. The permittee must submit reports monthly postmarked by the 15th day of the following month.
- 3.2.2 The permittee must sign and certify all DMRs and all other reports in accordance with the requirements of Appendix A, Part 1.12, Signatory Requirements and Penalties. All signed and certified legible original DMRs and all other documents and reports must be submitted to the Department at the Compliance and Enforcement Program address in Appendix A, Part 1.1.2.
- 3.2.3 If, during the period when this permit is effective, the Department makes available electronic reporting, the permittee may, as an alternative to the requirements of Appendix A, Part 3.2.2, submit monthly DMRs electronically by the 15th day of the following month in accordance with guidance provided by the Department. The permittee must certify all DMRs and other reports, in accordance with the requirements of Appendix A, Part 1.12, Signatory Requirements and Penalties. The permittee must retain the legible originals of these documents and make them available to the Department upon request.

3.3 Additional Monitoring by Permittee

If the permittee monitors any pollutant more frequently than the permit requires using test procedures approved in 40 CFR Part 136, adopted by reference at 18 AAC 83.010, or as specified in this permit, the results of that additional monitoring must be included in the calculation and reporting of the data submitted in the DMR required by Appendix A, Part 3.2. **Error! Reference source not found.** All limitations that require averaging of measurements must be calculated using an arithmetic means unless the Department specifies another method in the permit. Upon request by the Department, the permittee must submit the results of any other sampling and monitoring regardless of the test method used.

3.4 Twenty-four Hour Reporting

A permittee shall report any noncompliance event that may endanger health or the environment as follows:

- 3.4.1 A report must be made:
 - 3.4.1.1 Orally within 24 hours after the permittee becomes aware of the circumstances, and

- 3.4.1.2 In writing within five days after the permittee becomes aware of the circumstances.
- 3.4.2 A report must include the following information:
 - 3.4.2.1 A description of the noncompliance and its causes, including the estimated volume or weight and specific details of the noncompliance;
 - 3.4.2.2 The period of noncompliance, including exact dates and times;
 - 3.4.2.3 If the noncompliance has not been corrected, a statement regarding the anticipated time the noncompliance is expected to continue; and
 - 3.4.2.4 Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
- 3.4.3 An event that must be reported within 24 hours includes:
 - 3.4.3.1 An unanticipated bypass that exceeds any effluent limitation in the permit (see Appendix A, Part 2.6, Bypass of Treatment Facilities).
 - 3.4.3.2 An upset that exceeds any effluent limitation in the permit (see Appendix A, Part 2.7, Upset Conditions).
 - 3.4.3.3 A violation of a maximum daily discharge limitation for any of the pollutants listed in the permit as requiring 24-hour reporting.
- 3.4.4 The Department may waive the written report on a case-by-case basis for reports under Appendix A, Part 3.4 if the oral report has been received within 24 hours of the permittee becoming aware of the noncompliance event.
- 3.4.5 The permittee may satisfy the written reporting submission requirements of Appendix A, Part 3.4 by submitting the written report via e-mail, if the following conditions are met:
 - 3.4.5.1 The Noncompliance Notification Form or equivalent form is used to report the noncompliance;
 - 3.4.5.2 The written report includes all the information required under Appendix A, Part 3.4.2;
 - 3.4.5.3 The written report is properly certified and signed in accordance with Appendix A, Parts 1.12.3 and 1.12.5.;
 - 3.4.5.4 The written report is scanned as a PDF (portable document format) document and transmitted to the Department as an attachment to the e-mail; and
 - 3.4.5.5 The permittee retains in the facility file the original signed and certified written report and a printed copy of the conveying email.

- 3.4.6 The e-mail and PDF written report will satisfy the written report submission requirements of this permit provided the e-mail is received by the Department within five days after the time the permittee becomes aware of the noncompliance event and the e-mail and written report satisfy the criteria of Part 3.4.5. The e-mail address to report noncompliance is:
dec-wqreporting@alaska.gov

3.5 Other Noncompliance Reporting

A permittee shall report all instances of noncompliance not required to be reported under Appendix A, Parts 2.4 (Compliance Schedules), 3.3 (Additional Monitoring by Permittee), and 3.4 (Twenty-four Hour Reporting) at the time the permittee submits monitoring reports under Appendix A, Part 3.2 **Error! Reference source not found.** (Reporting of Monitoring Results). A report of noncompliance under this part must contain the information listed in Appendix A, Part 3.4.2 and be sent to the Compliance and Enforcement Program address in Appendix A, Part 1.1.2.

4.0 Penalties for Violations of Permit Conditions

Alaska laws allow the State to pursue both civil and criminal actions concurrently. The following is a summary of Alaska law. Permittees should read the applicable statutes for further substantive and procedural details.

4.1 Civil Action

Under AS 46.03.760(e), a person who violates or causes or permits to be violated a regulation, a lawful order of the Department, or a permit, approval, or acceptance, or term or condition of a permit, approval or acceptance issued under the program authorized by AS 46.03.020 (12) is liable, in a civil action, to the State for a sum to be assessed by the court of not less than \$500 nor more than \$100,000 for the initial violation, nor more than \$10,000 for each day after that on which the violation continues, and that shall reflect, when applicable:

- 4.1.1 Reasonable compensation in the nature of liquated damages for any adverse environmental effects caused by the violation, that shall be determined by the court according to the toxicity, degradability, and dispersal characteristics of the substance discharged, the sensitivity of the receiving environment, and the degree to which the discharge degrades existing environmental quality;
- 4.1.2 Reasonable costs incurred by the State in detection, investigation, and attempted correction of the violation;
- 4.1.3 The economic savings realized by the person in not complying with the requirements for which a violation is charged; and
- 4.1.4 The need for an enhanced civil penalty to deter future noncompliance.

4.2 Injunctive Relief

- 4.2.1 Under AS 46.03.820, the Department can order an activity presenting an imminent or present danger to public health or that would be likely to result in irreversible damage to the environment be discontinued. Upon receipt of such an order, the activity must be immediately discontinued.

- 4.2.2 Under AS 46.03.765, the Department can bring an action in Alaska Superior Court seeking to enjoin ongoing or threatened violations for Department-issued permits and Department statutes and regulations.

4.3 Criminal Action

Under AS 46.03.790(h), a person is guilty of a Class A misdemeanor if the person negligently:

- 4.3.1 Violates a regulation adopted by the Department under AS 46.03.020(12);
- 4.3.2 Violates a permit issued under the program authorized by AS 46.03.020(12);
- 4.3.3 Fails to provide information or provides false information required by a regulation adopted under AS 46.03.020(12);
- 4.3.4 Makes a false statement, representation, or certification in an application, notice, record, report, permit, or other document filed, maintained, or used for purposes of compliance with a permit issued under or a regulation adopted under AS 46.03.020(12); or
- 4.3.5 Renders inaccurate a monitoring device or method required to be maintained by a permit issued or under a regulation adopted under AS 46.03.020(12).

4.4 Other Fines

Upon conviction of a violation of a regulation adopted under AS 46.03.020(12), a defendant who is not an organization may be sentenced to pay a fine of not more than \$10,000 for each separate violation (AS 46.03.790(g)). A defendant that is an organization may be sentenced to pay a fine not exceeding the greater of: (1) \$200,00; (2) three times the pecuniary gain realized by the defendant as a result of the offense; or (3) three times the pecuniary damage or loss caused by the defendant to another, or the property of another, as a result of the offense (AS 12.55.035(c)(B), (c)(2), and (c)(3)).