



# Fact Sheet

NPDES Permit Number: AK-005338-4  
Public Notice Start Date: February 2, 2004  
Public Notice End Date: March 8, 2004  
Technical Contact: Robert Rau (206) 553-6285

## **The U.S. Environmental Protection Agency (EPA) Plans To Issue A Wastewater Discharge Permit To:**

Ketchikan Gateway Borough  
Department of Public Works  
344 Front Street  
Ketchikan, Alaska 99901

### **EPA Proposes NPDES Permit Issuance.**

EPA proposes to issue a National Pollutant Discharge Elimination System (NPDES) permit to the Ketchikan Gateway Borough (the Applicant) to establish conditions for the discharge of pollutants from the Ketchikan Gateway Borough Ward Cove Wastewater Treatment Plant (WWTP) to Ward Cove, near Ketchikan, Alaska. Discharges from the facility are currently covered by NPDES Permit No. AK-000092-2, which also establishes conditions for storm water discharges from adjacent grounds - the site of the former Ketchikan Pulp Company (KPC) sawmill and pulp manufacturing facility, and for discharges from the nearby KPC landfill site. 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 and places other conditions on the facility.

This Fact Sheet includes:

- information on public comment, public hearing, and appeal procedures
- a description of the facility and proposed discharges
- a map and description of the discharge location
- a listing of proposed effluent limitations and other conditions

- technical material supporting the conditions in the permit

### **Alaska State Certification**

EPA requires that the Alaska Department of Environmental Conservation (ADEC) certify the NPDES permit for the Ketchikan Gateway Borough under Section 401 of the Clean Water Act (CWA). EPA may not issue the NPDES permit until the State has granted, denied, or waived certification.

### **EPA Invites Public Comment**

EPA will consider all comments before issuing a final NPDES permit. Those wishing to comment on the proposed permit may do so in writing by the end of the public comment period. Written comments should include name, address, phone number, a concise statement or comment, and any relevant factual basis for the statement or comment. Written comments should be addressed to the Director, Office of Water, U.S. EPA Region 10, 1200 Sixth Avenue, OW-130, Seattle, WA 98101 and can be submitted by fax to 206-553-0165 or by e-mail to [washington.audrey@epa.gov](mailto:washington.audrey@epa.gov).

Persons wishing to request that a public hearing be held may do so in writing by the end date of the public comment period. A request for a public hearing must state the nature of the issue to be raised, reference the facility name and NPDES permit number, and include the name, address, and telephone number of the person(s) making the request.

After the Public Notice period expires and public comments have been considered, the Director of EPA Region 10's Office of Water will make a final decision regarding permit issuance. If no substantive comments are received, the tentative conditions in the proposed permit will become final, and the permit will become effective upon issuance. If significant comments are received, EPA will respond to the comments and issue the permit along with a response to comments. In these circumstances, the permit will become effective 33 days after its issuance date, unless the permit is appealed to the Environmental Appeals Board within 33 days.

Persons wishing to comment on State Certification should submit written comments before the public notice expiration date to: Shawn Stokes, Alaska Department of Environmental quality, 410 Willoughby Ave, Suite 303, Juneau, Alaska 99801, [shawn\\_stokes@dec.state.ak.us](mailto:shawn_stokes@dec.state.ak.us)

### **Documents Are Available for Review.**

The proposed NPDES permit and related documents can be reviewed at EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday. To request copies and other information, contact the NPDES Permits Unit at:

United States Environmental Protection Agency, Region 10  
1200 Sixth Avenue, OW-130  
Seattle, Washington 98101  
206-553-1214 or  
1-800-424-4372 (from Alaska, Idaho, Oregon and Washington)

The Fact Sheet and proposed permit are also available at:

EPA Alaska Operations Office  
Federal Building, Room 537  
222 West 7<sup>th</sup> Avenue, #19  
Anchorage, Alaska 99513-7588

EPA Alaska Operations Office  
222 W. 7<sup>th</sup> Avenue, #19  
Juneau, Alaska 99801-1795

Alaska Department of Environmental Conservation  
540 Water Street, Suite 203  
Ketchikan, Alaska 99901

Ketchikan Public Library  
629 Dock Street  
Ketchikan, Alaska 99901

The draft permit and Fact Sheet can also be found by visiting the EPA Region 10 website at [www.epa.gov/r10earth/offices/water/npdes.htm](http://www.epa.gov/r10earth/offices/water/npdes.htm). Additional services can be made available to persons with disabilities by contacting EPA at one of the above addresses. Those with impaired hearing or speech can contact EPA's telecommunications device for the deaf (TDD) at 206-553-1598.

## TABLE OF CONTENTS

<b>1</b>	<b>APPLICANT</b>	<b>6</b>
<b>2</b>	<b>TYPE OF FACILITY AND ACTIVITY</b>	<b>6</b>
2.1	Facility Location and Description	6
2.2	Process Description	7
2.3	Facility History and Performance	7
<b>3</b>	<b>RECEIVING WATER</b>	<b>8</b>
3.1	Background	8
3.2	Water Quality Standards and Criteria	9
<b>4.</b>	<b>PROPOSED DISCHARGE</b>	<b>10</b>
<b>5</b>	<b>PERMIT REQUIREMENTS</b>	<b>10</b>
5.1	Applicable Laws and Regulations	10
5.2	Proposed Effluent Limitations	11
5.3	Effluent Monitoring Requirements	11
5.4	Sewage Sludge/Biosolids Management	12
5.5	Best Management Practices	13
5.6	Quality Assurance Plan	13
5.7	Additional Permit Provisions	13
5.8	Permit Expiration	14
<b>6</b>	<b>OTHER LEGAL REQUIREMENTS</b>	<b>15</b>
6.1	State Water Quality Standards and Certification	15
6.2	Endangered Species Act	15
6.3	Fishery Conservation and Management Act	15
6.4	Coastal Zone Management Act	15
6.5	Pollution Prevention Act	15

6.6	Oil Spill Requirements	15
<b>7</b>	<b>REFERENCES</b>	<b>16</b>
	<b>APPENDIX A – LOCATION MAP</b>	<b>17</b>
	<b>APPENDIX B – SITE DRAWING</b>	<b>18</b>
	<b>APPENDIX C – BASIS FOR EFFLUENT LIMITATIONS</b>	<b>19</b>
	Statutory and Regulatory Basis For Limits	19
	Technology-Based Evaluation	19
	Water Quality-Based Evaluation	19
	Water Quality Criteria	20
	Reasonable Potential Evaluation	20
	Wasteload Allocations	20
	Permit Limits	20
	Basis for Effluent Limits and Monitoring Requirements for Specific Pollutants	20
	BOD <sub>5</sub>	21
	TSS	21
	pH	22
	Fecal Coliform Bacteria	22
	Flow	22
	Chlorine Residual	22
	Metals	22
	Residues	22
	Anti-Degradation	23

## **1 APPLICANT**

Ketchikan Gateway Borough  
344 Front Street  
Ketchikan, Alaska 99901

Facility Name: Ketchikan Gateway Borough Ward Cove Sanitary Wastewater Treatment Plant

Facility Location: 7559 North Tongass Highway, Ketchikan, AK

Facility Contact: Steve Corporon

Contact Phone Number: 907-247-5541

NPDES Permit Number: AK-005338-4

Facility Mailing Address: 334 Front Street, Ketchikan, AK 99901

The Applicant has requested the issuance of an NPDES permit for its Ward Cove WWTP located at 7559 North Tongass Highway in Ketchikan. Discharges from the WWTP are currently covered by NPDES Permit No. AK-000092-2, which is issued in the name of Gateway Forest Products and also regulates storm water discharges originating onsite and discharges of storm water and treated leachate from the nearby Ketchikan Pulp Company (KPC) Ward Cove Landfill. Being the owner and responsible for maintaining the WWTP, the Applicant requests that discharges from its facility become separately permitted under the NPDES program, from other discharges currently covered by Permit No. AK-000092-2.

The NPDES Permit No. AK-000092-2 issued under the name of Gateway Forest Products will be inactivated and replaced by two new NPDES permit numbers. The two permits will be for two separately owned facilities, Ketchikan Gateway Borough Ward Cove Sanitary Wastewater Treatment Plant under permit number AK0053384 and Ketchikan Pulp Company Ward Cove Landfill under permit number AK0053392.

## **2 TYPE OF FACILITY AND ACTIVITY**

### **2.1 Facility Location and Description**

In 2002, the Applicant became owner and responsible for operation of the Ward Cove WWTP, which is located northwest of Ketchikan, as shown by the location map in Appendix A of this Fact Sheet. The facility was originally built to treat sanitary wastewater generated by the former KPC sawmill and pulp manufacturing facility. The WWTP and the grounds of the former KPC manufacturing facility, including current outfall locations, are depicted by the drawing in Appendix B.

## 2.2 Process Description

The WWTP was constructed to provide secondary treatment for a design flow of 25,000 gallons per day (gpd) using an extended aeration/activated sludge system. Treatment includes screening, aeration, settling, and chlorination.

Under the current NPDES permit (No. AK-000092-2), treated sanitary wastewater is combined with water diverted from Lake Connell, storm water from former processing and storage areas and from maintenance and construction activity, and treated leachate from the adjacent landfill. These combined flows are discharged through Outfall 001 under the current NPDES permit, which also regulates discharges from several storm water outfalls from both the landfill and former manufacturing areas. The discharge of process wastewaters is prohibited under the current NPDES permit.

By a separate application, the Ketchikan Pulp Company is seeking coverage under an individual NPDES permit for all wastewater and storm water discharges that originate on the KPC landfill site and that are now covered by Permit No. AK-000092-2. The Ketchikan Gateway Borough also states that it is seeking separate coverage under the Storm Water Multi-Sector Permit for Industrial Activities (MSGP-2000), issued by EPA Region 10 for facilities in Alaska on April 16, 2001, for all discharges of storm water that originate on the site of the former KPC manufacturing facility. Therefore, the proposed NPDES permit will cover only discharges from the sanitary wastewater treatment facility, Lake Connell water that is diverted, and filtrate and spray water from a sludge processing facility planned for construction near the WWTP.

When the KPC manufacturing facility was operating, generation of electricity required approximately 15 million gallons per day (mgd) of cooling water from Lake Connell. To prevent deterioration of the wood-stave cooling water pipeline, after the generating plant was shut down, approximately 2 mgd of Lake Connell water continue to be diverted and discharged through Outfall 001.

When the Borough completes construction of a sludge processing facility on the grounds of the former KPC manufacturing facility, it will process sludge from the WWTP and septage collected from septic tanks throughout the Borough to produce approximately 250 tons of compost per year. Wastewater from dewatering and wash down operations will be collected in a holding tank at the composting facility and will be intermittently pumped to the WWTP. In its NPDES Permit Application of June 12, 2003, the Applicant provides the following projections of discharge flow through Outfall 001, which is the only outfall addressed by the proposed permit.

Treated Domestic Wastewater	4,000 gpd
Treated Sludge Wastewater	10,000 gpd
Lake Connell Water	2,000,000 gpd

## 2.3 Facility History and Performance

The current NPDES permit (AK-000092-2) became effective on December 15, 1998, and was transferred to Gateway Forest Products in 1999, and has been administratively extended since its expiration date of December 15, 2003. This permit authorizes discharges from Outfall 001 (combined wastewaters from the KPC landfill and from the Gateway Forests Products mill) and

from 10 storm water outfalls, including 6 that discharge runoff from the industrial site. Authorized outfalls in Permit No. AK-000092-2, which discharge wastewater from the industrial facility (but not the landfill site), are described as follows.

<b>Outfall</b>	<b>Receiving Water</b>	<b>Latitude</b>	<b>Longitude</b>
001	Ward Cove	55° 24' 15" N	131° 43' 45" W
SW-2	Ward Cove	55° 24' 15" N	131° 43' 45" W
SW-4	Ward Cove	55° 24' 15" N	131° 43' 45" W
SW-5	Ward Cove	55° 24' 15" N	131° 43' 45" W
SW-6	Ward Cove	55° 24' 15" N	131° 43' 45" W
SW-7	Ward Cove	55° 24' 15" N	131° 43' 45" W
SW-8	Ward Cove	55° 24' 15" N	131° 43' 45" W

In the current NPDES permit, effluent limitations for Outfall 001 were established with a mixing zone authorized by ADEC in June 1998. The mixing zone has a radius of approximately 15 feet around the point of discharge and extends the full depth of the water column but does not include the sediments. The mixing zone provides dilution of 19 to 1.

The current discharge permit includes numeric limitations for Outfall 001 for chlorine residual, color, whole effluent toxicity, manganese, and minimum and maximum flows. It also includes numeric limitations on BOD<sub>5</sub>, TSS, and fecal coliform bacteria for discharges of sanitary wastewater and pH limitations for storm water discharges. For Outfall 001, the permit requires monthly monitoring of chlorine residual, color, manganese, turbidity, BOD<sub>5</sub>, oil and grease, and pH, and quarterly monitoring for cadmium. Monitoring of storm water is generally required 3 or 4 times per year and includes color, BOD<sub>5</sub>, COD, TSS, hydrocarbons, dioxin, and several metals.

### **3 RECEIVING WATER**

#### **3.1 Background**

The Applicant proposes to discharge from the WWTP to Ward Cove (the Cove), which is located on the north side of Tongass Narrows, about 0.5 miles northwest of Ketchikan. The Cove is approximately 0.3 miles wide at its entrance, 0.5 miles wide at its widest point, and approximately 1 mile in length. The Cove is classified as marine water by ADEC, protected for use classes (2) (A, B, C, and D) in accordance with 18 AAC 70.050. These use classes include (A) water supply (aquaculture, seafood processing, and industrial), (B) water recreation (contact and secondary), (C) growth and propagation of fish, shellfish, other aquatic life, and wildlife, and (D) harvesting for consumption of raw mollusks or other raw aquatic life.

In its 1994 303(d) list for impaired waters, the State included Ward Cove as impaired for sediment, dissolved oxygen, color, and toxic substances. Historical discharges of pulp residues, logs, bark, and woody debris from pulp mill operations have contributed color and residues to the Cove and caused depletion of dissolved oxygen and formation of toxic byproducts of decomposition. Since the pulp mill wastewater discharges ceased in 1997, color was removed from the listing.



A total maximum daily load (TMDL) for five-day biological oxygen demand (BOD<sub>5</sub>) for the Cove was issued on May 27, 1994. The TMDL determined a loading capacity of 20,000 lbs/day BOD<sub>5</sub> for the surface layer of the Cove and a minimum dissolved oxygen requirement of 5 mg/L for discharges from the KPC facility, which was identified as the single significant source of discharges causing impairment of the Cove for dissolved oxygen. The TMDL allocated 80 percent of the total BOD<sub>5</sub> loading (16,000 lbs/day) to the KPC facility, 10 percent to non-point sources, and 10 percent as a margin of safety. The BOD<sub>5</sub> allocation and dissolved oxygen limitation for the KPC facility were established for the summer months of June through October, when reduced dissolved oxygen concentrations in the Cove had primarily been documented. A new TMDL, being prepared to further address depressed dissolved oxygen levels in the Cove, may place additional restrictions on discharges of BOD<sub>5</sub> to the Cove.

### 3.2 Water Quality Standards and Criteria

Applicable water quality standards for marine water uses and water quality criteria for toxics are contained, respectively, in the Alaska Administrative Code at 18 AAC 70 and in the *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances* (2003). The most stringent water quality standards relevant to the Applicant from 18 AAC 70 are summarized in Table 3-1, below.

**Table 3-1, Summary of Applicable Water Quality Criteria**

Pollutant	Standard for the Receiving Water
Color	Color cannot exceed 15 color units or the natural condition, whichever is greater. (For secondary recreation uses, surface waters must be free of substances that produce objectionable color.
Fecal Coliform Bacteria	In a 30-day period, the geometric mean of samples may not exceed 20 FC/100 mL, and not more than 10 percent of the samples may exceed 40 FC/100 mL.
Dissolved Gas	Surface dissolved oxygen (to a depth of 1 meter) may not be less than 6.0 mg/L, unless such depressed oxygen levels occur naturally, or less than 4.0 mg/L at any point below the surface. In tidal tributaries, D.O. may not be less than 5.0 mg/L, unless such depressed oxygen levels occur naturally.
Petroleum Hydrocarbons, Oils and Grease	May not cause a film, sheen, or discoloration on the surface or floor of the waterbody or adjoining shorelines. Surface waters must be virtually free of floating oils. Total aqueous hydrocarbons (TAqH) in the water column may not exceed 15 µg/L; and total aromatic hydrocarbons (TAH) may not exceed 10 µg/L.
pH	May not be less than 6.5 or greater than 8.5 s.u. and may not vary more than 0.2 pH units outside of the naturally occurring range.
Residues	May not, alone or in combination with other substances or wastes, make the water unsafe or unfit for the use, or cause acute or chronic problem levels, as determined by bioassay or other appropriate methods. May not, alone or in combination with other substances or wastes, cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.
Sediment	Below normally detectable amounts.
Turbidity	May not exceed 25 NTUs.

Pollutant	Standard for the Receiving Water
Toxics	The concentrations of toxics may not exceed the criteria in Table IV (Aquatic Life Criteria for Marine Waters) and Column B of Table V (Human Health Criteria for Consumption of Aquatic Organisms, Non-Carcinogens) of the <i>Alaska Water Quality Criteria Manual</i> . There may be no concentrations of toxics in water or in shoreline or bottom sediments that, singly, or in combination, cause or reasonably can be expected to cause, adverse effects on aquatic life.

#### 4. PROPOSED DISCHARGE

In its NPDES permit application the Applicant provided the following profile of WWTP effluent taken from DMRs for February 2002 through February 2003.

**Table 4-1, Sanitary Wastewater Characteristics**

Parameter	Number of Samples	Maximum Daily Concentration	Average Daily Concentration
Flow	flow is not monitored		
BOD <sub>5</sub>	10	18.4 mg/L	3.6 mg/L
TSS	12	38 mg/L	26 mg/L
Fecal Coliform	12	9 colonies/100 mL	1.5 colonies/100 mL
pH	pH is not monitored		

Effluent flow from the WWTP is not metered; however, the Applicant estimates this flow at 4,000 gpd based on a figure of 35 gpd per person, with approximately 115 people working in the shops and offices of the industrial site.

Wastewater from the composting facility will be pumped to the WWTP on an intermittent basis; however, the Applicant projects a maximum flow of 10,000 gpd from this source, when flow is expressed on a daily basis, and states that its pollutant characteristics will be similar to those of domestic wastewater.

Effluent from the WWTP will be combined with water diverted from Lake Connell and discharged through the existing Outfall 001. In its Individual Permit Application for Domestic Wastewater Discharged to Marine Water, submitted to ADEC on October 25, 2002, the Applicant describes the discharge line as extending 100 feet from the shoreline (measured at MLLW), with a diffuser placed perpendicular to the shoreline at a depth of 25 feet MLLW. A mixing zone has not been requested for the proposed discharge through Outfall 001.

#### 5 PERMIT REQUIREMENTS

##### 5.1 Applicable Laws and Regulations

In general, the CWA requires effluent limits for a particular pollutant that are the more stringent of either technology or water quality-based limits. A technology-based effluent limit requires a minimum level of treatment for point sources based on currently available treatment technologies. A water quality-based effluent limit is developed to ensure that applicable water quality standards for receiving waters are met. The derivation of technology and water quality-

based effluent limits of the proposed permit is described in greater detail in Appendix C of this Fact Sheet. The draft permit includes technology-based limits for BOD<sub>5</sub>, TSS, pH and chlorine residual, and water-quality based limits for fecal coliform bacteria.

## 5.2 Proposed Effluent Limitations

Limitations of the draft permit are summarized in Table 5-1, below.

**Table 5-1. Proposed Effluent Limitations**

Parameter	Outfall	Concentration Based Limits			Mass Based Limits Removal		
		Monthly Avg	Weekly Avg	Daily Max	Monthly Avg	Weekly Avg	Daily Max
Flow	-	-	-		-	-	-
Max	001a	-	-			-	0.025 MGD
Min	001	-	-			-	2.0 MGD
BOD	001a	30 mg/L	45 mg/L	60 mg/L	6.3 lbs/day	9.4 lbs/day	12.6 lbs/day
TSS	001a	30 mg/L	45 mg/L	60 mg/L	6.3 lbs/day	9.4 lbs/day	12.6 lbs/day
Fecal Coliform	001	14/100mL	-	43/100mL			
Fecal Coliform	001a	200 FC/100mL	400 FC/100mL	800 FC/100mL	-	-	-
Chlorine	001	-	-	0.0075 mg/L			
Chlorine	001a	0.5 mg/L	0.75 mg/L	1.0 mg/L	0.1 lbs/day	0.16 lbs/day	0.21 lbs/day

The draft permit includes: a minimum dissolved oxygen concentration of 5.0 mg/L and maximum of 17.0 mg/L at Outfall 001 and minimum of 2.0 mg/l for Outfall 001a; pH range of 6.0 to 9.0 standard units (s.u.) at outfall 001a; as well as, a requirement to remove at least 85% of BOD<sub>5</sub> and TSS from the influent water. The draft permit has a prohibition on the discharge of residues that will, alone or in combination with other substances or waste, make the water unsafe or unfit for use; or cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; or cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines. The permit also includes prohibitions on the discharge of storm water from the grounds of the former KPC manufacturing site through Outfall 001 and on the discharge of any wastewaters through Outfall 001, including process wastewaters, which are not specifically described by and authorized for discharge by the permit.

## 5.3 Effluent Monitoring Requirements

In accordance with Section 308 of the CWA and EPA regulations at 40 CFR 122.44(i), monitoring requirements are included in an NPDES permit to determine compliance with effluent limitations, to gather data for future effluent limitations, and/or to monitor impacts on the receiving water. The Applicant will be responsible for meeting the monitoring requirements presented in Table 5-2 and for reporting the results to EPA and ADEC. Proposed monitoring frequencies and sample types are based on the Agency's determination of the minimum sampling frequency required to adequately monitor facility performance and on the Agency's determination of the potential for effluent variability. These determinations take into consideration several factors, including the type of pollutants of concern and the type of treatment system.

The draft permit includes the following monitoring requirements.

**Table 5-2. Monitoring Requirements**

Parameter	Sample Location	Sample Frequency	Sample Type
Avg and Max Daily Flow	001a and 001	continuous	metered
BOD <sub>5</sub>	WWTP Influent and 001a	monthly	24-hr composite
BOD <sub>5</sub>	001	quarterly	24-hr composite
TSS	WWTP Influent and 001a	monthly	24-hr composite
pH	001a/001	3/week	grab
Fecal Coliform	001a/001	monthly/2/yr	grab
Dissolved Oxygen	001a/001	monthly/2/yr	grab
Chlorine Residual	001a/001	3/week	grab
Toxic Metals	001	1X / permit cycle	24-hr composite

The proposed permit recognizes one approved outfall (001) for discharges to Ward Cove; however, the EPA, at 40 CFR 122.45(h), allows effluent limitations to be imposed on internal waste streams, when they would be impractical or infeasible at the ultimate point of discharge. Here, permit limitations for BOD<sub>5</sub>, TSS, and pH reflect levels of treatment performance required of secondary treatment plants by the EPA at 40 CFR 133; and due to the dilution effect of Lake Connell water, it would be infeasible to measure compliance with these standards at Outfall 001. Therefore monitoring of WWTP effluent for these parameters is required; and an internal outfall, designated 001a, where WWTP effluent can be monitored before its dilution with flow from Lake Connell, is established by the draft permit. WWTP influent samples will also be analyzed concurrently with effluent samples for BOD<sub>5</sub> and TSS to determine removal efficiencies and compliance with the 85 percent removal standard.

Based on information provided by the Applicant that there will be no industrial, commercial, or storm water contributions to the WWTP influent and to the discharge through Outfall 001, EPA is requiring testing for toxic metals only one time in the permit life cycle at Outfall 001 to provide assurance that these constituents are not present at significant levels in the discharge. Because the WWTP will be receiving wastes (septage) from off-site and from shop areas of the industrial facility, there is some uncertainty regarding the nature of influent characteristics, and this basic testing for toxic metals is warranted.

#### 5.4 Sewage Sludge/Biosolids Management

EPA standards for the use or disposal of sewage sludge, presented at 40 CFR Part 503, are directly enforceable; i.e., these regulations are effective even when they are not included in an NPDES permit. These standards are applicable to any person who prepares sewage sludge, applies sewage sludge to the land, or fires sewage sludge in an incinerator, and to owners and operators of surface disposal sites. They are expressly applicable to any person who derives a material from sewage sludge [40 CFR 503.9(r)], such as compost. The standards are presented as general requirements, pollutant limits, management practices, and operational standards.

Although 40 CFR 503 is self-implementing, the CWA requires inclusion of sludge use or disposal requirements in an NPDES permit issued to a treatment works treating domestic sewage. In addition, NPDES permitting regulations at 40 CFR Parts 122 and 124 provide significant authority for the inclusion of standards for the use and disposal of sewage sludge in NPDES permits. In the future, EPA Region 10 will be issuing a general NPDES general permit that deals only with the use and disposal of biosolids. Facilities that generate sewage sludge, including the Borough's WWTP, will require coverage under this general permit. In the meantime, the draft permit requires compliance with the provisions of 40 CFR Part 503.

At present, the Applicant reports that approximately 54 dry metric tons of sludge per year are produced by the WWTP. This material has been trucked to a landfill belonging to the City of Ketchikan; however, the Applicant states that the City will no longer accept sewage sludge. A sludge composting facility to serve the WWTP is planned for construction in 2003.

### **5.5 Best Management Practices**

As authorized by Section 304 (e) of the Clean Water Act, EPA regulations at 40 CFR 12.44 (k) require best management practices (BMPs) in NPDES permits to control or abate the discharge of pollutants whenever necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. For many facilities, these measures are included in an operation & maintenance manual. BMPs are important tools for waste minimization and pollution prevention, and EPA encourages facilities to incorporate BMPs into their O&M plans and to revise them as new practices are developed.

In accordance with EPA regulations at 40 CFR 122.44(k), the proposed permit requires the Applicant to develop and implement a BMP plan within 90 days of permit issuance. The Applicant must develop a flow diagram of its process, treatment and discharge lines and quantify the input and output wastewater streams and pollutants. The Applicant must consider optimizing chemical use, staff training aimed at controlling the discharge of pollutants to the receiving waters, spill prevention and control, and sludge handling and disposal. From this assessment, the Applicant must create a working document known as a BMP plan in accordance with provisions of its NPDES permit.

The BMP Plan must be amended whenever there is a change in the facility or its operation, which materially increases the potential for discharges of pollutants. The BMP Plan will become an enforceable condition of the permit.

### **5.6 Quality Assurance Plan**

To properly operate and maintain the facility in accordance with EPA requirements at 40 CFR 122.41(e), the permit requires the Applicant to develop and implement a Quality Assurance Plan. The purpose of the Quality Assurance Plan is to establish appropriate sampling, sample handling, and analytical procedures for all water quality samples. This plan may be contained in an overall project monitoring plan.

### **5.7 Additional Permit Provisions**

Section IV of the draft permit contains standard regulatory language that is required to be in all NPDES permits. These permit provisions are based largely upon 40 CFR Part 122, Subpart C and include requirements pertaining to monitoring, recording, reporting, and compliance responsibilities.

- Duty to Comply from 40 CFR 122.41(a)
- Proper Operation and Maintenance from 40 CFR 122.41(e)
- Duty to Mitigate from 40 CFR 122.41(d)
- Toxic Pollutants from 40 CFR 122.41(a)(1-2), 122.44(b, e), and 125.3
- Removed Substances from 40 CFR § 122.41(a)(1) and (o) and CWA 405(A)
- Need to Halt or Reduce Activity not a Defense from 40 CFR 122.41(c)
- Bypass of Wastewater Treatment from 40 CFR 122.41(m)
- Upset Conditions from 40 CFR 122.41(n)
- Inspection and Entry from 40 CFR 122.41(i)

- Penalties for Violations of Permit Conditions from 40 CFR 122.41(a)(2-3)
- Duty to Provide Information from 40 CFR 122.41(h)
- Records Contents from 40 CFR 122.41(j)(3)
- Submittal of Reports from 40 CFR 122.41(h, j, and l)
- Retention of Records and Reports from 40 CFR 122.41(j)(2)
- On-Site Availability of Records and Reports from 40 CFR 122.41(i)(2)
- Availability of Reports for Public Review from 40 CFR 122.1(e) and 122.7(1) and 40 CFR 2.101
- Planned Changes from 40 CFR 122.41(l)(1)
- Changes in the Discharge of Toxic Substances from 40 CFR 122.42(a)
- Anticipated Noncompliance from 40 CFR 122.41(l)(2)
- Reporting of Noncompliance from 40 CFR 122.41(l)(6-7) and 122.44(g)
- Permit Actions from 40 CFR 122.44(c) and 40 CFR 122.61 - 122.64
- Duty to Reapply from 40 CFR 122.41(b)
- Incorrect Information and Omissions from 40 CFR 122.41(l)(8)
- Signatory Requirements from 40 CFR 122.41(k)
- Property Rights from 40 CFR 122.41(g)
- Severability from 40 CFR 124.16
- Transfers from 40 CFR 122.41(l)(3)
- Oil and Hazardous Substance Liability from 40 CFR 125.3, 40 CFR Part 300, 33 CFR 153.10(e), and Section 311 of the CWA
- State Laws from 40 CFR § 122.1(f) and section 510 of the Act, and
- Reopening of the Permit from 40 CFR 122.41(f) and 122.44(c).

### **5.8 Permit Expiration**

This permit will expire five years from the effective date of the permit. Permits may be administratively extended in accordance with 40 CFR 122.6.

## **6 OTHER LEGAL REQUIREMENTS**

### **6.1 State Water Quality Standards and Certification**

EPA is requesting State officials to review and provide appropriate certification to this NPDES permit pursuant to 40 CFR 124.53. Since State waters are involved in the draft permit, the provisions of Section 401 of the Clean Water Act apply, requiring EPA to seek State certification that the permit is protective of the State Water Quality Standards before issuing a final permit. This certification by the State ensures that EPA issued permits are in compliance with the laws of the State (40 CFR 124.55). In accordance with 40 CFR 124.10(c)(1), public notice of the draft permit has been provided to State agencies with jurisdiction over fish, shellfish and wildlife resources, and over coastal zone management. As a result of the certification, the State may require more stringent permit conditions to ensure that the permit complies with State water quality standards.

### **6.2 Endangered Species Act**

Section 7 of the Endangered Species Act requires federal agencies to consult with the national Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) to determine if any threatened or endangered species could be beneficially or adversely impacted. For this draft permit, EPA has prepared a biological evaluation, which will be subject to review by these agencies.

### **6.3 Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act requires EPA to consult with NMFS with respect to the reissuance of this NPDES permit concerning its impacts on any essential fish habitat and to provide a description of the measures proposed to avoid, mitigate, and offset the impact of the discharge on such habitat. EPA finds that the draft permit will not affect essential fish habitat. EPA provides this Fact Sheet to describe the discharge, the draft permit, and the limits, conditions, and measures of mitigation established by the permit.

### **6.4 Coastal Zone Management Act**

The applicant has certified that the activities authorized by this draft permit are consistent with the Alaska Coastal Management Plan. The draft permit, Fact Sheet and consistency determination will be submitted to the State for review at the time of public notice. Pursuant to 40 CFR 122.49(d), requirements for State coastal zone management review and approval must be satisfied before the permit may be issued.

### **6.5 Pollution Prevention Act**

The Pollution Prevention Act requires, whenever feasible, that pollution be prevented or reduced at the source, that pollution which cannot be prevented be recycled in an environmentally safe manner, and that disposal or release into the environment be employed only as a last resort and be conducted in an environmentally safe manner. The Permittee will discharge in accordance with best management practices, which will address these provisions of the Pollution Prevention Act.

### **6.6 Oil Spill Requirements**

Section 311 of the Clean Water Act prohibits the discharge of oil and hazardous materials in harmful quantities. Discharges specifically controlled by the draft permit are excluded from the provisions of Section 311 because these discharges are limited to amounts and concentrations which are deemed to be protective of State water quality standards. However, this permit does not preclude the institution of legal action or relieve the Permittee from any responsibilities, liabilities, or penalties for other unauthorized discharges of toxic pollutants, which are covered by Section 311 of the Act.

## 7 REFERENCES

URS Corporation (prepared for Ketchikan Gateway Borough), June 9, 2003, Ketchikan Gateway Borough Ward Cove Sanitary Wastewater Treatment Plant, NPDES Permit Application

USEPA (1991). Technical Support Document for Water Quality-Based Toxics Control. Office of Water, Washington, D.C. EPA/505/2-90-001.

USEPA (1993). Guidance Manual for Developing Best Management Practices (BMP). Office of Water, Washington, D.C. EPA/833/2-93-004.

USEPA (1996). NPDES Permit Writers' Manual. Office of Wastewater Management, Washington, D.C. EPA/833/B-96-003.

ADEC (2003). Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances.



## APPENDIX A – LOCATION MAP

**APPENDIX B – SITE DRAWING**

## APPENDIX C – BASIS FOR EFFLUENT LIMITATIONS

### Statutory and Regulatory Basis For Limits

Sections 101, 301(b), 304, 308, 401, 402, and 405 of the Clean Water Act (CWA) provide the basis for effluent limitations and other conditions in the draft permit. The EPA evaluates the discharges with respect to these sections of the CWA and the relevant NPDES regulations to determine which conditions to include in the draft permit.

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

### Technology-Based Evaluation

Section 301(b) of the CWA requires EPA to develop secondary treatment standards, representing a minimum required level of performance, for publicly owned treatment works (POTWs – publicly owned, including ownership by a borough, treatment works treating domestic sewage). EPA’s requirements are presented at 40 CFR 133 and include the technology-based standards for BOD<sub>5</sub>, TSS, and pH shown by Table C-1.

**Table C-1, Secondary Treatment Standards**

Parameter	Effluent Limitation		
	Monthly Average (mg/L)	Weekly Average (mg/L)	Monthly Average Removal (%)
BOD <sub>5</sub>	30	45	≥ 85
TSS	30	45	≥ 85
pH	6.0 – 9.0		

### Water Quality-Based Evaluation

In addition to the technology-based limits discussed above, EPA evaluated the discharge to determine compliance with Section 301(b)(1)(C) of the CWA, which requires the establishment of limitations necessary to meet State water quality standards. Discharges to State waters must also comply with limitations imposed by the State as a part of its certification of NPDES permits under Section 401 of the CWA.

EPA regulations at 40 CFR 122.44(d) require permits to include limits for all pollutants or parameters which are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The limits must be stringent enough to ensure that water quality standards are met and must be consistent with any available waste load allocation. The draft permit includes water-quality based limits for fecal coliform and chlorine residual.

In determining whether water quality-based limits are needed and developing those limits, when necessary, EPA uses the approach outlined below.

- Determine the appropriate water quality criteria.
- Determine whether there is reasonable potential to exceed the criteria.
- Develop a wasteload allocation (WLA).
- Develop effluent limitations.

The following sections provide detailed discussion of each step.

### **Water Quality Criteria**

The first step in developing water quality-based limits is to determine the applicable water quality criteria, which the State presents in the Alaska Administrative Code at 18 AAC 70 and in the *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances* (2003), which includes criteria established by the National Toxics Rule at 40 CFR 131.36. Applicable criteria are based on the beneficial uses of the receiving water; and for Ward Cove those uses are marine use classes (2) (A, B, C, and D) as established at 18 AAC 70.050 - (A) water supply (aquaculture, seafood processing, and industrial), (B) water recreation (contact and secondary), (C) growth and propagation of fish, shellfish, other aquatic life, and wildlife, and (D) harvesting for consumption of raw mollusks or other raw aquatic life. To protect all beneficial uses, the permit limits are based on the most stringent of the water quality criteria applicable to those uses.

### **Reasonable Potential Evaluation**

In evaluating the need for water quality-based effluent limits (WQBELs), a projection of the receiving water concentration (downstream of where the effluent enters the receiving water) for each pollutant of concern is made. If the projected downstream concentration in the receiving water exceeds the numeric criterion for a specific chemical, then there is "reasonable potential" that the discharge may cause or contribute to an excursion above the applicable water quality standard, and a WQBEL is required.

In some cases, a mixing zone provides dilution of the effluent. Mixing zone allowances will increase the mass loading of the pollutant to the water body and decrease treatment requirements. Mixing zones can be used only when there is adequate ambient flow volume and the ambient water is below the criteria necessary to protect designated uses. Here, the Applicant has not requested approval of a mixing zone.

### **Wasteload Allocations**

Once it has been determined that a WQBEL is required for a pollutant, the first step in developing a permit limit is development of a WLA for the pollutant. A WLA is the concentration (or loading) of a pollutant that the Discharger may discharge without causing or contributing to an exceedance of water quality standards in the receiving water.

In general, the period over which a criterion applies is based on the length of time the target organism can be exposed to the pollutant without adverse effect. For example, aquatic life criteria generally apply as one-hour averages (acute criteria) and four-day averages (chronic criteria). Because the different criteria apply over different time frames, it is not possible to compare them directly to determine which criterion results in the most stringent limits. To allow for comparison, each criterion is statistically compared to a long-term average effluent concentration. The criterion that results in the most stringent long-term average concentration is the WLA that is used to calculate the permit limits.

### **Permit Limits**

Once the WLA has been developed, EPA derives daily maximum and monthly average permit limits. This approach takes into account effluent variability, sampling frequency, water quality standards, and the difference in time frames between the monthly average and daily maximum limits.

### **Basis for Effluent Limits and Monitoring Requirements for Specific Pollutants**

The draft permit includes effluent limitations for flow, BOD<sub>5</sub>, TSS, pH, fecal coliform, and chlorine residual. In addition to these effluent limits, monitoring requirements have also been established for dissolved oxygen and metals. The basis for effluent limits and monitoring requirements for each of these parameters is discussed below.

**BOD<sub>5</sub>**

40 CFR 133 establishes the technology-based, minimum levels of treatment required of secondary POTWs for BOD<sub>5</sub>. 40 CFR 122.45(f) requires, with some exceptions, that permit limitations be expressed in terms of mass. Based on the design capacity of the WWTP of 25,000 gpd, technology-based requirements for BOD<sub>5</sub> are expressed as follows.

Concentration-Based Limits		Mass-Based Limits	
Monthly Avg (mg/L)	Weekly Avg (mg/L)	Monthly Avg (lbs/day)	Weekly Avg (lbs/day)
30	45	6.3	9.4

Although the State has not established specific water quality criteria for BOD<sub>5</sub>, the TMDL for BOD<sub>5</sub> to Ward Cove, established in 1994, limited loading to the surface layer of the Cove from the entire KPC facility to 16,000 lbs/day, from June through October. The figure of 6.3 lbs/day from the WWTP does not reflect the entire BOD<sub>5</sub> loading that will originate from the former KPC site, nor does it reflect the entire loading to be discharged through Outfall 001, proposed for coverage by the draft permit. Because BOD<sub>5</sub> levels in Lake Connell water are expected to be insignificant, however, the total BOD<sub>5</sub> loading to the Cove from Outfall 001 will likely represent less than 1 percent of the loading that was allotted to the entire (former) KPC facility by the 1994 TMDL.

At present, KPC and the Borough are seeking to permit all other discharges from the former KPC site. KPC is seeking an individual NPDES permit for discharges of treated landfill leachate and of storm water from the KPC landfill area; and the Borough is seeking coverage under the general storm water permit (MSGP-2000) for discharges of storm water from the area of the former manufacturing facility. Because manufacturing activity has ceased and former storage and processing areas have been reclaimed and revegetated, EPA expects that BOD<sub>5</sub> loading attributable to other discharges from the former KPC site will be significantly less than historical loadings.

The concentration-based limits of the draft permit for BOD<sub>5</sub> in the discharge from the WWTP are retained from Permit No. AK-000092-2, and the mass-based limits discussed above are proposed as additional BOD<sub>5</sub> limits.

The proposed permit is requiring monitoring of BOD<sub>5</sub> in WWTP influent and effluent, as well as infrequent monitoring of the entire flow discharged through Outfall 001. Monitoring of WWTP influent and effluent will determine compliance with concentration and mass-based effluent limits and with the required removal efficiency. Monitoring of the entire discharge flow through Outfall 001 will enable an understanding of BOD<sub>5</sub> loading attributable to water diverted from Lake Connell.

**TSS**

40 CFR 133 establishes the technology-based, minimum levels of treatment required of secondary POTWs for TSS. 40 CFR 122.45(f) requires, with some exceptions, that permit limitations be expressed in terms of mass. Based on the design capacity of the WWTP of 25,000 gpd, technology-based requirements for TSS are expressed as follows.

Concentration-Based Limits		Mass-Based Limits	
Monthly Avg (mg/L)	Weekly Avg (mg/L)	Monthly Avg (lbs/day)	Weekly Avg (lbs/day)
30	45	6.3	9.4

Although the State has not established specific water quality criteria for total suspended solids (TSS), monitoring data shows that the WWTP is expected to meet the technology-based secondary treatment standards, which represent a satisfactorily high quality effluent to protect the beneficial uses of Ward Cove. The concentration-based limits of the draft permit for TSS in the discharge from the WWTP are retained from Permit No. AK-000092-2, and the mass-based limits discussed above are proposed as additional TSS limits.

#### **pH**

The proposed pH limit for discharges from the WWTP is the secondary treatment standard of 40 CFR 133. The most stringent, applicable State water quality criteria for pH, presented at 18 AAC 70, is 6.5 to 8.5 for aquaculture use of the receiving water. Based on the absence of commercial and/or industrial discharges to the WWTP and the dilution provided by diverted flow from Lake Connell, EPA believes that a more stringent pH range than the technology-based requirements of 40 CFR 133, applied to the discharge from the WWTP, is not necessary to meet the applicable water quality criteria. The current discharge permit does not apply a pH limit to discharges from the WWTP or from discharges through Outfall 001.

#### **Fecal Coliform Bacteria**

The most stringent, applicable State water quality criteria for fecal coliform bacteria are those for harvesting for consumption of raw mollusks and other raw aquatic life. Based on a 5-tube decimal dilution test, the fecal coliform median MPN may not exceed 14 FC/100 ml, and not more than 10% of the samples may exceed a fecal coliform median MPN of 43 FC/100 ml.

#### **Flow**

The current permit includes minimum and maximum flow limits for discharges through Outfall 001. Because the flow being diverted from Connell Lake is important only in terms of the dilution that it provides for WWTP effluent, the draft permit includes only a minimum flow required through Outfall 001 that reflects a minimum required flow from Connell Lake of 2 mgd. This minimum flow requirement at Outfall 001 will ensure that bacteria levels will be below applicable water quality criteria at the outfall. Based on the design capacity of the WWTP, a maximum flow limitation is also established for effluent flow from the WWTP.

#### **Chlorine Residual**

The effluent limitation for chlorine, as measured at internal outfall 001a, is based on standard operating practice – that a properly designed and maintained WWTP can achieve adequate disinfection, if a 0.5 mg/L chlorine residual is maintained after 15 minutes of contact time.

#### **Metals**

The proposed permit will require analysis one time in the permit cycle for the toxic metals, identified as Compound Nos. 1 – 13 by the National Toxics Rule at 40 CCR 131.36. Analysis of WWTP effluent for metals is not required by the current permit; however, this minimum proposed schedule of analysis will provide baseline information regarding the quality of effluent discharged from the WWTP. Although influent flow to the WWTP should be solely domestic type wastewater, EPA is exercising some caution because septage will be trucked from off-site to the composting facility and because some influent flows will originate in shop areas of the manufacturing facility.

#### **Residues**

Alaska's water quality standards at 18 AAC 70 require marine waters to be free of floating debris, sludge, deposits, foam, scum, and other residues. The Code states that, residues may not, alone, or in combination with other substances or wastes, make the water unfit or unsafe for the use; cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.

The State's standard is included as a limitation in the proposed permit, however, residues are not anticipated to cause an exceedance of the standard.

**Anti-Degradation**

In addition to water quality-based limitations for pollutants that could cause or contribute to exceedances of standards, EPA must consider the State's antidegradation policy. This policy is designed to protect existing water quality when existing water quality is better than the water quality standard and to prevent water quality from being degraded below the standard, when existing quality just meets the standard. The draft permit will assure that existing water uses and the level of water quality in Ward Cove necessary to protect existing uses will be maintained and protected, and therefore, is consistent with Alaska's antidegradation policy, as presented at 18 ACC 70.015.