

FACT SHEET FOR NPDES PERMIT WA-000088-4

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BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

The mill is located in Sumner, Washington adjacent to the White River. The mill was constructed by Northern Paperboard in 1915. Sonoco Products Company purchased the mill in 1980. The mill produced an average of 114 tons/day paperboard from waste paper and recycled cardboard during the period from January 1, 2004 through February 28, 2006. The paperboard produced is used in the pulp and paper industry as core material for paper rolls.

INDUSTRIAL PROCESS

The mill purchases waste cardboard and magazines type papers. The mill pulps the waste paper to produce linerboard.

The mill operates 24 hours per day all year with three shifts per day. The mill currently employs 55 employees and is a major employer in Sumner.

The mill's wastewater receives primary and secondary treatment before it is discharged into the White River through a diffuser system. The primary and secondary biological wastewater treatment systems were built in 1972. From January 1, 2004 to February 28, 2006 the wastewater flow averaged 0.21 million gallons per day (MGD) with a range from 0.113 to 0.298 MGD. During this time, the biochemical oxygen demand (BOD) averaged 61 pounds per day (lbs/day) and the total suspended solids (TSS) averaged 97 lbs/day. During this time, the production volume averaged 114 tons per day (tons/day) with a maximum of 122 tons/day. The highest twelve-month rolling average production rate during this time period was 115 tons/day. The company raw stock consisted of 75 percent corrugated and 25 percent non-corrugated waste paper. The company indicated that they plan to continue using the same percentage of raw materials for the foreseeable future.

DISCHARGE OUTFALL

The mill's discharge point is to the White River (Outfall 001) about 30 feet upstream of Fryar Avenue Bridge, at mile marker 1.4. The outfall line extends 10 feet from the south shoreline and ends with a diffuser under the water surface. The White River is classified as a "Class A waters" at the point of discharge.

SANITARY WASTEWATER

All of Sonoco's sanitary wastewaters are collected and discharged into the City of Sumner's collection system, where it receives treatment at the City of Sumner's wastewater treatment plant before being discharged into state waters.

STORMWATER

All process stormwaters except roof drains from the Sonoco’s facility are collected and sent to a holding pond. After collecting in the holding pond, the water is sent through an oil water separator and into the city of Sumner’s stormwater collection system via outfall 004. The stormwater goes into the city of Sumner’s stormwater system. The city of Sumner’s stormwater is a separate system and is not either a combined or a sanitary system. Therefore, Ecology has jurisdiction over the Sonoco’s stormwater as it is discharged into the Sumner’s stormwater collection system. The process-stormwater receives primary treatment before being discharged via outfall 004 and receives treatment to remove any oil that may be in the water. The primary treatment system removes the majority of the suspended solids. The stormwater makes contact with the card board and paper used in the production process. The stormwater does not come into direct contact with any metals that would cause it to become contaminated with dissolved metals. The treatment level before discharge of the stormwater via outfall 004 is considered to be at AKART. The stormwater requirements contained in the “The Industrial Stormwater General Permit” issued August 21, 2002 has been placed in the proposed permit with modifications. The main modifications are: the sampling frequencies have been reduced from quarterly to once each year and the action level has been eliminated. The yearly sampling is considered sufficient to ensure compliance with the intent of the general stormwater permit since the water receives primary treatment prior to discharge into the city of Sumner stormwater collection system.

The proposed sampling schedule is given in the table below with the benchmark values.

Outfall 004			
Parameter	Benchmark	Monitoring Frequency^a	Sample Type
BOD5	30 mg/L	Once/year	Grab
Ammonia	38 mg/L	Once/year	Grab
Lead	81.6 µg/L	Once/year	Grab
Copper	63.6 µg/L	Once/year	Grab
Turbidity	25 NTU	Once/year	Grab
Oil and Grease	15 mg/L	Once/year	Grab
Total Zinc	117 µg/L	Once/year	Grab
pH	6-9 SU	Once/year	Grab

^a The Permittee may petition the Department to reduce or suspend monitoring for one or more of these parameters upon consistent attainment of benchmark values. Consistent attainment is defined as four consecutive years where the reported values are equal to or less than benchmark values.

The concentrations of pollutants in the effluent are expected to be below the benchmark levels listed in the table above for Outfall 004. If any one of the sampled values is above the benchmark levels, the proposed permit requires the Permittee to perform a site inspection and to

review the BMP devised in the SWPPP to determine how to reduce the value(s) below the benchmark concentration.

The proposed permit requires the Permittee to prepare a Stormwater Pollution Prevention Plan (SWPPP) defined in Special Condition S16 to ensure that the discharge is continuously meeting the AKART level of treatment. The SWPPP must be prepared in accordance with the guidance from the following WEB site:

<http://www.ecy.wa.gov/pubs/0410030.pdf>.

PERMIT STATUS

The previous permit for this facility was issued on September 25, 2002. The previous permit placed effluent limitations on biochemical oxygen demand (BOD₅), total suspended solids (TSS), ammonia, pH, and acute and chronic toxicities. The previous permit required the Sonoco to study the seasonal ambient water temperature variations, measure fecal coliform content (using MPN technique), and measure the pH of the receiving water in the vicinity of the outfall. These studies have been completed.

An application for permit renewal was submitted to the Department on June 26, 2006 and accepted by the Department on August 8, 2006.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on December 20, 2006. A compliance inspection with sampling was conducted on March 14, 2006.

During the history of the previous permit, the Permittee has remained in compliance based on Discharge Monitoring Reports (DMRs) submitted to the Department and based on inspections conducted by the Department except for the dates listed below. On September 5, 2002, January 10 and 11, 2003 and September 27, 2004 the Permittee had exceedances for TSS and August 14, 2002 and February 19, 2003 for ammonia. The Permittee exceeded the BOD₅ limit once in 2001 and their TSS limits sixteen times in November and December 2001. The company adjusted the operations of their wastewater treatment system. The company has been in compliance with their permit though out 2005 and 2006. Penalties were issued for all of these violations.

WASTEWATER CHARACTERIZATION

The proposed wastewater discharge is characterized for the following regulated parameters:

Table 1: Wastewater Characterization

Parameter	Concentration
Color	300 Pt.Co. Units
Fecal Coliform	17 MPN/100 mL
Oil and Grease	1.8 mg/L
Sulfate (as SO ₄)	57 mg/L
Sulfide (As S)	1.4 mg/L

Parameter	Concentration
Aluminum Total	1.13 mg/L
Barium Total	0.211 mg/L
Boron Total	9.53 mg/L
Iron Total	0.367 mg/L
Magnesium Total	16.5 mg/L
Molybdenum	0.0653 mg/L
Manganese Total	0.716 mg/L
Titanium Total	0.0176 mg/L
Copper Total	0.0286 mg/L
Lead Total	0.0167 mg/L
Selenium Total	0.0103 mg/L
Zinc Total	0.192 mg/L
Phenols Total	0.017 mg/L

SEPA COMPLIANCE

There are no SEPA requirements for this action.

PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the

non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria. The design criteria for this treatment facility are sufficient to ensure compliance with the proposed permit.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Technology-based limitations are set by regulations or developed on a case by case basis. The federal effluent guidelines for practicable control technically available (BPT) is defined in Parts 430.52 and 430.55 Subpart E for paperboard from wastepaper subcategory. These guidelines were published in the federal register on November 18, 1982 and March 30, 1983. The federal effluent guidelines for best conventional pollutants control technology (BCT) for these categories were defined on December 17, 1986 to be the same as BPT previously defined in March 1983. BCT and BPT were defined more than ten years ago. With BCT and BPT being defined longer than ten years, we need to determine if they are still valid and if they can still be considered equivalent to all known and reasonable treatment (AKART) for these categories of paper making.

On April 15, 1998, the Environmental Protection Agency (EPA) adopted effluent guidelines for the Bleached Kraft Papergrade and Soda subcategories and Papergrade Sulfite subcategory. The 1998 allowances for BOD and TSS in pound per 1000 pound of pulp produced for the above categories were set at the same values as the allowances in the effluent guidelines the EPA published in 1982. The 1998 effluent guidelines took both emissions to air and water into consideration and included chlorinated organic compounds. Secondary treatment was the type of wastewater treatment required by the effluent guidelines adopted by EPA.

Throughout the history of the effluent guidelines, secondary treatment has been the accepted standard for BOD and TSS removal. It is expected that in the immediate future this trend will continue as indicated by the guideline promulgated on April 15, 1998. It is determined that the effluent guidelines for paperboard made from both corrugated and non-corrugated wastepaper are equivalent to AKART for the following reasons:

- The mill wastewater flow has historically been from two components of raw wastepaper – corrugated and non-corrugated.
- There were no changes in the new guidelines for BOD and TSS for the type of paper making promulgated on April 15, 1998.
- Secondary treatment has been and is expected to remain the level of treatment that the effluent guidelines are based on.

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- All permits except those of paper grade sulfite and Kraft subcategories have been drafted and issued with the 1982 effluent guidelines being determined to be equivalent to AKART.

Therefore, 40 CFR 430.52 and 40 CFR 430.55 Subpart E for paperboard from wastepaper subcategory will be used for the company's production of paperboard. Past production was set at 61 tons per day by previous permits. We will use 40 CFR 430.52 Subpart E effluent guideline allowances for this type of production being made prior to the 1982 guidelines promulgation. The highest twelve-month rolling average production during this time period was 115 tons per day. The company advised Ecology of plans to increase their production rate by 5 ton per day. Therefore, the new production is 59 tons per day. The NSPS guidelines values contained in 40 CFR 430.55 Subpart E applies to this type of production. The company indicated the raw furnish consisted of 75 percent corrugated and 25 percent non-corrugated. The breakout of production types and effluents guidelines numbers are given below:

Type	Production		40 CFR Subpart E (Effluent guidelines)			
	Tons paper day	Daily Production 1000 lbs paper day	Monthly average Lbs. BOD 1000 paper	Daily maximum Lbs. BOD 1000 paper	Monthly average Lbs. TSS 1000 paper	Daily maximum Lbs. TSS 1000 paper
Non-NSPS	61	122				
	Fraction					
Corrugated	0.75	91.5	2.8	5.7	4.6	9.2
Noncorrugated	0.25	30.5	1.5	3	2.5	5
NSPS	59	118				
	Fraction					
Corrugated	0.75	88	2.1	3.9	2.3	4.4
Noncorrugated	0.25	30	1.4	2.6	1.8	3.5

The technology effluent limits are calculated using the production and allowances indicated. The technology effluent limits are summarized below:

	BOD Monthly Average	BOD Daily Maximum	TSS Monthly Average	TSS Daily Maximum
Limits	529 Lbs./day	1034 Lbs./day	754 Lbs./day	1,487 Lbs./day

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The

Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in the receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

ANTIDegradation

The State of Washington's Antidegradation Policy requires that discharges into receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

In June 1993 and July 1994, Ecology finalized the ammonia and biochemical oxygen demand total maximum daily loads (TMDL) for the White River. Ecology set the waste load allocation (WLA) at 1.1 lbs./day for ammonia in the TMDL. Ecology set the WLA for the daily maximum for BOD at 673 lbs./day in the TMDL. Ecology placed these WLA values in the NPDES permit issued September 25, 2001.

The WLA allocation protects the designated classification of the White River in the vicinity of Sonoco's outfall. These WLA allocations are placed in the proposed permit. The WLA from the

TMDL contained in the proposed permit ensure that the receiving water is protected. The limits contained from the TMDL further ensure that the water quality criteria of the receiving water are equal to or above the designations and not degraded.

The previous permit required the Permittee to perform a two year study on temperature, fecal coliform, and pH. These studies are complete.

It appears that the natural conditions of the receiving water near Sonoco's outfall may be lower for temperature than the classification criteria given in Chapter 173-201A during late summer.

The Department has reviewed existing records and found that the White River at the point of Sonoco's discharge is below the water quality classification for temperature during a small time frame in the late summer months. After reviewing and performing a "reasonable potential analysis," Ecology determined that Sonoco discharge has no measurable affect on the temperature of the White River at the point of discharge. Since, the ambient temperature is unaffected; the designated classification is not affected by Sonoco's discharge.

The fecal coliform data gathered during the two years study indicated that the ten percent of fecal coliform values were greater than 200 colonies/100 mL. The data indicated that the White River is of lower water quality than the criteria assigned. These data for Sonoco's effluent showed that several tests measured fecal coliform counts greater than 1600 colonies/100 mL.

Questions raised during the permit processing, caused the Permittee to check their sanitary line for cross connections with the wastewater process water. Dye tests determined that there were cross connections. The Permittee has signed contracts to replace the affected sanitary lines. With the cross connection eliminated, the fecal coliform count should drastically decrease. At the point of discharge upstream from the Sonoco's discharge, the White River should meet the water quality criteria for fecal coliform.

At this time we are unable to determine if the water quality criteria will be met after the cross connections are eliminated with the November 25, 1992 water quality regulations. (WAC 173-201A). However, past studies performed on pulp mill effluent showed that the pulp mill effluent contained organisms that naturally inhabit wood used by pulp mills and are not derived from warm blooded mammals. As a result of these studies, Ecology may establish alternative indicator criteria established on a site specific basis for compliance with the water quality criteria (WAC 173-201A-200-2-iv)). A condition in the proposed permit requires the Permittee to determine if fecal coliform counts in the effluent will cause a violation of the water quality criteria at the edge of the chronic mixing zone; and if so, the Permittee must also determine whether the fecal coliform indicator organisms entered the effluent from the wood. Ecology will review the data, to determine whether an alternative indicator organism could be used. If the criteria are not met, the permit will be reopened and limits placed in the permit.

As stated in the factsheet below under "Description of the receiving water," the technology base proposed limit for pH will be protective of the water quality criteria for pH.

The Department has reviewed existing records for other chemicals and could not determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC for those chemicals; therefore, the Department applied the classification criteria designated for this water body for all other chemicals found in the effluent. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to White River at Mile Marker 1.4. Other nearby point source outfalls include the municipal wastewater treatment systems of the cities of Buckley, Carbonado, Enumclaw, Orting, Puyallup, South Prairie, Sumner, and Wilkeson and the wastewater treatment systems of Rainer School and Matsushita industrial facility. The Fleischmann's and Beatrice facilities have been closed. Significant nearby non-point sources of pollutants includes stormwater runoff and discharges from the fish hatcheries. Characteristic uses include the following: Salmon and trout spawning, non-core rearing, and migration; primary contact recreation; domestic, industrial, and agricultural water supplies; stock watering; wildlife habitat; harvesting; commerce and navigation; boating; and aesthetic values.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Water quality criteria for this discharge are summarized below:

Fecal Coliforms	100 organisms/100 mL maximum geometric mean
Dissolved Oxygen	8 mg/L minimum
Temperature	18 degrees Celsius maximum or incremental increases above background
pH	6.5 to 8.5 standard units
Turbidity	Less than 10 NTU above background
Toxics	No toxics in toxic amounts

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

If pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls which the Department has determined to be AKART mixing zones are authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC and are defined as follows:

The dilution factors of effluent to receiving water that occur within these zones have been determined at the critical condition using the CORMIX2 for near field and far field dilution. The dilution factors determined by the model are listed as:

	Acute	Chronic
Aquatic Life	15	130
Human Health, Carcinogen		130
Human Health, Non-carcinogen		130

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating surface water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of surface water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water. The critical conditions for the White River were as follows:

7Q10 low flow annual	199	cfs
Temperature	18	°C
pH	7.7	SU
Velocity	0.59	ft./sec
Depth	3.5	ft.*
Width	92	ft.*
Roughness (Manning)	0.03	*
Total Ammonia-N	0.10	mg/L
Dissolved Oxygen	7.7	mg/L

* Calculated by Sonoco Products Company in their Dilution Ratio Study

Instream flow -- The Permittee does not withdraw any water from the White River; therefore, no requirements are applicable to instream flow.

BOD₅ -- Under critical conditions, the TMDL daily maximum allowance of 673 lbs. of BOD/day is more restrictive than the technology limit. Therefore, the TMDL allowance has been placed in the permit instead of the technology based limit. The BOD₅ daily maximum limit set by the

TMDL is protective of dissolved oxygen and will be included in the proposed permit. No further analyses are required for these parameters. The permit limits for conventional pollutants based on the TMDL allowance become:

	BOD Monthly Average	BOD Daily Maximum	TSS Monthly Average	TSS Daily Maximum
Limits	529 Lbs./day	673 Lbs./day	754 Lbs./day	1,487 Lbs./day

Temperature – The White River is currently listed on the 2004 Water Quality Assessment (Final) – Category 5 listing for WRIA 10 for temperature. The Sonoco paper mill is located in WRIA 10 on the White River. The chronic dilution factor for the Sonoco diffuser determined in 1995 was 130. In 2002 and 2003, Parametrix prepared for the Northwest Pulp and Paper Association a two years study of the Columbia River and the White/Stuck River entitled “Temperature Study Results for Critical Period, June 15 to September 15, 2002, for Columbia River and White/Stuck River” and “Temperature Study Results for Critical Period, June 15 to September 15, 2003, for Columbia River and White/Stuck River. “As part of this study, Parametrix measured temperature up stream and down stream of the Sonoco Product Company outfall. The highest seven day running average temperatures measured in 2002 were 18.05 °C upstream and 18.09 °C downstream. The highest seven day running average temperatures measured in 2003 were 19.9 °C upstream and 19.8 °C downstream. Sonoco measured the temperature of there effluent from March 2005 through April 2006. The maximum temperature was measured in July 2005. The maximum temperature was 82 °F. The temperature of the stream is above the criteria and no total maximum daily load (TMDL) analysis has been performed on the White River near the Sonoco discharge outfall. Chapter 173- 201A WAC allows an increase of only 0.3 °C due to human activities for rivers where temperatures measure above the criteria. The highest temperature allowed for the Sonoco discharge can be calculated if we take the highest ambient temperature, subtract the allowed changed of 0.3 °C, and add a dilution factor times the allowed change. Or,

$$T_{\text{allowed}} = \text{Threshold criterion} - 0.3 \text{ }^{\circ}\text{C} + (\text{Dilution factor}) * 0.3 \text{ }^{\circ}\text{C}$$

With a dilution factor of 130, the maximum allowed temperature is 39.4 °C. Therefore, the allowed temperature that can be discharged would be 21 °F above the maximum effluent temperature measured for July 2005. The maximum temperature of 39.4 °C is above tolerant level of the micro fauna that inhabit in Sonoco secondary wastewater treatment system. The actual changed in temperature with measured temperature of their effluent, the dilution factor for Sonoco, and receiving water temperature is 0.06 °C. There is no possibility for the company pulp mill to operate at a temperature of 39.4. Therefore, no upper limitation on temperature for the man made elevation of 0.3 °C will be placed in the permit.

A water temperature of 33 °C is the temperature of instantaneous lethality to passing fish. We need to look at the maximum temperature in the receiving water near the point of discharge. The company continuously measure and record the temperature of the effluent from

March 1, 2005 through April 30, 2006. The highest value during this time period was 82 °F. The company informed me that the 82 °F may be erroneous since the mill was shutdown and there wasn't any flow. The 82 °F is equivalent to 27.7 °C. The company meets the temperature of instantaneous lethality to passing fish at the end of the pipe; therefore, no limit is required for temperature to protect the fish as they pass through the plume or to protect the beneficial uses of the White River. However, a continuous monitoring requirement will be placed in the proposed permit.

pH

The White River is currently listed on Ecology's "2004 Water Quality Assessment (Final)" as a Category 5 waterbody in WRIA 10 for pH. The Sonoco paper mill is located in WRIA 10 near the White River. The chronic dilution factor for the Sonoco diffuser was determined in 1995 to be 130. The pH problem on the White River arises from phosphorus discharges below the tailrace rather than discharges of low or high pH.

Ecology is performing a TMDL for phosphorus on the upper White River. When Ecology publishes the TMDL, it will propose water quality-based limits for phosphorus. Discussions with the Ecology lead person on the phosphorus problem indicated that with the maximum flow from Sonoco of 0.397 MGD and the minimum flow of the river, the federal effluent guidelines (40 CFR 430.52 and 40 CFR 430.55 Subpart E) minimum and maximum pH would be sufficient to protect the water quality uses of the White River. The current permit limit is a minimum of 6 SU and a maximum of 9 taken from the effluent guidelines. These limits will be placed in the proposed permit with no exceptions for higher and/or lower pH.

Fecal coliform -- See discussion under "Antidegradation" on page 8 of this factsheet.

Turbidity--The impact of turbidity was evaluated by comparing the turbidity in the effluent and the turbidity of the receiving water. Due to the large degree of dilution, it was determined that the turbidity criteria would not be violated outside the designated mixing zone.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted compliance with the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the discharge: aluminum, iron, manganese, copper, lead, selenium, and zinc. A reasonable potential analysis was conducted on these parameters to determine whether effluent limitations would be required in this permit.

Ecology evaluated the reasonable potential for aluminum, iron, manganese, copper, lead, selenium, and zinc to exceed the water quality criteria with procedures given in EPA, 1991 at the dilution factor determined at critical condition. The parameters we used in the critical condition modeling are as follows: acute dilution factor 15, chronic dilution factor 130, receiving water temperature and copper content were 19.8°C and 1.9 microgram/liter. Hardness was available in USGS 12100500 WHITE RIVER NEAR SUMNER, WA Water Quality Data.htm and from the

TMDL study for the White River reported July 22, 1994 (1996 NPDES permit file) for the Sonoco discharge. The two values were partitioned in accordance with the SONOCO dilution ratio. The resulting hardness was 31 mg/l. Zinc values of the Sonoco's effluent were published in the TMDL data.

No valid ambient background data was available for aluminum, iron, manganese, and selenium. A determination of reasonable potential using zero for background resulted in no reasonable potential. The Permittee is required in S9 of the proposed permit to collect background concentrations near the point of discharge. This information may result in a permit modification or limits in the next renewal.

Water quality criteria for metals in Chapter 173-201A WAC are based on the dissolved fraction of the metal.

The Permittee may provide data clearly demonstrating the seasonal partitioning of the dissolved metal in the ambient water in relation to an effluent discharge. Metals criteria may be adjusted on a site-specific basis when data is available clearly demonstrating the seasonal partitioning in the ambient water in relation to an effluent discharge.

Metals criteria may also be adjusted using the water effects ratio approach established by USEPA, as generally guided by the procedures in USEPA Water Quality Standards Handbook, December 1983, as supplemented or replaced.

Calculations using all applicable data resulted in a determination that there is no reasonable potential for this discharge to cause a violation of water quality standards. This determination assumes that the Permittee meets the other effluent limits of this permit.

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing.

Chronic toxicity tests measure various sublethal toxic responses such as retarded growth or reduced reproduction. Chronic toxicity tests often involve either a complete life cycle test of an organism with an extremely short life cycle or a partial life cycle test on a critical stage of one of a test organism's life cycles. Organism survival is also measured in some chronic toxicity tests.

Acute toxicity tests measure mortality as the significant response to the toxicity of the effluent. Dischargers who monitor their wastewater with acute toxicity tests are providing an indication of the potential lethal effect of the effluent to organisms in the receiving environment.

Accredited WET testing laboratories have the proper WET testing protocols, data requirements, and reporting format. Accredited laboratories are knowledgeable about WET testing and capable of calculating an NOEC, LC₅₀, EC₅₀, IC₂₅, etc. All accredited labs have been provided the most recent version of the Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* which is referenced in the permit. Any

Permittee interested in receiving a copy of this publication may call the Ecology Publications Distribution Center 360-407-7472 for a copy. Ecology recommends that Permittees send a copy of the acute or chronic toxicity sections(s) of their permits to the team leader's laboratory of choice.

Acute and chronic tests conducted during the permit terms showed toxicity:

- The November 8, 2004 sample caused statistically significant reductions in survival at the ACEC and CCEC in the fathead minnow chronic test
- The samples taken on January 7, 2002 and January 11, 2002 produced less than 65% survival in 100% effluent in acute tests.
- The January 7, 2002 and June 24, 2002 samples caused statistically significant reductions in reproduction at the ACEC in the Ceriodaphnia chronic test.
- Reproduction failed at the CCEC in the January 8, 2002 Ceriodaphnia chronic test. Acute tests showed toxicity in January 2002 as described above
- The January 12, 2002 daphnid acute test had 0% survival in 100% effluent.
- The May 7, 2001 sample caused statistically significant reductions in survival and biomass at the ACEC in the fathead minnow chronic test.
- Biomass also failed at the CCEC in the May 2001 fathead chronic test.

Acute toxicity was measured during effluent characterization in the previous permit term. Acute toxicity was found to be at levels that, in accordance with WAC 173-205-050(2) (a), have a reasonable potential to cause receiving water toxicity. An acute toxicity limit is therefore required. The acute toxicity limit is no statistically significant difference in test organism survival between the acute critical effluent concentration (ACEC), 6.66 % of the effluent, and the control.

The acute toxicity limit is set relative to the zone of acute criteria exceedance (acute mixing zone) established in accordance with WAC 173-201A-100. The acute critical effluent concentration (ACEC) is the concentration of effluent existing at the boundary of the acute mixing zone during critical conditions.

Monitoring for compliance with an acute toxicity limit is accomplished by conducting an acute toxicity test using a sample of effluent diluted to equal the ACEC and comparing test organism survival in the ACEC to survival in nontoxic control water. The Permittee is in compliance with the acute toxicity limit if there is no statistically significant difference in test organism survival between the ACEC and the control.

Chronic toxicity was also measured in the previous permit term. Toxicity was found to be at levels that, in accordance with WAC 173-205-050(2) (a), have a reasonable potential to cause receiving water toxicity. A chronic toxicity limit is therefore required. The chronic toxicity limit is no statistically significant difference in test organism response between the chronic critical effluent concentration (CCEC), 0.77 % of the effluent, and the control.

The chronic toxicity limit is set relative to the mixing zone established in accordance with WAC 173-201A-100. The chronic critical effluent concentration (CCEC) is the concentration of effluent existing at the boundary of the mixing zone during critical conditions

Monitoring for compliance with a chronic toxicity limit is accomplished by conducting a chronic toxicity test using a sample of effluent diluted to equal the CCEC and comparing test organism response in the CCEC to organism response in nontoxic control water. The Permittee is in compliance with the chronic toxicity limit if there is no statistically significant difference in test organism response between the CCEC and the control.

WET limit for both the acute and chronic will be place in the proposed permit.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

A determination of the discharge's potential to cause an exceedance of the water quality standards was conducted as required by 40 CFR 122.44(d). The reasonable potential determination was evaluated with procedures given in the Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) and the Department's Permit Writer's Manual (Ecology Publication 92-109, July, 1994). The determination indicated that the discharge has no reasonable potential to cause a violation of water quality standards, thus an effluent limit is not warranted.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100). In the previous permit, the Permittee conducted an analysis of the soil under the aeration basin. The permeability of the berms and native soil at the lagoon site is from 10^{-6} to 10^{-7} cm/sec. The pond has two sides where the surfaces of the surrounding areas are below the elevation of the bottom of the pond. There are no indications of water seeping from the pond. Therefore, no further monitoring will be required at this time.

Comparison of effluent limits with the existing permit issued September 25, 2001

Existing Limits		Proposed Limits	
BOD ₅			
Monthly Average	500 lbs./day	Monthly Average	529 lbs./day
Daily Maximum	673 lbs./day	Daily Maximum	673 lbs./day
TSS			

Existing Limits		Proposed Limits	
Monthly Average	660 lbs./day	Monthly Average	754 lbs./day
Daily Maximum	1,310 lbs./day	Daily Maximum	1,487 lbs./day
Ammonia			
Daily Maximum	1.1 lbs./day	Daily Maximum	1.1 lbs./day
pH	5 – 9 SU	pH	5 – 9 SU

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. The laboratory at this facility is accredited for biochemical oxygen demand (BOD), total suspended solids (TSS), pH, dissolved oxygen. Ammonia and all WET testing are sent to certified laboratories for analysis.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

NON-ROUTINE AND UNANTICIPATED DISCHARGES

Occasionally, this facility may generate wastewater which is not characterized in their permit application because it is not a routine discharge and was not anticipated at the time of application. These typically are waters used to pressure test storage tanks or fire water systems or leaks from drinking water systems. These are typically clean waste waters but may be contaminated with pollutants. The permit contains an authorization for non-routine and unanticipated discharges. The permit requires a characterization of these waste waters for pollutants and examination of the opportunities for reuse. Depending on the nature and extent of pollutants in this wastewater and opportunities for reuse, Ecology may authorize a direct discharge via the process wastewater outfall or through a stormwater outfall for clean water,

require the wastewater to be placed through the facilities wastewater treatment process or require the water to be reused.

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

SOLID WASTE PLAN

The Department has determined that the Permittee has a potential to cause pollution of the waters of the state from leachate of solid waste.

This proposed permit requires, under the authority of RCW 90.48.080, that the Permittee update the solid waste plan designed to prevent solid waste from causing pollution of the waters of the state. The plan must be submitted to the local permitting agency for approval, if necessary, and to the Department.

EFFLUENT MIXING STUDY

The Department has estimated the amount of mixing of the discharge within the authorized mixing zone to determine the potential for violations of the Water Quality Standards for Surface Waters (Chapter 173-201A WAC). The mixing zone evaluation performed in 1995 is considered valid and no further evaluations are required at this time.

OUTFALL EVALUATION

Proposed permit requires the Permittee to conduct an outfall inspection and submit a report detailing the findings of that inspection. The purpose of the inspection is to determine the condition of the discharge pipe and diffusers and to evaluate the extent of sediment accumulations in the vicinity of the outfall.

TREATMENT SYSTEM OPERATING PLAN

In accordance with state and federal regulations, the Permittee is required to take all reasonable steps to properly operate and maintain the treatment system (40 CFR 122.41(e)) and WAC 173-220-150 (1)(g). It has been determined that the implementation of the procedures in the Treatment System Operating Plan is a reasonable measure to ensure compliance with the terms and limitations in the permit. The proposed permit requires the Permittee to update the Treatment System Operating Plan.

CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this proposed permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Washington State Department of Ecology.

FACT SHEET FOR NPDES PERMIT WA-000088-4

Laws and Regulations(<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information
(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

The Department scheduled distribution of a Public Notice of Draft (PNOD) on March 23, 2007, in *the Tacoma News Tribune*. The Notice advises the general public that a draft wastewater discharge permit and fact sheet is available for review. Interested persons are invited to read and evaluate them, and to submit written comments about the permit Ecology proposes to issue to Sonoco. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment (phone the Industrial Section staff in Lacey, at 360/407-6916), at the office address listed below.

Read the documents at the Tacoma Public Library, Reference Desk, at 1102 Tacoma Ave. South; or find them on our website: <http://apps.ecy.wa.gov/industrial/proposed>.

Ecology must receive your comments by close-of-business, April 23, 2007.

Mail written comments to:

Department of Ecology
Don Nelson, Industrial Section
Solid Waste and Financial Assistance
PO Box 47706
Olympia, WA 98504-7600

Deliver written comments to:

Department of Ecology
Headquarters Building
Industrial Section, Bay 3B
300 Desmond Drive SE
Lacey, WA 98503

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will conduct a hearing if we find significant public interest in the permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific sections and text, followed by your concern and proposed modification when possible. Comments may address technical issues, accuracy and completeness of information, and the scope of the permit's proposed coverage; adequacy of the environmental protections afforded by permit conditions, or any other concern about affects that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, 360-407-6940, or by writing to the address listed above. This permit and fact sheet were written by Don Nelson.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART-- An acronym for “all known, available, and reasonable methods of treatment”.

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring --Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over a short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Responsible Corporate Officer-- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at <http://www.ecy.wa.gov>.

APPENDIX D--RESPONSE TO COMMENTS

No comments received in public comment period.