Sepa Fact Sheet

Public Comment Start Date: April 22, 2009 Public Comment Expiration Date: May 22, 2009

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Proposed Issuance of a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA) for

United States Department of Defense, Department of the Navy Naval Base Kitsap Bangor

EPA Proposes To Issue NPDES Permit

EPA proposes to issue the NPDES permit for the facility referenced above. The draft permit places conditions on the discharge of pollutants with once through cooling water and drydock floodwater to waters of the United States. 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 from the facility.

This Fact Sheet includes:

- information on public comment, public hearing, and appeal procedures
- a listing of proposed effluent limitations and other conditions for the facility
- a map and description of the discharge location
- technical material supporting the conditions in the permit

State Certification

EPA is requesting that the Washington Department of Ecology certify the NPDES permit for this facility, under Section 401 of the Clean Water Act. Comments regarding the certification should be directed to:

Department of Ecology, State of Washington Northwest Regional Office 3190 - 160th Ave. SE Bellevue, WA 98008-5452 Phone: 425-649-7000

Public Comment

Persons wishing to comment on, or request a Public Hearing for the draft permit for this facility may do so in writing by the expiration date of the Public Comment 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 and requests for Public Hearings must be in writing and should be submitted to EPA as described in the Public Comments Section of the attached Public Notice.

After the Public Notice expires, and all comments have been considered, EPA's regional Director for the Office of Water and Watersheds will make a final decision regarding permit issuance. If no substantive comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If substantive comments are received, EPA will address the comments and issue the permit. The permit will become effective no less than 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days.

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 at the address below. The draft permit, fact sheet, and other information can also be found by visiting the Region 10 NPDES website at "http://epa.gov/r10earth/waterpermits.htm."

United States Environmental Protection Agency Region 10 1200 Sixth Avenue, OWW-130 Seattle, Washington 98101 (206) 553-0523 or Toll Free 1-800-424-4372 (within Alaska, Idaho, Oregon and Washington)

The fact sheet and draft permit are also available at:

Department of Ecology, State of Washington Northwest Regional Office 3190 - 160th Ave. SE Bellevue, WA 98008-5452 Phone: 425-649-7000

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Acronyms

1-DMax	The highest water temperature reached on any given day. This measure can be obtained using calibrated maximum/minimum thermometers or continuous monitoring probes having sampling intervals of thirty minutes or less.
1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
7-DADMax	Arithmetic average of seven consecutive measures of daily maximum temperatures. The 7-DADMax for any individual day is calculated by averaging that day's daily maximum temperature with the daily maximum temperatures of the three days prior and the three days after that date.
30B3	Biologically-based design flow intended to ensure an excursion frequency of less than once every three years, for a 30-day average flow.
ACR	Acute-to-Chronic Ratio
AML	Average Monthly Limit
ASR	Alternative State Requirement
AWL	Average Weekly Limit
BA	Biological Assessment
BAT	Best Available Technology economically achievable
BCT	Best Conventional pollutant control Technology
BE	Biological Evaluation
BO or BiOp	Biological Opinion
BOD ₅	Biochemical oxygen demand, five-day
BMP	Best Management Practices
BPT	Best Practicable
°C	Degrees Celsius
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
COD	Chemical Oxygen Demand
CSO	Combined Sewer Overflow
CV	Coefficient of Variation
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved oxygen

U.S. Navy-Bangor Fact Sheet

EA	Environmental Assessment
Ecology	Washington State Department of Ecology
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FDF	Fundamentally Different Factor
FR	Federal Register
gpd	Gallons per day
HUC	Hydrologic Unit Code
lbs/day	Pounds per day
LTA	Long Term Average
mg/L	Milligrams per liter
ml	milliliters
ML	Minimum Level
μg/L	Micrograms per liter
mgd	Million gallons per day
MDL	Maximum Daily Limit or Method Detection Limit
MF	Membrane Filtration
MPN	Most Probable Number
Ν	Nitrogen
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
OWW	Office of Water and Watersheds
O&M	Operations and maintenance
PCS	Permit Compliance System
QAP	Quality assurance plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
RWC	Receiving Water Concentration

SIC	Standard Industrial Classification
SPCC	Spill Prevention and Control and Countermeasure
SS	Suspended Solids
SSO	Sanitary Sewer Overflow
s.u.	Standard Units
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TRC	Total Residual Chlorine
TRE	Toxicity Reduction Evaluation
TSD	Technical Support Document for Water Quality-based Toxics Control
	(EPA/505/2-90-001)
TSS	Total suspended solids
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
WET	Whole Effluent Toxicity
WLA	Wasteload allocation
WQBEL	Water quality-based effluent limit
WQS	Water Quality Standards

I. Applicant

General Information

This fact sheet provides information on the draft NPDES permit for the following entity:

United States Department of Defense, Navy Naval Base Kitsap Bangor NPDES Permit # WA-002557-7

Physical Address:

7001 Finback Circle Silverdale, WA 98315

Mailing Address:

Naval Base Kitsap Bangor 7001 Finback Circle, Room E300 Silverdale, WA 98315

Contact:

Carol MacKenzie, Water Program Manager <u>carol.mackenzie@navy.mil</u> 360-315-1992

II. Facility Information

A. General Facility Information

The United States Department of Defense, Department of the Navy, has applied to EPA for an NPDES permit to discharge pollutants to Hood Canal from the Intermediate Maintenance Facility (IMF) at the Naval Base Kitsap Bangor. The base is located on the western side of the Kitsap Peninsula, on Hood Canal, just north of Silverdale, WA (west of Seattle). This facility's mission is to support the TRIDENT missile system. As part of this support, the facility performs repairs and renovations on Navy submarines. These operations are the subject of this NPDES permit. The focus is on the drydock (or graving dock) area and wastewater generated during such operations.

The drydock, properly known as a graving dock, is a narrow concrete basin, closed by gates or by a caisson, into which a vessel may be floated and the water pumped out, leaving the vessel supported on blocks. The keel blocks as well as the bilge block are placed on the floor of the dock in accordance with the "docking plan" of the ship. Vessels are in drydock at Bangor for approximately one month at a time and there is typically only a few days between taking a vessel out of drydock and putting another one in drydock. The drydock is 90 feet wide x 690 feet long x 63 feet deep and is situated 43 feet below MLLW (Mean Lower Low Water). Repairs in the graving dock take place below the surface level of Hood Canal. Submarines are floated into the dock, then the tide gates are shut and the water is pumped out to create a dry work environment. Coverage under the multisector stormwater permit WAR-05A63F authorizes discharges of stormwater from upland areas. This is the first individual NPDES permit issued to Bangor and the first coverage for non-contact cooling water and drydock flood water.

B. Wastewater Description

<u>Non-contact cooling water:</u> While in the graving dock, submarines require an outside cooling water source. The facility supplies once-through cooling water, taken from Hood Canal, to the submarines in the graving dock.

Water for the non-contact cooling system, known to the permittee as Auxiliary Salt Water (ASW), is pumped from Hood Canal, through heat exchangers in the submarine and is then returned to the canal. Cooling water at the facility is drawn from 10 feet below mean low water elevation in the canal at Facility No. 7427 by two ASW Pumps and is discharged at approximately 30 feet below mean low water elevation at the same location as the intake. Average cooling water flow is 878 gpm (1.3 MGD) with an observed range of approximately 500 - 1600 gpm (0.72 - 2.3 MGD).

The discharge of once-through cooling water is specifically authorized and regulated by the proposed NPDES permit.

The application states no additives are used with the cooling water. The Navy confirms additives are not used with the cooling water.

<u>Drydock floodwater</u>. When maintenance of a submarine is complete, and Hood Canal water is allowed to enter the drydock to float the vessel, the water which flows over the vessel and drydock surfaces is referred to as drydock floodwater. The discharge of drydock floodwater at Outfall 002 is specifically authorized and regulated by the proposed NPDES permit.

<u>Caisson ballast water and drydock dewatering water:</u> The caisson is a rectangular shaped structure used as a gate to prevent Hood Canal water from entering the drydock. Starting with an empty drydock, Hood Canal water is allowed to enter in a controlled manner. When the water level in the drydock is equivalent to that in Hood Canal, and a vessel is in place in the drydock, the caisson is closed to block Hood Canal water from entering and large dewatering pumps remove the water and discharge it back to Hood Canal. Discharges of ballast water from the caisson and drydock dewatering water are returning ambient water uncontaminated back to Hood Canal. Authorization to discharge is not required.

<u>Salt Water Separation Discharge:</u> Once the drydock caisson is seated and the drydock is dewatered, some Hood Canal water may leak at the interface between the caisson and drydock. There is a curb on the drydock floor near the caisson that keeps the leakage separate from other waters in the drydock. The leakage is pumped back into Hood Canal and does not contact the industrial activity of ship repair and authorization to discharge is not required.

<u>Hydrostatic Relief (groundwater)</u>: By design, the drydock incorporates a system to lower the groundwater table adjacent to the drydock. This reduces hydrostatic pressure on the floors and walls to maintain structural integrity. The uncontaminated groundwater is discharged into Hood Canal and is not an industrial activity and authorization is not required.

<u>Vessel Discharges during Dewatering:</u> When a vessel is brought into drydock it may discharge ballast or sonar dome water. The permit prohibits the discharge of ballast water from contacting the drydock floor where it is possible to pick up debris from ship repair.

<u>Drydock Operations Water:</u> Ship repair services include electrical and machine work, carpentry, steel fabrication, pipe-fitting, painting, sand blasting, and pressure washing. During normal drydock operation, all water from the drydock floor is directed to the Industrial Wastewater Pretreatment Facility (Building 7030). After treatment, the water is discharged into the sanitary sewer which discharges to the Central Kitsap Wastewater Treatment Plant per State Waste Discharge Permit ST-7363. Drydock floor drainage may consist of stormwater, pressure washer wastewater, hydroblast wastewater, potable water, rinse water, and steam condensate.

C. Summary of Discharge Quality

Effluent monitoring data for the discharge of Auxiliary Salt Water is summarized in the following table.

Parameter	Units	Maximum Daily Value	Average Daily Value	No. of Measurements
Flow	gpm	1,600	878	145
Temperature (Winter)	°C	13.9	11.4	70
Temperature (Summer)	°C	18.3	14.5	68

Table 1: Effluent Quality

III. Receiving Water

This facility discharges to Hood Canal, which flows into Puget Sound via Admiralty Inlet. `

A. Receiving Water Characterization

CWA Section 303(d) requires states to identify, at two year intervals, specific water bodies where water quality standards will not be met after implementation of technology-based effluent limitations on point sources. TMDLs (total maximum daily loads) must be developed for 303(d) listed waters to determine the maximum amount of the impairing pollutant that can be added to a water body from all sources without exceeding the applicable water quality standard. CWA Section 305(b) requires states to describe, also at two year intervals, the water quality of all waters of their states. EPA has developed guidance that includes a recommended format for a single document to satisfy the reporting requirements of CWA Sections 303(d) and 305(b) – *Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d), 305(b), and 314 of the Clean Water Act.* Based on EPA's guidance document, which recommends designation of five categories of waters, Ecology has established the following scheme for categorization of its surface waters.

Category	Description
1	Water body meets standards for all pollutants for which it has been tested.
2	Waters of concern – there is some evidence of a water quality problem, but not enough to require a TMDL at this time.
3	No data – water bodies that have not been tested and waters that do not appear in any other category
4	Polluted waters that do not require a TMDL, however, pollution is being addressed in one of three ways:
4a	A TMDL is in place and is actively being implemented actively implemented.
4b	A Pollution Control Plan is in place.
4c	Water is impaired by causes that cannot be addressed through a TMDL.
5	Polluted waters that require a TMDL – these waters are the State's 303(d) listed waters.

 Table 2. State of Washington Water Quality Assessment Categories

The following segments of Hood Canal in the vicinity of the Naval Base Kitsap Bangor are identified on Ecology's 2004 Integrated Water Quality Assessment. Each of these segments is designated as Category 2 or 5. Several segments in the vicinity of the Naval Base Kitsap Bangor have also identified as Category 1 for temperature.

Listing ID Number	Category	Impairing Pollutant
38380	5	Dissolved Oxygen
38382	2	pН
10271	5	Dissolved Oxygen
10272	2	pН
40983	5	Dissolved Oxygen
40984	5	Dissolved Oxygen

 Table 3. 303(d) and 305(b) Listed Segments of Hood Canal

B. Water Quality Standards

In accordance with NPDES regulations at 40 CFR 122.4, this permit, although issued by EPA, must ensure compliance with water quality standards of the State of Washington. A state's water quality standards include designated uses; water quality criteria to protect designated uses; an antidegradation policy; and policies to implement water quality standards. Water quality standards for surface waters of the State of Washington are established in Chapter 173-201A of the Washington Administrative Code (WAC) and are summarized below.

1. Designated Uses

WAC 173-201A-612 establishes the following designated uses for Hood Canal.

Aquatic Life Uses:	Extraordinary
Recreation Uses:	Primary Contact Recreation
Shellfish Harvesting	
Miscellaneous Uses:	Wildlife Habitat
	Harvesting
	Commerce and Navigation
	Boating
	Aesthetics

2. Water Quality Criteria

Water quality criteria, applicable to this receiving water, are summarized in the following table.

Pollutant	Basis	Criteria
Temperature	Extraordinary Quality	13°C (1-DMax)
	Aquatic Life Use	per WAC 173-201A-210 (1) (c) Table 210 (1)(c)
		When a water body's temperature is warmer than the criteria in Table 210 (1)(c) (or within 0.3° C (0.54° F) of the criteria) and that condition is due to natural conditions, then human actions considered cumulatively may not cause the 7- DADMax temperature of that water body to increase more than 0.3° C (0.54° F). per WAC 173-201A-210 (1) (c) (i)
Aesthetics	Shellfish Harvesting, Recreational Uses, and Miscellaneous Marine Water uses	Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste. per WAC 173-201A-210 $(2 - 4)$ and WAC 173-
		201A-260(2) (b)

Table 4. Applicable Water Quality Criteria

3. Mixing Zones

In WAC 173-201A-400, the State authorizes mixing zones and establishes criteria for their size and location. This permit does not include authorization of a mixing zone, as the permittee, in accordance with Section II. B of the permit, must first provide sufficient site-specific technical information to allow a determination regarding suitability of a mixing zone, and if appropriate, the size and location of a mixing zone.

Section II.B of the permit requires the permittee to submit a Mixing Zone Analysis to EPA to determine the suitability of a mixing zone for temperature in Hood Canal, and to determine the dimensions and in-zone characteristics of such a mixing zone.

IV. Effluent Limitations

A. Basis for Effluent Limitations

In general, the CWA requires that the effluent limitations for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limitations are established by EPA for many industries and are based on available pollution control technology. Because the IMF does not fit into an industrial category for which EPA has developed technology-based requirements, EPA may use best professional judgment (BPJ) to establish technology-based permit requirements, pursuant to authority

established by CWA Section 402 (a) (1) (B), and in accordance with requirements established at 40 CFR 125.3.

Water quality-based effluent limitations may be more stringent than technology-based effluent limits and are designed to ensure that applicable water quality standards are met.

In accordance with NPDES regulations at 40 CFR 122.44 (k), best management practices (BMPs) can be used to control or abate the discharge of pollutants in several circumstances, including, when numeric effluent limitations are infeasible. BMPs are defined at 40 CFR 122.2 as schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. The inclusion of BMPs as requirements in discharge permits is authorized by CWA Section 304 (e).

B. Proposed Effluent Limitations

Prohibitions and other requirements proposed by the permit to control the discharge of pollutants with once through cooling water and drydock floodwater are described below.

Limitations and Prohibitions

The draft permit includes a compliance schedule of five years to achieve the water quality standards. The proposed permit contains an interim end of pipe temperature limit of 19°C. It is based on existing demonstrated performance using procedures in EPA's Technical Support Document and Washington's spreadsheet tsdcal1007.

The permit prohibits the addition of chemicals to cooling water prior to discharge, discharges that contain cleaning solutions or solids and discharges that contain foam and oily wastes.

The permit prohibits all process water discharges and industrial stormwater discharges from the drydock. This is determined to be best available technology economically achievable (BAT).

The permit requires development and implementation of a BMP Plan to control the discharge of pollutants, including temperature, to Hood Canal. The mixing zone analysis and AKART Study will result in attainment of the 13°C water quality standard for temperature. The permit may be modified or reissued to establish a mixing zone or an AKART based effluent limitation.

Section I.B of the permit establishes the following discharge prohibitions.

- The addition of chemicals to cooling water prior to discharge is prohibited.
- The discharge of cleaning solutions or solids, which are residuals of cooling system cleaning efforts, are prohibited.
- The discharge shall not contain floating solids, visible foam, or oily wastes that produce a sheen on the surface of the receiving stream
- Discharges that are offensive to the senses of sight, smell, touch, or taste are prohibited.
- The permittee is required to immediately implement readily apparent and readily achievable operational and/or equipment modifications to reduce temperature of

the discharge to Hood Canal. With this requirement, EPA is expressing its expectation that the permittee will separate Auxiliary Salt Water intake and discharge locations to prevent recirculation of the same body of water within the cooling system and creation of a "hotspot" in the area of Outfall 001.

• Section I.B. lists prohibitions, monitoring and BMPs for drydock flood water.

Best Management Practices

Section II.C of the permit requires the permittee, within 180 days of the effective day of the permit, to develop and implement a BMP Plan to prevent or minimize the discharge of pollutants, including elevated temperature from once-through cooling water and drydock floodwater to Hood Canal.

V. Monitoring Requirements

A. Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and NPDES regulations at 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to further characterize the discharge and receiving water, to determine if additional effluent limitations are required, or to monitor impacts of the discharge on receiving water quality.

The permittee is responsible for conducting the monitoring, as established by the permit, and for reporting results to EPA using Discharge Monitoring Reports (DMRs, EPA Form 3320-1).

B. Effluent Monitoring

Monitoring frequencies are based on the nature and effect of the pollutants of concern, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits are less than the effluent limits.

Ecology's 2007 Temperature Guidance states:

"1. Temperature monitoring. Three to four years of effluent and upstream receiving water temperature data should be used."

"Temperature should be measured using continuous recording thermisters set at a one-half hour sampling interval. Guidance for using thermisters is available at http://www.ecy.wa.gov/pubs/0303052.pdf and technical assistance should be provided to permit holders when requested."

Copper has been detected from other naval cooling water discharges and the cooling water from Bangor must be characterized for copper. Results will be reviewed during the permit reissuance to determine if an effluent limitation is necessary.

Flood water monitoring is not possible due to the masking by the flood water. Monitoring of visible sheen, which is buoyant, is required for compliance with the no visible sheen effluent limitation.

Table 5 presents the proposed effluent monitoring requirements for Naval Base Kitsap Bangor. The effluent sampling location must be at Outfall 001, or at any point preceding the outfall, before the discharge from the facility contacts the receiving water. Effluent samples must be representative of the volume and nature of the monitored discharge. If no discharge occurs during a reporting period, "no discharge" shall be reported on the corresponding DMR.

Parameter	Units	Sample Location	Sampling Frequency	Sample Type
Flow	GPD	Outfall 001	Continuous ^A	Meter
Temperature	°C	Outfall 001	Continuous ^B	Probe ^B
Total Recoverable Copper	µg/l	Outfall 001	Twice per month	grab
Visible sheen		Outfall 002	Each launch	visual

Table 5. Effluent Monitoring Requirements

Permittee shall report, for each calendar month, average and maximum daily flow.

[B] Permittee shall monitor on a continuous basis using a temperature probe. The maximum daily temperature and the seven day average of the daily maximums (7-day DADMax) shall be reported.

Since the standard is in terms of both a one day maximum and a 7-DADMax both averaging periods are required to be reported.

C. Surface Water Monitoring

Table 6 presents the surface water monitoring requirements, which are proposed by the draft permit. Receiving water monitoring is necessary to determine whether this facility's discharge is causing or contributing to exceedances of applicable water quality standards. The permittee must monitor Hood Canal outside the influence of the facility's discharge.

 Table 6. Receiving Water Monitoring Requirements

Parameter	Sample Locations	Sampling Frequency	Sample Type	
Temperature (°C)	А	Continuous	Probe or Thermistor	
\overline{A} Monitoring location(s) shall be located as required by Section I. C. 1 of the permit				

Monitoring location(s) shall be located as required by Section I. C. 1 of the permit.

VI. Other Permit Conditions

A. Quality Assurance Plan

NPDES regulations at 40 CFR 122.41(e) require the permittee to develop procedures to ensure that monitoring data submitted to EPA is accurate and to explain data anomalies, if they occur. The permittee, the Department of the Navy, is required to develop a Quality Assurance Plan (QAP) for Naval Base Kitsap Bangor. Written notification of completion of this plan shall be submitted to EPA within 90 days of the effective date of the final permit. The permittee shall submit this letter to:

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

The QAP shall include standard procedures, which the permittee must adhere to for sample collection, handling, storage, and shipping, as well as laboratory analyses and data reporting.

B. Compliance Schedule

Section II.B. of the permit establishes requirements to conduct two studies (an AKART Study and a Mixing Zone Study) meant to lead to minimization or elimination of the thermal component of the discharge to Hood Canal at Outfall 001, to ensure that beneficial uses of the receiving water are protected, and to ensure that applicable water quality objectives are attained.

The permittee must conduct a technical and economic feasibility evaluation of all known, available and reasonable methods of prevention, control, and treatment (AKART) of the thermal component of discharges from the IMF to minimize the thermal load to Hood Canal. The report, which summarizes the AKART Study, must include selected methodologies to minimize or eliminate the discharge of elevated temperature cooling water, and it must include a proposed schedule to implement the selected methodologies. The proposed implementation schedule must be as short as reasonable but be no more than five years.

The permittee must also conduct an analysis regarding the suitability and character of a mixing zone in Hood Canal, which may be necessary to meet an effluent limitation for temperature of 13°C. The study must be conducted in accordance with applicable regulation and guidance established by Ecology.

Bangor is required to meet the water quality standard for temperature within five years of the effective date of the permit. An interim effluent limitation of 19°C is established for five years. The AKART study and mixing zone analysis must be submitted four years after the effective date of the permit. The temperature limit in Table 2 of the permit may be revised based on the results of the AKART and mixing zone analyses, through a permit modification or permit reissuance.

C. Best Management Practices

NPDES regulations at 40 CFR 122.44(k) require development of a Best Management Practices (BMP) Plan to control or abate the discharge of pollutants to achieve effluent limitations and standards or to carry out the purposes and intent of the Clean Water Act. The draft permit requires the permittee to develop and implement a BMP plan within 90 days of the effective date of the final permit, and it describes certain BMP conditions which must be included in the BMP Plan. The Plan must be kept on site and made available to EPA upon request.

D. Standard Permit Conditions

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

VII. Other Legal Requirements

A. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) and the U.S. Fish and Wildlife Service (USFWS), if their actions could beneficially or adversely affect any threatened or endangered species.

The species list and critical habitat designations presented in Table 7, below, were compiled using the most current ESA listings from NOAA Fisheries list of Endangered Species Act Status of West Coast Salmon & Steelhead and U.S. Fish and Wildlife Service list of Endangered, Threatened, Proposed, and Candidate Species, Critical Habitat, and Species of Concern in Western Washington (USFWS 2007a).

Endangered and threatened species at the vicinity of the discharge subject to this NPDES permit were identified from the Federal Register Notice issued by NOAA-Fisheries and the U.S. Fish and Wildlife Service. The National Oceanic and Atmospheric Administration Fisheries (NOAA-Fisheries) lists Chinook Salmon, Chum Salmon, and Steelhead Trout as threatened and present in the vicinity of the discharge. The United States Department of the Interior (U.S. Fish and Wildlife Service - USFWS) lists Bull Trout as threatened and present in the vicinity of the discharge. Verbal communication on July 23, 2008 from Matt Longenbaugh, NOAA-Fisheries confirmed that Puget Sound Chinook salmon, Hood Canal summer run Chum salmon, and Steelhead trout are included for protection under this permit. Bull trout are also included for protection under this permit as designated by the USFWS. All other species with existing listings (e.g., birds and mammals) are considered to remain unaffected by the discharge, as they are rarely present in the area of Bangor Naval Base.

Species	Population	Status	Federal Register Notice
Fishes			
Chinook Salmon (Oncorhynchus tshawytscha)	Puget Sound ESU ^a	Threatened ^c	64 FR 14308 (03/24/99)
Chum Salmon (Oncorhynchus keta)	Hood Canal ESU ^a	Threatened ^c	64 FR 14528 (03/25/99)
Steelhead Trout (Oncorhynchus mykiss)	Puget Sound DPS ^b	Threatened ^c	72 FR 26722 (05/11/07)
Bull Trout (Salvelinus confluentus)	Coastal Puget Sound ^b	Threatened ^d	63 FR 31693 (06/10/98)
Mammals			
Killer Whale (Orcinus orca)	Southern Resident Population ^b	Endangered ^c	70 FR 69903 (11/18/05)
Steller Sea Lion (Eumetopias	Western Distinct	Threatened ^c	55 FR 12645 (04/05/90)

 Table 7. Threatened and Endangered Species

Species	Population	Status	Federal Register Notice
jubatus)	Population ^b		

^a Evolutionarily significant unit

^b Distinct population segment

^c NOAA 2008 ^d USEWS 2007

d USFWS 2007a

EPA has determined that issuance of this permit is not likely to adversely affect threatened Bull Trout, Chinook salmon and steelhead populations due to the rapid dispersion of discharges in the receiving water and due to the terms and conditions of the permit, which will ensure compliance with applicable surface water quality criteria for temperature for the protection of aquatic life. The temperature effects from point source discharges generally diminish down gradient quickly as heat is added and removed from a waterbody through natural equilibrium processes. The effects of temperature are unlike the effects of chemical pollutants, which may remain unaltered in the water column or accumulate in sediments and aquatic organisms.

Also, the permit requires Bangor to meet water quality standards at the end of pipe, prohibits process water discharged directly to Hood Canal by routing it to the sanitary sewer and requires best management practices for flood water.

B. Essential Fish Habitat

Essential fish habitat (EFH) includes the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect (reduce quality and/or quantity of) EFH. The EFH regulations define an adverse effect as any impact which reduces quality 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.

The principle pollutant of concern in discharges of once through cooling water from the Intermediate Maintenance Facility (IMF) is elevated temperature, where the applicable water quality criterion is 13°C for protection of aquatic life in extraordinary quality marine water.

The receiving water for this discharge is designated as Essential Fish Habitat (EFH) for Chinook salmon (NMFS 2005) and Coho salmon (personal communication, Matt Longenbaugh, NOAA-Fisheries on July 23, 2008). This critical-habitat designation includes the Puget Sound marine areas, including the south Sound, Hood Canal, and north Sound to the international boundary at the outer extent of the Strait of Georgia, Haro Strait, and the Strait of Juan de Fuca to a straight line extending north from the west end of Freshwater Bay, inclusive (NMFS 2005). The marine nearshore zone from extreme high tide to mean lower low tide within several Navy restricted zones has also been included in the final habitat designation (NMFS 2005).

EPA concludes that authorization to discharge from the IMF in accordance with the terms and conditions of the proposed permit is not likely to adversely affect Chinook salmon and Coho salmon EFH in the vicinity of the discharges for the same reasons as stated for the not likely to adversely affect determination for listed species. EPA will provide NOAA Fisheries with copies of the draft permit and fact sheet during the public notice period. Any recommendations received from NOAA Fisheries regarding EFH will be considered prior to issuance of these permits.

C. State Certification

Section 401 of the CWA 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 or additional monitoring requirements to ensure that the permit complies with water quality standards, or treatment standards established pursuant to any State law or regulation.

D. Permit Expiration

The permit will expire five years from the effective date.

VIII. References

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National Marine Fisheries Service (NMFS). 2005. Designation of Critical Habitat for 12 Evolutionarily Significant Units of West Coast Salmon and Steelhead in Washington, Oregon, and Idaho; Final Rule. National Marine Fisheries Service. Portland, OR. 2 September 2005. <u>http://www.nwr.noaa.gov/Publications/FR-</u> <u>Notices/2005/upload/70FR52630.pdf</u>

National Marine Fisheries Service (NMFS). 2008a. Recovery Plan for Southern Resident Killer Whales (Orcinus orca). National Marine Fisheries Service, Northwest Region, Seattle, Washington. 24 January 2008. <u>http://www.nmfs.noaa.gov/pr/pdfs/recovery/whale_killer.pdf</u>.

National Marine Fisheries Service (NMFS). 2008b. Recovery Plan for the Steller Sea Lion (Eumetopias jubatus). Revision. National Marine Fisheries Service, Silver Spring, MD. 29 February 2008. <u>http://www.nmfs.noaa.gov/pr/pdfs/recovery/stellersealion.pdf</u>.

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U.S. Fish and Wildlife Service (USFWS). 2007a. Endangered, Threatened, Proposed, and Candidate Species, Critical Habitat, and Species of Concern in Western Washington. Updated 8/8/2007. <u>http://www.fws.gov/westwafwo/pdf/species_list.pdf</u>



Appendix A: Facility Maps



Appendix B: Basis for Effluent Limits

The following discussion explains in more detail the statutory and regulatory basis for the technology and water quality-based effluent limits in the draft permit. Part A discusses technology-based effluent limits, Part B discusses water quality-based effluent limits in general, and Part C discusses facility specific water quality-based effluent limits.

A. Technology-Based Effluent Limitations

Technology-based limitations are established by EPA for many industries and are based on available pollution control technology. Because the Intermediate Maintenance Facility does not fit into an industrial category for which EPA has developed technology-based requirements, EPA may use best professional judgment (BPJ) to establish technology-based permit requirements, pursuant to authority established by CWA Section 402 (a) (1) (B), and in accordance with requirements established at 40 CFR 125.3.

In accordance with NPDES regulations at 40 CFR 122.44 (k), best management practices (BMPs) can be used to control or abate the discharge of pollutants in several circumstances, including, when numeric effluent limitations are infeasible. BMPs are defined at 40 CFR 122.2 as schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. The inclusion of BMPs as requirements in discharge permits is authorized by CWA Section 304 (e). The proposed permit does require the permittee to develop and implement a BMP plan.

B. Water Quality-Based Effluent Limitations

Statutory and Regulatory Basis

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet water quality standards by July 1, 1977. Discharges to State or Tribal waters must also comply with limitations imposed by the State or Tribe as part of its certification of NPDES permits under Section 401 of the CWA. Federal regulations at 40 CFR 122.4(d) prohibit the issuance of an NPDES permit that does not ensure compliance with the water quality standards of all affected States. The NPDES regulation (40 CFR 122.44(d)(1)) implementing 301(b)(1)(C) of the CWA 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 or Tribal water quality standard, including narrative criteria for water quality.

The regulations require the permitting authority to make this evaluation using procedures which account for existing controls on point and nonpoint 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.

Reasonable Potential Analysis

When evaluating the effluent to determine if water quality-based effluent limits are needed based on numeric criteria, EPA projects the receiving water concentration (downstream of where the effluent enters the receiving water) for each pollutant of concern. EPA uses the concentration of the pollutant in the effluent and receiving water and, if appropriate, the dilution available from the receiving water, to project the receiving water concentration. If the projected concentration of the pollutant in the receiving water exceeds the numeric criterion for that specific chemical, then the discharge has the reasonable potential to cause or contribute to an exceedance of the applicable water quality standard, and a water quality-based effluent limit is required. In the case of Bangor the measured temperature exceeds the numeric criterion and a water qualitybased effluent limit is required.

Sometimes it is appropriate to allow a small area of the receiving water to provide dilution of the effluent. These areas are called mixing zones. Mixing zone allowances will increase the mass loadings of the pollutant to the water body and will decrease treatment requirements. Mixing zones can be used only when there is adequate receiving water flow volume and when the receiving water meets the criteria necessary to protect the designated uses of the water body. Mixing zones must be authorized by Ecology.

C. Facility-Specific Water Quality Based Limits

Temperature

The proposed permit prohibits any chemical addition to the cooling water before it is discharged at Outfall 001.

The most stringent applicable water quality criterion for temperature in this portion of Hood Canal is established at WAC 173-201A-210 for protection of extraordinary water quality for aquatic life. The water quality standard requires that temperature of the receiving water be maintained at 13°C or lower, as a 1-DMax, which is a measure of the highest water temperature reached on any given day.

Data presented in Table 1 of this Fact Sheet demonstrates that effluent temperature commonly exceeds the applicable water quality criterion. Immediate implementation of readily available methods to reduce the temperature of the discharge is required (Section II. B. 1), Also required is a study of AKART to ensure that the permittee is undertaking all known, available, and reasonable methods of prevention, control, and treatment of the thermal component of discharges of once through cooling water. This permit may be reopened, or at the time of its next reissuance, provisions may be added to ensure attainment of AKART or an end of pipe effluent limitation taking into account the dilution factor from an Ecology approved mixing zone to achieve the limit at the edge of the mixing zone.

The proposed permit contains an interim end of pipe temperature limit of 19°C. It is based on existing demonstrated performance using procedures in EPA's Technical Support Document and Washington's spreadsheet tsdcal1007. The derivation of this interim limit is shown below.

PERFORMANCE-BASED EFFLUENT LIMITS

USE EXCEL TO PERFORM THE LOGNORMAL TRANSFORMATION AND CALCULATE THE TRANSFORMED MEAN AND VARIANCE

LOGNORMAL TRANSFORMED MEAN =	4.0100	
LOGNORMAL TRANSFORMED VARIANCE =	0.0059	
NUMBER OF SAMPLES/MONTH FOR COMPLIANCE MONITORING =		
AUTOCORRELATION FACTOR(ne)(USE 0 IF UNKNOWN) =	0	
E(X) =	55.3098	
V(X) =	18.102	
VARn	0.0002	
MEANn=	4.0129	
VAR(Xn)=	0.603	
MAXIMUM DAILY EFFLUENT LIMIT =	65.935	
AVERAGE MONTHLY EFFLUENT LIMIT =	56.588	
56.59686 56.58763		

<u>Fahrenheit</u>		<u>Celsius</u>
65.93461	=	18.9

Column1			
Maan	4.04		
	4.01		
Standard Error	0.01		
Median	4.01		
Mode	3.97		
Standard Deviation	0.08		
Sample Variance	0.0059		
Kurtosis	-0.92		
Skewness	0.29		
Range	0.30		
Minimum	3.87		
Maximum	4.17		
Sum	537.49		
Count	134.00		

Temp	Ln	Temp	Ln	Temp	Ln	Temp	Ln
54	3.99	60	4.09	51	3.93	52	3.95
55	4.01	62	4.13	51	3.93	52	3.95
54	3.99	62	4.13	52	3.95	52	3.95
54	3.99	64	4.16	52	3.95	49	3.89
53	3.97	64	4.16	57	4.04	49	3.89
53	3.97	57	4.04	56	4.03	49	3.89
52	3.95	55	4.01	57	4.04	49	3.89
54	3.99	55	4.01	58	4.06	49	3.89
53	3.97	55	4.01	58	4.06	48	3.87
53	3.97	56	4.03	58	4.06	50	3.91
53	3.97	56	4.03	63	4.14	50	3.91
53	3.97	54	3.99	65	4.17	50	3.91
56	4.03	52	3.95	62	4.13	50	3.91
60	4.09	52	3.95	58	4.06	50	3.91
58	4.06	53	3.97	58	4.06	50	3.91
57	4.04	53	3.97	60	4.09	50	3.91
59	4.08	52	3.95	59	4.08	51	3.93
59	4.08	53	3.97	59	4.08	50	3.91
60	4.09	52	3.95	59	4.08	50	3.91
60	4.09	51	3.93	58	4.06	54	3.99
60	4.09	52	3.95	57	4.04	55	4.01
59	4.08	51	3.93	57	4.04	52	3.95
60	4.09	50	3.91	56	4.03	53	3.97
59	4.08	50	3.91	55	4.01	53	3.97
60	4.09	51	3.93	54	3.99	55	4.01
60	4.09	51	3.93	53	3.97	58	4.06

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