SECTION IN-3

INDUSTRIAL STANDARD PERMITS

Table of Contents

A. Standard Permit Development

These are recommendations for common types of discharges. Use them to facilitate permit writing. **These dischargers may qualify for coverage under the general permit. Permit writers should evaluate the operation to determine whether the general permit is appropriate.**

1. Commercial Laundries

a. Permitting Strategy

All commercial laundries must disinfect their washwater waste. If chlorine is used, then the facility may need to dechlorinate, depending on the chlorine limit calculations. The permit writer should evaluate the application data and develop appropriate effluent limits. The limits presented here are minimum suggested limits. Alternative parameters, limits and monitoring may be necessary because of site-specific water quality issues. Oxygen demanding parameters and dissolved oxygen may be evaluated using the regional model, if the model assumptions are appropriate for the discharge situation in question. If the model assumptions are not appropriate, then a site-specific model should be used.

b. Form 2C Minimum Testing Requirements

The applicant must test for and report all parameters unless a waiver has been requested and granted. The applicant may request and be granted a waiver for all except the following parameters:

1) Table A – BOD, TSS, Flow, pH, Temperature, and Ammonia

2) Table B and C - must provide results for parameters "believed present". All applicants shall provide results for Chlorine and bacteria (*E. coli*, enterococci and fecal coliform – see footnotes below).

c. Suggested Effluent Limitations & Basis

PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow	NA	NL	NA	NL	1/Quarter	Estimate
BOD_5 [a, h]	2	NA	NA	60 mg/L	1/Quarter	Grab
Total Suspended Solids [h]	PJ	NA	NA	60 mg/L	1/Quarter	Grab
E. Coli [e]	1	NA	NA	235 CFU/100 mL	1/6 Months	Grab
Enterococci [f]	1	NA	NA	104 CFU/100 mL	1/6 Months	Grab
Fecal Coliform [g]	1	NA	NA	200 CFU/100 mL	1/6 Months	Grab
Temperature[a, i]	1	NA	NA	32 °C	1/6 Months	Immersion Stabilization
Dissolved Oxygen[a]	1	NA	mg/l	NA	1/Quarter	Grab
Total Residual Chlorine[a,b,d]	1	NA	NA	0.011 mg/L	1/Quarter	Grab
pH (s.u)[a]	1	NA	6.0	9.0	1/Quarter	Grab

Technology-based Limits: Professional Judgement (PJ)
Water Quality-based Limits: 1. Water Quality Standards 2. Other (e.g. wasteload allocation model)
NL = No Limitation, monitoring required NA = Not Applicable

a. Where the Water Quality Standards (9VAC25-260) establish alternate standards for pH, BOD5, DO, TRC and temperature in waters receiving the discharge, those standards shall be, as appropriate, the maximum and minimum effluent limitations.
b. See Part IB for Quantification Levels and reporting instructions.
c. Geometric Mean.
d. See Section IV for chlorine limits determination.
e. Applies only when the discharge is into freshwater (see 9VAC25-260-140 C for the classes of waters and boundary designations).
f. Applies only when the discharge is into saltwater or the transition zone (see 9VAC25-260-140.C for the classes of waters and boundary designations).
g. Applies only when the discharge is into shellfish waters (see 9VAC25-260-160 for the description of what are shellfish waters).
h. Limit given is expressed in two significant figures.
i. The effluent temperature shall not exceed a maximum 32°C for discharges to nontidal coastal and piedmont waters, 31°C for mountain and upper piedmont waters, 21°C for put and take trout waters, or 20°C for natural trout waters. For estuarine waters, nontidal coastal and piedmont waters, mountain and upper piedmont waters, and put and take trout waters, the effluent shall not cause an increase in temperature of the receiving stream of more than 3°C above the natural water temperature. For natural trout waters, the temperature of the effluent shall not cause an increase of 1°C above natural water temperature. The effluent shall not cause the temperature in the receiving stream to change more than 2°C per hour, except in the case of natural trout waters where the hourly temperature change shall not exceed 0.5°C.

See 9VAC25-194-70 for additional effluent limitations and monitoring requirements.

d. Special Conditions

The following special conditions should be included in permits for coin operated laundries. See the Fact Sheet template for rationale and special condition language.

- Chlorine Monitoring and Compliance
- Notification Levels
- Operation and Maintenance Manual Requirement
- Quantification Levels (*Include for water quality-based parameters, if applicable*).
- Monitoring Frequency Reduction (*Do not consider further reduction of the monitoring frequency unless the permittee has demonstrated compliance with all limitations contained within the permit for a minimum of six consecutive months.*)

If the permittee can demonstrate compliance with all limitations contained within this permit for a minimum of six consecutive months, the staff may consider a permit modification to reduce the monitoring frequency to once per quarter.

Quarterly monitoring is the minimum frequency which will be representative of the monitored activity. If the discharge has demonstrated consistent compliance with effluent limitations, then monitoring frequency may be reduced to semi-annually as noted above.

2. Petroleum Storage and Transportation

a. Permitting Strategy

1) Facility Type

The permitting recommendations described below are for wet weather flows from facilities that store petroleum products (bulk oil facilities) and pipeline companies. Effluents from petroleum storage facilities and pipelines have similar characteristics and can be permitted with similar limitations and monitoring requirements. If the facility has dry weather flows, the permit writer should consider different effluent parameters, limits and/or monitoring frequencies. Dry weather flows should have been identified on the permit application or site inspection report. Hydrostatic test discharges are addressed by this guidance.

2) Pipeline Booster Pump Stations

Most booster pump stations discharge into a dry ditch or small stream that provides little or no dilution at the discharge point. If the facility does not have a discharge, no permit is required. If there is a discharge, the permit writer should consider the following options.

Individual Permit

Possible sources of wastewater are:

a) Wash pad water - needs to meet BPJ technology limits for TPH;

b) Contaminated water from manifold yard - needs to meet BPJ technology limits for TPH;

c) Uncontaminated site runoff - no limits at this time; or

d) Hydrostatic test water.

Sources (a) and (b) may be treated by an oil water separator which discharges into a retention basin which also collects (c) and possibly (d). For this type of situation, write permits according to the following guidelines:

Define the oil/water separator effluent as internal Outfall 101 and apply BPJ technology limits for TPH of 15 mg/l maximum. Define the effluent from the retention basin as Outfall 001 and apply any needed water quality standard limits to it. If the discharge is such that significant dilution is available then WQS limits may be calculated for BTEX based on that dilution.

General Permit

If there is stormwater but no discharge of process wastewaters, consideration may be given to coverage under the Industrial Stormwater General Permit. For hydrostatic test water, consideration may be given to coverage under the Petroleum Contaminated Sites and Hydrostatic Tests General Permit.

3) Bulk Oil Facilities - Individual vs General Permit

Bulk oil facilities (SIC Code 5171 with vehicle maintenance) may be covered under a General Stormwater Permit instead of an individual VPDES permit unless antibacksliding prevents converting those with an existing individual permit. If the facility does not qualify for the general permit and vehicle maintenance or equipment cleaning (concrete loading pad cleaning is NOT equipment cleaning) activities take place on site, include the section regarding Stormwater

Management with the individual permit. Vehicle maintenance includes vehicle rehabilitation, mechanical repairs, painting, fueling and lubrication.

4) Tank bottom waters

Tank bottom water discharges should be classified as process wastewater, due to their high level of pollutants. No direct discharge of tank bottom waters is allowed. The permittee who questions this restriction has three options, which should be discussed with them:

(a) Pump and haul with offsite treatment and disposal;

(b) Discharge through a permitted outfall after appropriate treatment in addition to an oil/water separator. The type of treatment is left to the permittee, bearing in mind that the higher degree of treatment would lessen the probability of toxic effects; or

(c) Discharge to a "holding area" for evaporation. The "holding area" may be a pond or diked area which has a 10^{-7} or 10^{-6} cm/sec coefficient of permeability (GM18-2013). This alternative would also require ground water monitoring, which could be part of the VPDES permit or the AST regulation requirements.

For tank bottom waters, an internal outfall with limits for BTEX (benzene, toluene, ethylbenzene, and xylenes), and naphthalene and lead, if applicable, should be established. Virginia Water Quality Standards do not address acute and chronic toxicity for BTEX and naphthalene, thus DEQ has established chronic aquatic toxicity, instream values for these chemicals. The final effluent limits in the VPDES General Permit For Discharges From Groundwater Remediation Of Contaminated Sites, Dewatering Activities Of Contaminated Sites, And Hydrostatic Tests (Petroleum Disharges GP), VAG83 are established as instream values and should be used as permit maximums. The general permit limits assume zero dilution in the receiving stream. Where dilution exists, the limits can be adjusted as long as the resulting mix will not exceed the instream values listed.

5) Groundwater Monitoring

The purpose of a ground water monitoring program is to determine if activities at the site are resulting in violations of the Board's Groundwater Standards. The groundwater monitoring program should concentrate on at least the two following parameters: Total Petroleum Hydrocarbons (TPH) and Total Organic Carbon (TOC).

These parameters should provide an indication of the presence and amount of pollution, plus numeric values with which a comparison can be made, to evaluate the need for remediation. Groundwater monitoring at jobber type oil facilities is optional and should be evaluated on a case-by-case basis.

Note: Omit this requirement for facilities subject to a groundwater monitoring plan requirement as part of the AST, ODCP regulations (having $\geq$ 1 million gallon aggregate storage capacity).

6) Whole Effluent Toxicity Program (WET)

Monitoring for the WET Program is required for facilities that are large bulk oil storage or distribution centers and for pipeline terminals. Smaller, petroleum jobber-type storage facilities that provide petroleum products to end consumers

may need a WET Program, depending on various factors, including the site characteristics (presence of oil/water separators, etc), age and condition of facilities, and past performance.

7) Hydrostatic Tank Testing

If it is anticipated that hydrostatic testing will be performed and a discharge produced, include a limit for TPH. If hydrostatic test discharges will occur more than once every three years, the permit writer should consider including limits for BTEX parameters similar to those in the Petroleum Discharges General Permit, VAG83. Depending on site characteristics and the potential for public concern, the permit can include a requirement for notification of and approval from the DEQ Regional Office prior to the discharge actually taking place.

Address hydrostatic tank testing discharges either as a special condition or label the discharge as an internal outfall and limit it on a separate Part I.A page. In order to avoid problems with CEDS, these infrequent discharges may be better handled in special conditions rather than as internal outfalls. Internal outfalls require monthly DMRs whereas special condition reporting can be on a per discharge basis. In either case, the limits are only applicable when there is a discharge of hydrostatic test water.

b. Form 2C Minimum Testing Requirements

(For process water discharge [tank bottom waters, hydrostatic test waters, loading rack washdown waters]) The applicant must test for and report all parameters unless a written waiver request has been submitted and granted. The applicant may request and be granted a waiver for all except the following parameters:

(1) Table A - BOD, TSS, Flow, pH, Temperature, and Ammonia (2)

(2) Table B - must provide results for Oil & Grease and any other parameters "believed present"

(3) Part C - must provide results for any parameters "believed present". Office of VPDES Permits recommends testing for BTEX.

c. Form 2F Minimum Testing Requirements

(For point source discharge of stormwater associated with industrial activity)

(1) Table A - must test for and report all parameters listed

(2) Table B C - must provide results for any parameters "believed present".

(3) Part D - must provide storm event data corresponding to the maximum daily values for the flow-weighted composite sample reported in Parts A, & C.

d. Suggested Effluent Limitations & Basis

These limits assume the discharge is treated with a minimum treatment technology comparable to an oil/water separator (applicable to tank bottom waters and loading rack washdown waters).

PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow	NA	NL	NA	NL	1/M	Estimate
TPH (mg/L)	PJ	NL	NA	15	1/M	Grab
pH (s.u.)	3	NA	*	*	1/M	Grab

Technology-based Limits: PJ
Water Quality-based Limits: 1. Water Quality Standards
* Establish pH limits that will maintain water quality standards in the receiving stream

NL = No Limitation, monitoring required
NA = Not Applicable

a. The effluent shall be free of sheens. There shall be no discharge of floating solids or visible foam in other than trace amounts.
b. There shall be no discharge of tank bottom waters
c. All samples shall be collected from the discharge resulting from a storm event. The grab samples shall be taken during the first 3 hours of discharge.

Hydrostatic Test Waters are subject to the following effluent limitations and monitoring requirements:

PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow	NA	NL	NA	NL	1/Discharge	Estimate
pH (SU)	1	NA	6.0	9.0	1/Discharge	Grab
TPH (mg/L) [a]	PJ	NL	NA	15	1/Discharge	Grab
TOC (mg/L)	PJ	NA	NA	NL	1/Discharge	Grab
TRC (mg/L) [b]	PJ	NL	NA	0.011	1/Discharge	Grab
TSS (mg/L)	NA	NL	NA	NL	1/Discharge	Grab

Technology-based Limits: PJ
NL = No Limitation, monitoring required
NA = Not Applicable

a. TPH is the sum of individual gasoline range organics and diesel range organics or TPH-GRO and TPH-DRO to be measured by EPA SW 846 Method 8015C (2000) or EPA SW 846 Method 8015C (2007) for gasoline and diesel range organics, or by EPA SW 846 Methods 8260B (1996) and 8270D (2014) or 8270E (2018).
b. Total residual chlorine limitation of 0.011 mg/l and chlorine monitoring only apply to discharges of test water that have been chlorinated or come from a chlorinated water supply. All data below the quantification level (QL) of 0.1 mg/L shall be reported as "<QL."
c. The effluent shall be free of sheens. There shall be no discharge of floating solids or visible foam in other than trace amounts.
d. See Part I B for Quantification Levels and reporting instructions.
e. The equipment being tested shall be substantially free of debris, raw material, product, or other residual materials.
f. The discharge flow shall be managed to control the volume and velocity of the discharge, including peak flow rates and total volume, to minimize erosion at outlets, and to minimize downstream channel and stream bank erosion.

e. Special Conditions

The following special conditions should be included in permits for petroleum storage or transportation facilities:

- Notification Levels
- Materials Handling/Storage
- Operation and Maintenance Manual Requirement
- Whole Effluent Toxicity Testing
- Water Quality Criteria Monitoring on a case-by-case basis

- Quantification Levels (*Include for water quality-based parameters, if applicable. Adapt for BTEX, lead and naphthalene*)
- Groundwater Monitoring Program

Oil Storage Ground Water Monitoring Reopener (*for facilities covered under UST or AST program*) As this facility currently manages ground water in accordance with 9 VAC 25-91-10 et seq., the Facility and Aboveground Storage Tank Regulation, this permit does not presently impose groundwater monitoring requirements. However, this permit may be modified or alternately revoked and reissued to include ground water monitoring not required by this regulation.

Hydrostatic Testing (*this special condition is required for hydrostatic testing if it is not set up as an internal outfall on a Part I A. page*). **[***Include this part if necessary:* The permittee shall obtain approval from the DEQ Regional Office forty-eight hours in advance of any discharge resulting from hydrostatic testing. The conditions of approval will be contingent on the volume and duration of the proposed discharge, and the nature of the residual product.**]** Every discharge of hydrostatic testing waters shall be monitored and limited as specified below. Sampling will be required for characterization of the "first flush", as a minimum. Report results with the DMR for the month in which hydrostatic testing and sampling occurred. Such discharges shall be limited as follows:

PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow	NA	NL	NA	NL	1/Discharge	Estimate
pH (SU)	1	NA	6.0	9.0	1/Discharge	Grab
TPH (mg/L) [a]	PJ	NL	NA	15	1/Discharge	Grab
TOC (mg/L)	PJ	NA	NA	NL	1/Discharge	Grab
TRC (mg/L) [b]	PJ	NL	NA	0.011	1/Discharge	Grab
TSS (mg/L)	NA	NL	NA	NL	1/Discharge	Grab

Technology-based Limits: PJ
NL = No Limitation, monitoring required
NA = Not Applicable

a. TPH is the sum of individual gasoline range organics and diesel range organics or TPH-GRO and TPH-DRO to be measured by EPA SW 846 Method 8015C (2000) or EPA SW 846 Method 8015C (2007) for gasoline and diesel range organics, or by EPA SW 846 Methods 8260B (1996) and 8270D (2014) or 8270E (2018).
b. Total residual chlorine limitation of 0.011 mg/l and chlorine monitoring only apply to discharges of test water that have been chlorinated or come from a chlorinated water supply. All data below the quantification level (QL) of 0.1 mg/L shall be reported as "<QL."
c. The effluent shall be free of sheens. There shall be no discharge of floating solids or visible foam in other than trace amounts.
d. See Part I B for Quantification Levels and reporting instructions.
e. The equipment being tested shall be substantially free of debris, raw material, product, or other residual materials.
f. The discharge flow shall be managed to control the volume and velocity of the discharge, including peak flow rates and total volume, to minimize erosion at outlets, and to minimize downstream channel and stream bank erosion.

Rationale: (*See the Fact Sheet for the VPDES general permit for Discharges from Petroleum Contaminated Sites)*

3. Pulp and Paper Mills

a. Permitting Strategy

The April 15, 1998, Federal Register published a final rule, commonly referred to as the "Cluster Rule", promulgating new effluent limitations guidelines and national emission standards for hazardous air pollutants for the pulp and paper industry. The water portion of the rule reorganized the existing guidelines but the effluent limitations for most of the previously identified subcategories, and conventional pollutants for all subcategories, have not changed. New BAT effluent limitations under 40 CFR Part 430 were promulgated for the two subcategories Subpart B "Bleached Papergrade Kraft and Soda" and Subpart E "Papergrade Sulfite". In this rule EPA also introduced a "Voluntary Advanced Technology Incentives Program" (VATIP) whereby a mill was given more time to meet BAT limitations, and various other incentives, in exchange for accepting more stringent BAT limitations than the BAT "baseline" limitations.

The BAT effluent limitations guidelines are for dioxin, furan, chloroform and 12 chlorinated phenolics at the bleach plant (internal outfall), and for Adsorbable Organic Halides (AOX) at end of pipe.

Internal Bleach Plant Outfall: Dioxin, furan, chloroform and 12 chlorinated phenolics should be monitored once per year. End of Pipe Outfall: AOX, COD and water quality-based dioxin should be monitored once per month. When dioxin is being monitored internally at a monthly interval it is recommended that the end of pipe monitoring be reduced from monthly to quarterly. When the internal dioxin monitoring frequency is reduced to less than monthly, the end of pipe monitoring should be set back to monthly.

Chloroform - Chloroform is an extremely volatile compound that is generated during the bleaching of pulp with hypochlorite, chlorine, or chlorine dioxide. Hypochlorite bleaching results in the greatest amount of chloroform generation while chlorine dioxide bleaching results in the least amount of chloroform generation. As chloroform is generated, it partitions to air and to bleach plant effluent (though, some of the chloroform remains with the pulp). Any chloroform found in bleach plant effluent that is not emitted to the air prior to reaching the wastewater treatment plant is volatilized and degraded during secondary treatment.

2,3,7,8-TCDD (Dioxin) and 2,3,7,8-TCDF (Furan) - The dioxin congener consists of two benzene rings connected by two oxygen bridges. There are eight positions where substitution of hydrogen atoms by other atoms or by organic or inorganic radicals can occur. 2,3,7,8-TCDD is one of 75 dioxin congeners and is the most toxic. The chlorinated dibenzofurans have similar 4-2 structure, but have only one oxygen bridge rather than two. 2,3,7,8-TCDF is the most toxic of 135 chlorinated dibenzofurans. During the late 1980s, bleaching with chlorine and hypochlorite were discovered to be sources of dioxin and furan. Although use of chlorine dioxide (ClO) bleaching minimizes the formation of 2 chlorinated pollutants, measurable quantities of 2,3,7,8-TCDF and possibly 2,3,7,8-TCDD may still be formed. Dioxin and furan are not effectively degraded during wastewater treatment; they partition either to sludge or pass into receiving waters untreated.

Chlorinated Phenolic Compounds - Chlorinated phenolic compounds include phenols, guaiacols, catechols, and vanillins substituted with from one to five chlorine atoms per molecule. Typically, bleaching processes that result in the formation of 2,3,7,8-TCDD and 2,3,7,8-TCDF also generate the higher substituted tri-, tetra-, and

penta-chlorinated compounds. EPA established effluent limitations guidelines and pretreatment standards for the following 12 chlorinated phenolic compounds:

4-Trichlrosyringol

3,4,5-Trichlorocatechol

3,4,6-Trichlorocatechol

3,4,5-Trichloroguaiacol

3,4,6-Trichloroguaiacol

4,5,6-Trichloroguaiacol

2,4,5-Trichlorophenol

2,4,6-Trichlorophenol

Tetrachlorocatechol

Tetrachloroguaiacol

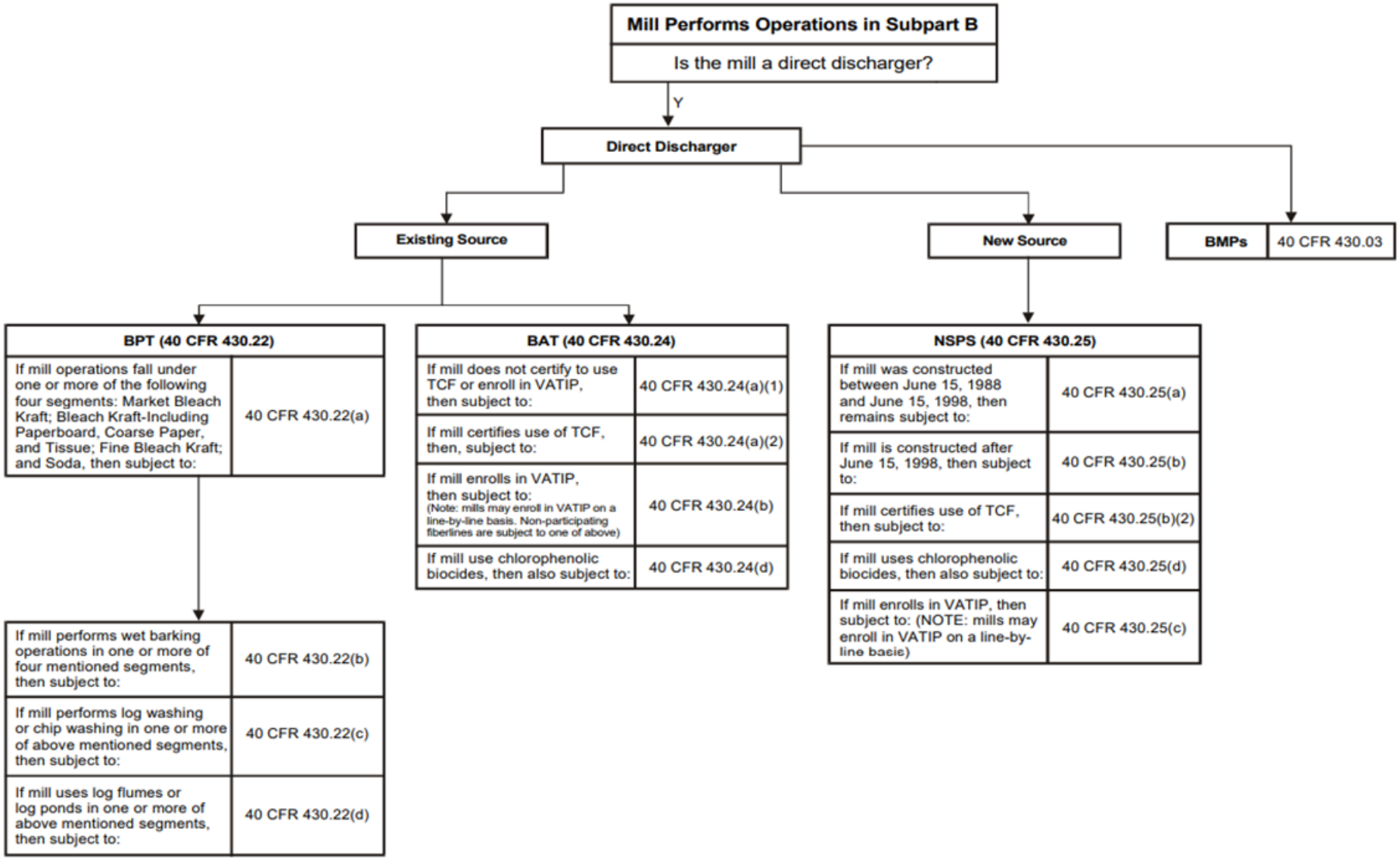
2,3,4,6-Tetrachlorophenol

Pentachlorophenol

Secondary treatment can generally achieve about 50% removal of these compounds.

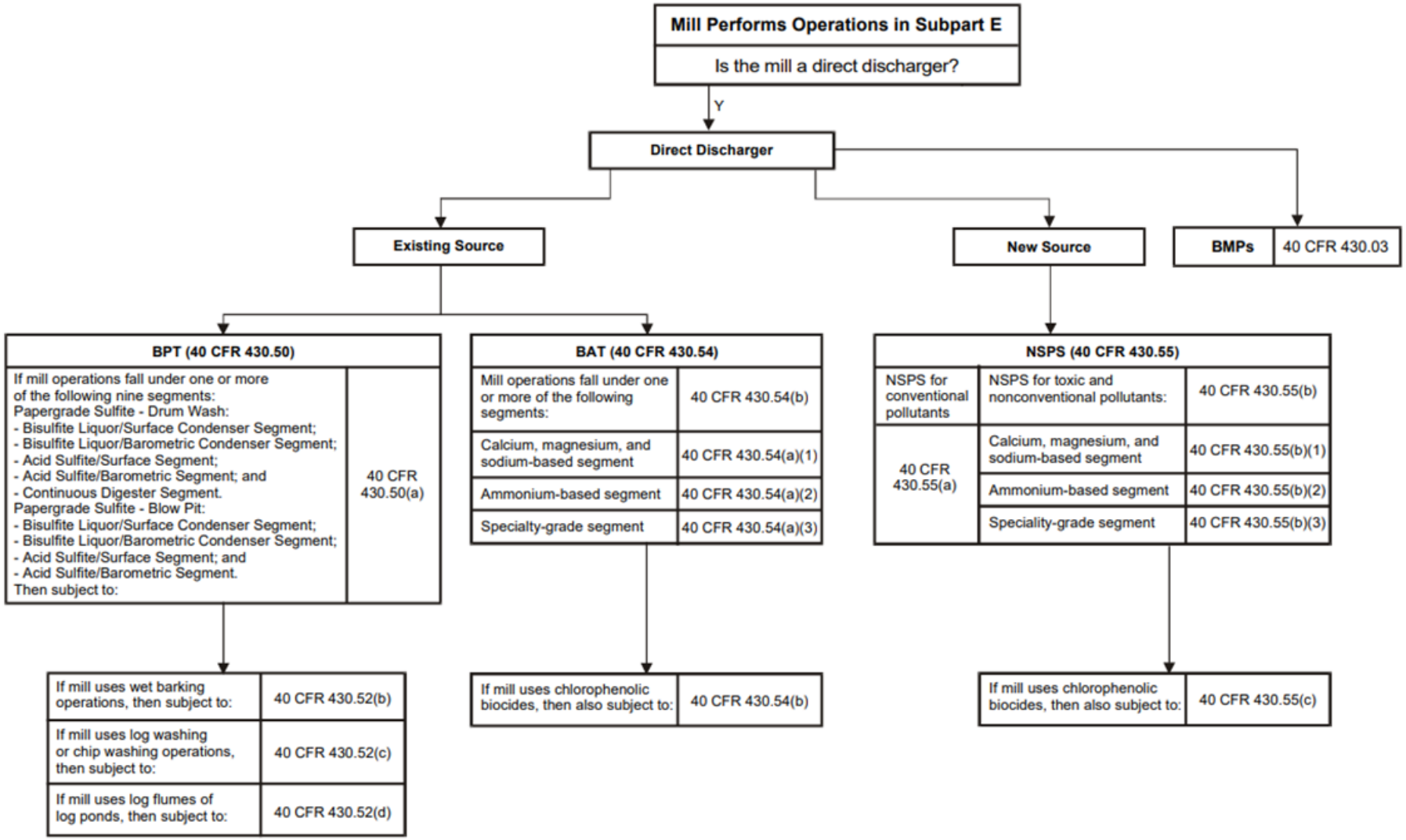
Adsorbable Organic Halides (AOX) - AOX is a measure of the total amount of halogens (chlorine, bromine, and iodine) bound to dissolved or suspended organic matter in a wastewater sample. In the effluent of Subpart B and E mills, essentially all of the AOX is chlorinated compounds formed during bleaching with chlorine and other chlorinated bleaching agents. Inefficient application of chlorine-containing bleaching chemicals can generate increased levels of AOX. Minimizing AOX will usually have the effect of reducing the generation of chloroform, 2,3,7,8-TCDD, 2,3,7,8-TCDF, and chlorinated phenolic compounds. Some AOX is biodegraded during secondary treatment. Chemical Oxygen Demand (COD). COD is a measure of the quantity of chemically oxidizable material present in wastewater. Sources of COD include the pulping area, recovery area, bleaching area, and papermaking area. A portion of COD is readily biodegradable while the rest is resistant to biodegradation (i.e., "refractory"). The refractory portion is derived from spent pulping liquor (i.e., kraft mill "black liquor" or sulfite mill "red liquor"), thus, COD biodegradability indicates the degree to which spent pulping liquor is recovered from brown stock pulp. Wastewater COD loads also correlate with discharges of toxic organic pollutants that are not readily biodegraded. (Note: EPA has not established COD ELG&S; however, EPA plans to do so in a future rulemaking.).

Exhibit IN-3-1. Applicability of Subpart B Standards[1]



[1] Permit Guidance Document Pulp, Paper and Paperboard Manufacturing Point Source Category (40 CFR §430), https://www.epa.gov/sites/default/files/2015-10/documents/pulp-paper_permit-guidance_2000.pdf

Exhibit IN-3-2. Applicability of Subpart E Standards[2]



[2] Permit Guidance Document Pulp, Paper and Paperboard Manufacturing Point Source Category (40 CFR §430), https://www.epa.gov/sites/default/files/2015-10/documents/pulp-paper_permit-guidance_2000.pdf

(1) Compliance Point

The regulation requires mills to demonstrate compliance with limitations at the point where wastewater leaves the bleach plant, as well as at the point where they discharge their treated effluent to the receiving stream (for direct dischargers).

> Some mills operate several individual fiber lines and associated bleach plants. As a result, these mills must meet limits for pollutants with bleach plant effluent limits for each individual fiber line bleaching plant.

Under 40 CFR 430, a direct discharger must demonstrate compliance with the limits for TCDD, TCDF, 12 chlorinated phenolic pollutants, and chloroform at the point where the wastewater containing these pollutants leaves the bleach plant from each individual fiber line before being combined with process wastewaters or noncontact cooling water from other operations. (EPA refers to these in-process limits as "bleach plant effluent limits"). EPA determined that bleach plant effluent limits are necessary for these pollutants because chemical pulp bleaching is the principal source of these pollutants; the effluent from a mill's bleach plant is typically combined with other process wastewater and noncontact cooling water prior to treatment and discharge. Because of this, you would not be able to accurately assess compliance at the final mill effluent due to dilution with other mill wastewaters. In addition, bleach plant limits for chloroform are necessary because there is potential for volatilization and loss in mill sewer systems. For AOX, however, direct discharge mills must comply with end-of-pipe limits at the point where the final mill process wastewater effluent is discharged to receiving waters (i.e., at the end of the pipe).

(2) Best Management Practices

The federal rule specifies BMP's that are to be implemented by all paper mills.

Recommendation: The BMP language in Section 3.b has been edited and formatted for a VPDES permit. It is recommended that permit writers insert these into the paper mill permits. Note that the BMP's include a schedule for attainment of certain goals. Any of the dates in the schedule that have passed upon this reissuance of the permit should be changed to the effective date. Also, the permit writer should insert an annual reporting date (the effective date anniversary is appropriate) for submittal of the BMP report.

(3) Bleach Plant Sampling Protocol

EPA states in the preamble to the rules that the bleach plant sample should be a flow-proportioned composite of separate samples of the acid and alkaline discharges resulting in one bleach plant sample for analysis. (They also say, however, that they did not use this protocol in the sampling program from which limits were developed, and if the mills wish to collect separate samples of acid and alkaline discharges that is acceptable. Further clarification is not given.) There are also specific requirements for chloroform sampling.

Recommendation: For sample type for bleach plant effluent parameters indicate the generic "Composite" ("COMP" in CEDS) and via footnote/special

condition describe the sampling requirements. The attached sampling methodology special condition is recommended for that purpose.

(4) Other Considerations

Since the new bleach plant effluent guideline limits are mostly in terms of minimum levels (essentially quantification levels) which are specified in the federal rule it is recommended that a special condition for compliance reporting be included in the permit. An example is attached.

The permit writers are reminded that caution should be used in incorporating the new requirements into the permits such that no exceedances of water quality criteria are inadvertently authorized by the internal limits (criteria exist for dioxin, chloroform, 2,4,6 triclorophenol and pentachlorophenol), and that special conditions regarding reduced monitoring, etc. are worded such that they are not permit self-modifying conditions.

b. Best Management Practices for Pulp and Paper Mills

Best Management Practices (BMPs) are used in permits to require the permittee to control or abate pollution by means other than typical wastewater treatment. BMPs can be used in lieu of effluent limits when effluent limits alone are not sufficient to achieve the intent of the Law or when effluent limits are not feasible.

The pulp and paper BMPs are applicable to all discharges from pulp, paper and paperboard mills with pulp production in the Bleached Papergrade Kraft and Soda industrial category (40 CFR 430 Subpart B) and the Papergrade Sulfite industrial category (40 CFR 430 Subpart E). Permits for discharges in these categories should contain these requirements.

Special Conditions Language

(Note that there are several cross references to other parts of the permit in this special condition that will have to be changed based on the numbering system used by the permit writer.)

Best Management Practices (BMPs) for Spent Pulping Liquor, Soap and Turpentine Management, Spill Prevention and Control

1) Specialized definitions

a) Action Level: A daily pollutant loading that when exceeded triggers investigative or corrective action.

b) Equipment Items: Any process vessel, storage tank, pumping system, evaporator, heat exchanger, recovery furnace or boiler, pipeline, valve, fitting, or other device that contains, processes, transports, or comes into contact with spent pulping liquor, soap, or turpentine.

c) Immediate Process Area: The location at the mill where pulping, screening, knotting, pulp washing, pulping liquor concentration, pulping liquor processing, and chemical recovery facilities are located, including spent pulping liquor storage and spill control tanks wherever located at the mill.

d) Intentional Diversion: The planned removal of spent pulping liquor, soap, or turpentine from equipment items in spent pulping liquor, soap, or turpentine service by the mill for any purpose including, but not limited to, maintenance, grade changes, or process shutdowns.

e) Senior Technical Manager: The person designated by the permittee to review the BMP Plan. The senior technical manager shall be the chief engineer at the mill, the manager of pulping and chemical recovery operations, or other such responsible person who has knowledge of and responsibility for pulping and chemical recovery operations.

f) Soap: The product of reaction between the alkali in kraft pulping liquor and fatty acid portions of the wood, which precipitate out when water is evaporated from the spent pulping liquor.

g) Spent Pulping Liquor: Black liquor that is used, generated, stored, or processed at any point in the pulping and chemical recovery processes.

h) Turpentine: A mixture of terpenes, principally pinene, obtained by the steam distillation of pine gum recovered from the condensation of digester relief gases from the cooking of softwoods by the kraft pulping process. Sometimes referred to as sulfate turpentine.

2) Requirement to implement Best Management Practices

The Best Management Practices (BMPs) specified in Part I.[**C.]**2. (a) through (j) must be developed according to best engineering practices and must be implemented in a manner that takes into account the specific circumstances at this mill. The BMPs are as follows:

a) The permittee must return spilled or diverted spent pulping liquors, soap, and turpentine to the process to the maximum extent practicable as determined by the mill, recover such materials outside the process, or release spilled or diverted material at a rate that does not disrupt the receiving wastewater treatment system.

b) The permittee must establish a program to identify and repair leaking equipment items. This program must include: (i) Regular visual inspections of process areas with equipment items in spent pulping liquor, soap, and turpentine service; (ii) Immediate repair of leaking equipment items. Leaking equipment items that cannot be repaired during normal operations must be identified, temporary means for mitigating the leaks provided, and the leaking equipment items repaired during the next maintenance outage; (iii) Identification of conditions under which production will be curtailed or halted to repair leaking equipment items or to prevent pulping liquor, soap, and turpentine leaks and spills; and (iv) A means for tracking repairs over time to identify those equipment items where upgrade or replacement may be warranted based on the frequency and severity of leaks, spills, or failures.

c) The permittee must operate continuous, automatic monitoring systems that are determined necessary by the mill to detect and control leaks, spills, and intentional diversions of spent pulping liquor, soap, and turpentine. These monitoring systems should be integrated with the mill process control system and may include high level monitors and alarms on storage tanks; process area conductivity or pH monitors and alarms; and process area sewer, process wastewater, and wastewater treatment plant conductivity or pH monitors and alarms.

d) The permittee must establish a program of initial and refresher training of operators, maintenance personnel and other technical and supervisory personnel who have responsibility for operating, maintaining, or supervising

the operation and maintenance of equipment items in spent pulping liquor, soap, and turpentine service. The refresher training must be conducted at least annually. The training program must be documented.

e) The permittee must prepare a report that evaluates each spill or intentional diversion of spent pulping liquor, soap, or turpentine that is not contained at the immediate process area. The report must describe the equipment items involved, the circumstances leading to the incident, the effectiveness of the corrective actions taken to contain and recover the spill or intentional diversion and plans to develop changes to equipment and operating and maintenance practices as necessary to prevent recurrence. Discussion of the reports must be included as part of the annual refresher training.

f) The permittee must establish a program to review any planned modifications to the pulping and chemical recovery facilities and any construction activities in the pulping and chemical recovery areas before these activities commence. The purpose of such review is to prevent leaks and spills of spent pulping liquor, soap, and turpentine during the planned modifications, and to ensure that construction and supervisory personnel are aware of possible liquor diversions and of the requirement to prevent leaks and spills of spent pulping liquors, soap, and turpentine during construction.

g) The permittee must install and maintain secondary containment (i.e., containment constructed of materials impervious to pulping liquors) for spent pulping liquor bulk storage tanks equivalent to the volume of the largest tank plus sufficient freeboard for precipitation. An annual tank integrity testing program, if coupled with other containment or diversion structures, may be substituted for secondary containment for spent pulping liquor bulk storage tanks.

h) The permittee must install and maintain secondary containment for turpentine bulk storage tanks.

i) The permittee must install and maintain curbing, diking or other means of isolating soap and turpentine processing and loading areas from the wastewater treatment facilities.

j) The permittee must conduct wastewater monitoring to detect leaks and spills, to track the effectiveness of the BMPs, and to detect trends in spent pulping liquor losses. Such monitoring must be performed in accordance with Part I.[**C**.]8.

3) Requirement to develop a BMP Plan

a) The permittee must prepare and implement a BMP Plan that is based on a detailed engineering review as described in Part I.[**C.**]3. (b) and (c), and that specifies the procedures and the practices required to meet the requirements of Part I.C.2., what construction the permittee determines is necessary to meet those requirements including a schedule for such construction, and the monitoring program (including the statistically derived action levels) that will be used to meet the requirements of Part I.[**C**.]8. The BMP Plan also must specify the period of time that the permittee determines the action levels established under Part I.[**C**.]7. may be exceeded without triggering the responses specified in Part I.[**C.**]8.

b) The permittee must conduct a detailed engineering review of the pulping and chemical recovery operation including but not limited to process equipment, storage tanks, pipelines and pumping systems, loading and unloading facilities, and other appurtenant pulping and chemical recovery equipment items in spent pulping liquor, soap, and turpentine service for the purpose of determining the magnitude and routing of potential leaks, spills, and intentional diversions of spent pulping liquors, soap, and turpentine during the following periods of operation: (i) Process start-ups and shut downs; (ii) Maintenance; (iii) Production grade changes; (iv) Storm or other weather events; (v) Power failures; and (vi) Normal operations.

c) As part of the engineering review, the permittee must determine whether existing spent pulping liquor containment facilities are of adequate capacity for collection and storage of anticipated intentional liquor diversions with sufficient contingency for collection and containment of spills. The engineering review must also consider: (i) The need for continuous, automatic monitoring systems to detect and control leaks and spills of spent pulping liquor, soap, and turpentine; (ii) The need for process wastewater diversion facilities to protect wastewater treatment facilities from adverse effects of spills and diversions of spent pulping liquors, soap, and turpentine; (iii) The potential for contamination of storm water from the immediate process areas; and (iv) The extent to which segregation and/or collection and treatment of contaminated storm water from the immediate process areas is appropriate.

4) Amendment of BMP Plan

a) The permittee must amend the BMP Plan whenever there is a change in mill design, construction, operation, or maintenance that materially affects the potential for leaks or spills of spent pulping liquor, turpentine, or soap from the immediate process areas.

b) The permittee must complete a review and evaluation of the BMP Plan five years after the first BMP Plan is prepared and, except as provided in Part I.[**C**.]4. (a), once every five years thereafter. As a result of this review and evaluation, the permittee must amend the BMP Plan within three months of the review if the permittee determines that any new or modified management practices and engineered controls are necessary to reduce significantly the likelihood of spent pulping liquor, soap, and turpentine leaks, spills, or intentional diversions from the immediate process areas, including a schedule for implementation of such practices and controls.

5) Review and certification of BMP Plan

The BMP Plan, and any amendments thereto, must be reviewed by the senior technical manager at the mill and approved and signed by the permittee in accordance with Part II.K., certifying that the plan and any amendments thereto have been prepared in accordance with this permit.

6) Record keeping requirements

a) A complete copy of the current BMP Plan and the records specified in Part I.[**C**.]6.(b) must be maintained at the mill and made available to the Department for review upon request.

b) The permittee must maintain the following records for three years from the date they are created: (i) Records tracking the repairs performed in accordance with

the repair program described in Part I.[**C**.]2. (b) ; (ii) Records of initial and refresher training conducted in accordance with Part I.[**C**.]2. (d); (iii) Reports prepared in accordance with Part I.[**C**.]2. (e); and (iv) Records of monitoring required by Parts I.[**C**.]2. (j) and I.[**C.**]8.

7) Establishment of wastewater treatment system influent action levels

a) The permittee must conduct a monitoring program, described in Part I.[**C**.]7. (b), for the purpose of defining wastewater treatment system action levels, described in Part I.[**C**].7. (c), that will trigger requirements to initiate investigations on BMP effectiveness and to take corrective action.

b) The permittee must employ the following procedures in order to develop the action levels required by Part I.[**C**.]7.: (i) Monitoring parameters. The permittee must collect 24-hour composite samples and analyze the samples for a measure of organic content (e.g., Chemical Oxygen Demand (COD) or Total Organic Carbon (TOC)). Alternatively, the permittee may use a measure related to spent pulping liquor losses measured continuously and averaged over 24 hours (e.g., specific conductivity or color). (ii) Monitoring locations. Monitoring must be conducted at the point influent enters the wastewater treatment system. For the purposes of this requirement, the permittee may select alternate monitoring points in order to isolate possible sources of spent pulping liquor, soap, or turpentine from other possible sources of organic wastewaters that are tributary to the wastewater treatment facilities (e.g., bleach plants, paper machines and secondary fiber operations).

c) By the date prescribed in Part I.[**C**.]9. (c) below, the permittee must complete an initial six-month monitoring program using the procedures specified in Part I.[**C.**]7. (b) and must establish initial action levels based on the results of that program. The action levels must be determined by a statistical analysis of six months of daily measurements. The action levels must consist of a lower action level which if exceeded will trigger investigation requirements and an upper action level which if exceeded will trigger corrective action requirements, as described in Part I.[**C.**]8.

d) By the date prescribed in Part I.[**C**].9. (f), the permittee must complete a second six-month monitoring program using the procedures specified in Part I.**[C.**]7. (b) and must establish revised action levels based on the results of that program. The initial action levels shall remain in effect until replaced by revised action levels.

e) Action levels developed under this paragraph must be revised using six months of monitoring data after any change in mill design, construction, operation, or maintenance that materially affects the potential for leaks or spills of spent pulping liquor, soap, or turpentine from the immediate process areas.

8) Monitoring, corrective action, and reporting requirements

(a) The permittee must conduct daily monitoring of the influent to the wastewater treatment system in accordance with the procedures described in Part I.[**C.**]7. (b) for the purpose of detecting leaks and spills, tracking the effectiveness of the BMPs, and detecting trends in spent pulping liquor losses.

(b) Whenever monitoring results exceed the lower action level for the period of time specified in the BMP Plan, the permittee must conduct an investigation to determine the cause of such exceedance. Whenever monitoring results

exceed the upper action level for the period of time specified in the BMP Plan, the permittee must complete corrective action to bring the wastewater treatment system influent mass loading below the lower action level as soon as practicable.

(c) Although exceedances of the action levels will not constitute permit violations, failure to take the actions required by Part I.[**C**.]8. (b) will be a permit violation.

(d) The permittee must report to the Department annually by [permit writer insert date] the results of the daily monitoring conducted pursuant to Part I.[**C.**]8. (a). Such reports must include a summary of the monitoring results, the number and dates of exceedances of the applicable action levels, and brief descriptions of any corrective actions taken to respond to such exceedances.

4. Shipyards and Vessel Repair Facilities

a. Permitting Strategy

Most shipyards have the potential to generate various types of wastewater as well as precipitation runoff potentially contaminated by industrial activities. Wastewaters that could be observed at these locations include, but are not limited to: treated sanitary wastewaters, contact/non-contact cooling water, hull preparation and other process wastewaters, water used for testing ship's equipment and structural integrity, water treatment plant discharges, contaminated and uncontaminated bilge and ballast waste(s) and wastewaters. A shipyard also may have an activity addressed by a promulgated Federal Effluent Guideline, such as a metal finishing operation or centralized wastewater treatment. Most of the above discharges are handled as they would be in any VPDES permit.

Discharges that are unique to shipyards are mostly those that involve contamination of storm or surface waters from shipyard activities. Permitting efforts addressing these shipyard activities have evolved from implementation of water pollution control plans (WPCP) to the use of discrete best management practices (BMPs) initially promoted by EPA in their Development Document for Proposed Effluent Limitations Guidelines and Standards for the Shipbuilding and Repair Point Source Categories (1979) and further developed specifically for VPDES permits by DEQ in Best Management Practices Manual for the Shipbuilding and Repair Industry. These shipyard specific BMPs have been modified to some degree based on regional experience with the industry. These BMPs, as listed below, should be incorporated into individual VPDES permits issued to shipyards, and should be supported by periodic effluent monitoring to insure control of the release of pollutants to the environment.

The permit writer should closely review the application and perform as many site inspections as may be required to adequately determine the scope of the permittee's operations, and effluent monitoring and other permitting requirements that may be necessary.

In general, there are three discrete sources of wastewater.

(1) Process wastewaters associated with hull preparation activities

These wastewaters are generated once a vessel is hauled from the water to remove gross fouling, slimes, mud and salts that remain on the hull. Additional wastewaters are generated during later hull-preparation activities to re-profile existing coatings, and to achieve the partial or complete removal of coatings prior to inspection, repair and/or re-coating the vessel with anti-corrosives and/or anti-foulants. For the purpose of this section, process wastewater is defined as *any water used on a vessel's hull for any purpose, including, but not limited to the activities of removing marine salts, marine growth, sediments and paint or other hull cleaning activities using water such as preparing hull areas for inspection or work (e.g., cutting, welding, grinding).*

(2) Potentially contaminated stormwater runoff associated with an industrial activity

Industrial activities conducted at shipyards and other vessel repair and maintenance facilities are addressed by one or more SIC codes, including 4499, 3731, and/or 3732. As most shipyard and vessel repair activities are performed in the open (shore-side areas, marine and Crandall railways, floating drydocks, graving docks, etc.) and since metals, solvents and conventional pollutants are

typically present throughout the shipyard environment, some level of stormwater monitoring should be considered. Based on information presented in the application and/or derived elsewhere, the monitoring of representative storm water discharges should be required as appropriate.

(3) Treated tributyltin (TBT) wastewater discharges

This wastewater has been defined as:

- Process wastewater generated during repair and maintenance of surfaces coated with TBT anti-foulants;
- Precipitation (rainfall/snowmelt) that commingles with process wastewaters;
- Sonar dome water containing TBT; or
- Any other waters that may contain a detectable TBT residue.

The Department has developed a permitting strategy specific to the issue of TBT and its presence at shipyards as a result of their process activities. This permitting approach is described below.

For any of the above discharges, include water quality-based limitations in Part I.A of the permit as needed to maintain water quality standards, based on information provided in the permit application and from other sources. Storm event monitoring is documented on the DMR. A summary of the parameters for Part I.A for storm event monitoring is discussed below. Shipyard Best Management Practices (BMPs) are included in Part I B. Other Requirements or Special Conditions. Include Part I C. Stormwater Management in the permit (refer to Storm Water guidance earlier in this section).

b. Part I.A. Storm Event and Effluent Monitoring

Upon review of the application and following a site inspection, the permit writer should determine how much point source monitoring is appropriate.

> Although not every vessel repair structure (conventional and Crandall marine railways, floating and graving drydocks, shore-side sites in proximity to travel lifts and other similar devices) has a discrete point from which samples of contaminated storm water and process wastewater can be routinely obtained, all are considered to be point sources of pollutants to State waters and Part I.A. effluent monitoring is required.

The following is a list of parameters recommended for monitoring along with a rationale. Monitoring requirements for these parameters should be included in Part I.A. for contaminated stormwater runoff, for other contaminated non-process wastewater, or if appropriate, for process wastewater.

Exhibit IN-3-3 Recommended List of Sampling Parameters

Parameter	Rationale
Flow	To determine volume and duration
pH	State Water Quality Standards (BPJ)
TSS	To determine effectiveness of BMPs (BPJ)
TPH	Petroleum hydrocarbons can be found throughout shipyards (BPJ)

Dissolved Copper	Active biocide in majority of anti-foulant coatings, present in metal alloys, piping, brake linings, off-site run-on, etc. (BPJ)
Dissolved Zinc	Active component in anti-corrosive coatings, sacrificial anodes, alloy component of metal alloys, etc. (BPJ)
Tributyltin	Potent booster biocide in anti-foulant coatings, water treatment equipment, etc. (BPJ)
Any water quality standards-based monitoring determined appropriate from application or other data	Monitoring of expected pollutants may be necessary in a permit issued to a shipyard for the first time, or when extensive operational changes occur. (BPJ)
Biological Toxicity Testing	Process wastewaters have the potential for biological toxicity

The frequency of monitoring shall be based on a BPJ determination considering the information presented in the application, the frequency of wastewater generating activities, documented volumes of wastewater generated, level of BMP imposition, in-stream water quality concerns, and other supporting information.

Part I.A. effluent monitoring of storm water shall also conform to the VPDES permitting requirements defined in the industrial storm water section (Section IN.G).

c. Best Management Practices (BMPs) for Shipyards

Best Management Practices (BMPs) are used in permits to require the permittee to control or abate pollution by means other than typical wastewater treatment. BMPs can be used in lieu of effluent limits when effluent limits alone are not sufficient to achieve the intent of the Law or when effluent limits are not feasible.

The Shipyard BMPs have selections to be made based on whether the facility has floating drydocks, graving docks and/or marine railways. Select the appropriate language for the facility being permitted:

The permittee shall comply with the following:

1) The permittee shall provide adequate disposal services for all sanitary wastes generated by vessels moored or docked at the permitted facility to remove and dispose of all sewage from the vessels by discharge into the permitted facility's sanitary waste system or other appropriate collection means, in compliance with the Virginia Department of Health Regulations.

2) Vessels which have been fitted to collect gray water, either with sewage or separately, shall not discharge the gray water into surface waters unless specifically addressed as a permitted discharge in Part I.A. effluent limitations.

3) The yard, affected piers and shoreside support areas shall be cleaned on a regular basis to minimize the possibility that runoff will carry spent abrasives, paints, solvents, cleaners, anti-corrosive compounds, paint chips, scrap metal, trash, garbage, petroleum products or other debris into the receiving water. Items such as welding rods, wood, plastic, miscellaneous trash, paper, glass, packaging, industrial scrap, insulation and scrap metal must be routinely removed from the general yard area for reuse or disposal. Cleanup of areas contributing runoff shall consist of mechanical or manual methods to sweep up

and collect the debris.

Mechanical cleanup may be accomplished by mechanical sweepers, front end loaders, vacuum cleaners or other innovative equipment. Manual methods include the use of shovels and brooms.

4) Drydock decks shall be cleaned before flooding or launching, respectively, to prevent the discharge of pollutants to the waterway. The drydock shall also be cleaned on a regular basis while a vessel is in the drydock so as to prevent rain from washing material into receiving waters. Drydock collection and treatment of storm water and/or wastewater may be effective in lieu of frequent, extensive and labor intensive cleanup requirements.

OR

Marine railway carriages shall be cleaned before lowering and launching to prevent the discharge of pollutants to the waterway. They shall also be cleaned on a regular basis while a ship is on the railway carriage so as to prevent rain from washing material into receiving waters.

OR

Drydock decks and marine railway carriages shall be cleaned before flooding, lowering or launching, respectively, to prevent the discharge of pollutants to the waterway. They shall also be cleaned on a regular basis while a vessel is in the drydock on upon the railway carriage so as to prevent rain from washing material into receiving waters. Drydock collection and treatment of storm water and/or wastewater may be effective in lieu of frequent, extensive and labor intensive cleanup requirements.

[Select the appropriate one, delete the other two]

5) Acceptable methods of control shall be utilized during abrasive blasting and spray painting, with the intent of preventing blast dust and overspray from falling into the receiving water or any storm sewer system.

   a) For drydocks, these include the following: downspraying of blast materials and paint; barriers or shrouds beneath the hull; barriers or shrouds between the hull and the wing walls of the drydock; barriers or shrouds hung from the flying bridge to the drydock, from the bow and stern of the vessel, or from temporary structures erected for that purpose.

   b) For marine railways, these include the following: downspraying of blast materials and paint; barriers or shrouds beneath the hull; barriers or shrouds between the hull and temporary/ permanent support structures, from the flying bridge to temporary/permanent support structures, or from the bow and stern of the vessel to temporary support structures erected for that purpose.

[If only drydocks, combine with first paragraph (ie. "...receiving water. For drydocks, these include...") and make last paragraph part of it also (ie. One big paragraph). If only marine railways, combine with first paragraph and last paragraph as noted above. If both, use as is.

Use the following paragraph for all.

The bottom edge of free hanging barriers shall be weighted to hold them in place during a light breeze. When abrasive blasting vessel superstructures,

openings and open areas between decks shall be covered (including but not limited to scuppers, railings, freeing ports, ladders, and doorways) if they allow discharge to State waters.

6) Fixed or floating platforms shall be used as work surfaces when working at the water surface. These platforms shall be used to provide a surface to catch spent abrasive, slag, paint, trash and other debris/pollutants, and shall be cleaned at the end of each work shift.

7) Dust and overspray from abrasive blasting and painting in yard facilities shall be controlled to minimize the spreading of wind blown materials. Frequent cleanup of these areas shall be practiced to prevent abrasive blasting waste from being washed into storm sewers or the adjacent waterway.

8) Pressure washing used for the purpose of vessel maintenance or removing marine growth, marine salts and sediments for the hulls are defined process wastewaters subject to Part I.A. effluent monitoring. The resulting wastewater shall be contained in a manner to prevent or minimize the discharge of marine growth, sediments, paint particles and metal scale to the waterway.

9) When water blasting, hydro-blasting, or water-cone blasting is used to remove paint from surfaces or reprofile properly adhering coatings, the resulting process wastewater and debris shall be collected in a sump or other suitable device. This mixture then will be either delivered to appropriate containers for removal and disposal or subjected to treatment to concentrate the solids for proper disposal and prepare the water for reuse or discharge through an authorized outfall subject to Part I.A. effluent monitoring, as may be appropriate.

10) When in drydock or upon a railway, all shipboard cooling water and process water shall be directed away from contact with spent abrasive, paint and other debris. Contact of spent abrasive and paint with water will be prevented by proper segregation and control of wastewater streams, unless using suitable wastewater collection or treatment systems.

11) Where possible, water leakage from graving dock gates (caissons) shall be directed away from contact with spent abrasives, paint and other debris.

[Use condition 11 only when there are graving drydocks. If deleted, adjust numbering accordingly]

12) The sediment traps in the stormwater drainage systems for [floating drydocks, graving drydocks, areas around marine railways] and other industrial areas where solid pollutants such as blast grit, paint and welding slag and spent rods can accumulate shall be inspected on a monthly basis and cleaned as necessary to ensure the interception and retention of solids entering the drainage system. Inspection logs and cleaning records must be maintained.

13) During the drydocked period, oil, grease or fuel spills shall be prevented from reaching State waters. Cleanup shall be carried out promptly after an oil, grease or fuel spill is detected. Oil containment booms shall be conveniently stored so as to be immediately deployable in the event of a spill.

14) Drip pans or other protective measures shall be required for all oil or oily waste transfer operations to catch incidental spillage and drips from hose nozzles, hose racks, drums or barrels.

15) Oil contaminated materials shall be removed from the [drydock, marine railway

area] as soon as possible, and in all cases prior to submersion of the [drydock, railway carriage].

16) The permittee shall prepare and maintain current all plans and contingency documents required by State and Federal Laws and regulations addressing oil storage facilities and or petroleum product spills. These plans shall be retained at the facility for immediate implementation in the event a petroleum spill occurs. Emulsifiers and dispersants are not suitable cleanup agents to facilitate cleanup and/or remediation of petroleum product spills into State waters. The requirements and cleanup referenced above shall also apply to any hazardous substances which may be stored at, and/or transshipped through this facility.

17) Solid chemicals, chemical solutions, paints, oils, solvents, acids, caustic solutions and waste materials, including used batteries, shall be stored in a manner which will prevent the entry of these materials into waters of the State, including ground water. Materials should be plainly labeled for easy identification. Storage shall be in a manner that will prevent entry into State waters by overfilling, tipping, rupture, or other accidents within the storage area.

18) All metal finishing chemical solution, caustic wash, and rinsewater tanks shall be stored in such a manner so as to prevent introduction of spills into State waters and plainly labeled for easy identification. Any intercepted chemical spill shall be recycled back to the appropriate chemical solution tank or disposed of. The spilled material must be handled, recycled or disposed of in such manner as to prevent its discharge into State waters.

19) Drip pans or other protective devices shall be required for all paint mixing and solvent transfer operations, unless the mixing operation is carried out in controlled areas away from storm drains, surface waters, shorelines and piers. Drip pans, drop cloths or tarpaulins shall be used whenever paints and solvents are mixed. Sorbents must be on hand to soak up liquid spills. Paints and solvents shall not be mixed in areas where spillage would have direct access to State waters unless containment measures are employed.

20) Paint and solvent spills shall be prevented from reaching storm drains or deck drains and subsequent discharge into the water and shall be cleaned up promptly.

21) The amount of paint stored [on the drydock, in the graving drydock, within the marine railway area] and/or on a lighter floor shall be kept to a minimum.

22) Trash receptacles shall be provided on each pier and on board each vessel being repaired. These receptacles shall be emptied as necessary to prevent trash from entering State waters.

23) Leaking connections, valves, pipes, hoses and soil chutes carrying wastewater shall be replaced or repaired immediately. Soil chute and hose connections to vessels and to receiving lines or containers shall be tightly connected and leak free.

24) Any water testing shall be conducted in a manner to preclude spent abrasives, paint residues, debris and other pollutants from areas of the [drydocks, marine railways] from entering the adjacent waterway.

25) Floatable and low density waste such as wood and plastic, as well as miscellaneous trash such as paper, insulation, and packaging, etc., shall be

removed [from the floating drydock floor prior to flooding or sinking, from the graving drydock floor prior to flooding, from the marine railway carriage and ramp before launching].

26) The permittee shall provide adequate disposal services for all oil contaminated bilge and ballast water generated from vessels moored or docked at the permitted facility. Bilge water which has been mixed with industrial wastes shall not be discharged directly to State waters and must be collected, treated and disposed of through a permitted shoreside industrial waste treatment facility, or as appropriate, handled as a hazardous waste as required by Virginia's Solid Waste Regulations.

27) All vessels that are hauled shall be beyond the normal high tidal zone. In the event of vessel overhang during abnormally high tides, all exterior abrasive/water blasting and coating work on the overhanging portion of the vessel shall be discontinued. Exterior work on vessels will not be in areas that extend beyond [the length and width of the drydock, the length and width of the marine railway], unless appropriate precautions are taken to successfully prevent discharge of pollutants into State waters.

28) Docking and launching time intervals shall not be considered as a rationale for not cleaning a [drydock or marine railway].

29) Innovative measures for collecting spent abrasives may be presented to the DEQ for evaluation.

30) Material (spent abrasives, paint chips, etc.) shall be cleaned up from the area in the vicinity of marine railways before the incoming tide.

[Use condition 30 only when there are marine railways. If deleted, adjust numbering accordingly]

31) For defined Vessels of the Armed Forces, Section 325 of the National Defense Authorization Act for Fiscal Year (FY) 1996 amended Section 312 of the Clean Water Act (CWA) by adding a section on Uniform National Discharge Standards (UNDS) for Vessels of the Armed Forces. Phase I of the UNDS rulemaking was completed in FY99, with the Environmental Protection Agency (EPA) and the Department of Defense jointly identifying 25 specific liquid discharges that require shipboard marine pollution control devices (MPCDs). Phase II of the UNDS is presently on-going and DoD and the USEPA plan to promulgate performance standards for seven UNDS discharges, including underwater ship husbandry, during the term of this permit.

[Use condition 31 where the permittee's client base includes or is restricted solely to defined Vessels of the Armed Forces. Use this condition in conjunction with conditions 32 or 33 as appropriate.]

[Use condition 32 where the permittee agrees to perform this activity only on vessels that are known to be coated with biocide-free foul-release anti-foulant coatings]

[Use condition 33 where the permittee usually performs this activity on vessels with unknown hull coatings or hull coatings that contain copper, zinc and/or other biocides]

32) For all vessels other than Vessels of the Armed Forces as defined by the UNDS, the in-water cleaning of a vessel's submerged hull (underwater ship husbandry,

scamping, etc.) coated with ablative anti-foulant (AF) and anti-corrosion (AC) paints is prohibited.

Vessels known to have biocide-free foul-release or other super-slick hull coatings may be cleaned while waterborne subject to the following conditions:

a) On vessels with soft, blistered or sloughing coating systems, only the vessel's running gear (propellers, shafting, etc.) can be cleaned while waterborne.

b) For rotating hull cleaning equipment, use long bristle soft brushes passed quickly and lightly over the coating's surface.

c) If performed without mechanical assistance, use only soft materials to clean the hull (carpet, sponge, etc.) and avoid hard tools such as chisels, scrapers as these could damage the underlying coating systems.

d) Zinc anodes may be replaced, but the scrap anodes shall be brought ashore for recycling or proper disposal.

OR

33) For all vessels other than Vessels of the Armed Forces, as defined by the UNDS, acceptable methods of operational controls shall be no less stringent than those currently developed and promulgated by the U.S. Navy or U.S. Coast Guard under the UNDS. At a minimum, these operational controls shall be utilized during any cleaning of a vessel's hull while waterborne at a ship repair and maintenance facility, with the intent of preventing or reducing to the maximum extent practicable contamination of receiving waters and underlying sediments.

[**Monthly**, **Quarterly**] reports of all individual in-water hull cleaning activities shall be filed with the BMP compliance reports. This information shall include the type and size of vessel, the amount of hull cleaned in square footage, the type of AF/AC paints involved, the number of divers and equipment used, and complete description of any BMPs used.

To verify that this industrial practice is not having an adverse environmental impact, the permittee shall prepare a marine sediment sampling plan for all areas along the facility's waterfront where this practice may be performed. The plan shall be comprehensive and performed no less than once-per-year during the term of the permit. Once developed, the marine sediment sampling plan shall be submitted to the Department for review and approval. The plan must be approved prior to conducting any activities in this regard.

Additional management practices that shall be followed include:

a) Whenever practicable, in-water vessel hull cleaning shall be performed with equipment specifically designed for this purpose and capable of collecting the resulting debris (slimes, soft/hard biological growth, paint, scale, debris) for treatment and approved discharge at the facility or elsewhere.

b) Activities performed for this purpose shall not cause a slick, sheen or discolored plumes indicative of hull paint removal. Should distinct plumes result from in-water hull cleaning activities, the cleaning shall cease immediately and an assessment performed to determine if the in-water activity can continue without disturbing the underlying hull coatings. If it is

determined that cleaning will continue to remove or otherwise disturb the hull coating, the in-water activities must cease.

c) The underwater cleaning, hydro-blasting, sanding or stripping of hull coatings formulated with any amount of organotin (tributyltin, TBTO, TBT, etc.) is prohibited.

d) Wait a minimum of 90-days after the application of a new hull coatings formulated with copper, zinc and/or other biocides before performing in-water cleaning.

e) On vessels with soft, blistered, sloughing, or any ablative coating systems, only the vessel's running gear (propellers, shafting, etc.) can be cleaned while waterborne.

f) Stainless steel brushes or pads can only be used on non-painted and/or metal surfaces.

g) For rotating hull cleaning equipment, use long bristle soft brushes passed quickly and lightly over the coating's surface.

h) If performed without mechanical assistance, use only soft materials to clean the hull (carpet, sponge, etc.) and avoid hard tools such as chisels, scrapers as these could damage the underlying coating systems.

i) Zinc anodes may be replaced, but the scrap anodes shall be brought ashore for recycling or proper disposal.

Reporting

The permittee shall submit, with the DMR's, a (pick one monthly/quarterly) (if quarterly, include reporting schedule with this part) report certifying compliance or noncompliance with all conditions of the preceding BMP's pertaining to [drydocks, marine railways,] piers, wetslips, and shore side work areas. The report shall include a weekly audit checklist for these areas and a narrative description of observations. The audit shall be conducted by personnel not routinely associated with the aforementioned activities. The reporting forms are provided as Attachments A to this permit.

ATTACHMENT A

SHIPYARD BMP COMPLIANCE REPORT

Facility Name:
Address:

VPDES Permit No.: VA00

Report Period: From __/__/___ To __/__/

OUTFALL NO. (check as appropriate)	**COMPLIANCE**	**NONCOMPLIANCE ***
001	_____	_____
002	_____	_____
002	_____	_____
004	_____	_____
005	_____	_____

*Comments on Noncompliance

_____

Name and Title of Principal Executive Officer or Authorized Agent

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. See 18 U.S.C. § 1001 and 33 U.S.C. § 1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)

_____

Signature of Principal Officer or Authorized Agent Date

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall(s): 001 (TBT Wastewaters).

   Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS [a]			
	Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NL	NA	NA	NL	1/D-D	Estimate
pH (S.U.)	NA	NA	6.0	9.0	1/D-D	Grab
Total Suspended Solids(mg/l)[b]	30	NA	NA	60	1/D-D	Grab
Tributyltin (ug/l) [b] [c]	NA	NA	NA	0.72	1/D-D	3G/24HR
Dissolved Copper (ug/l) [b]	NA	NA	NA	NL	1/3 Months	Grab
Dissolved Zinc (ug/l) [b]	NA	NA	NA	NL	1/3 Months	Grab
Tributyltin (grams/yr) [c]	NA	NA	NA	5.0	1/Year	Calculated

NA = Not Applicable. NL = No limitation, however, reporting is required.

1/D-D = Once per discharge-day, once each day or partial day that a discharge occurs.
1/3 Months = In accordance with the following schedule: 1st quarter (January 1 - March 31); 2nd quarter (April 1 - June 30); 3rd quarter (July 1 - September 30); 4th quarter (October 1 - December 31).
1/Year = Between January 1 and December 31.
3G/24HC = For tributyltin, a minimum of three separate grab samples of wastewater treatment plant effluent representative of the discharge shall be collected within one 24-hour period, and combined for final analysis and reporting.

[a] See Part **I.X.X.** for effluent sampling procedures.
[b] See Parts **I.X.X.** and **I.X.X.** for quantification levels and reporting requirements, respectively.
[c] To be sampled each day when tributyltin wastewaters generated. See special condition I.E. for additional information on tributyltin reporting.

2. There shall be no discharge of floating solids or visible foam in other than trace amounts.

d. Tributyltin (TBT) - Special Conditions *(use when permit contains TBT limit)*:

As the State has a water quality standard for TBT, and this material can be found on vessels visiting the State for repair and/or maintenance, effluent limitations and other special permitting conditions may be necessary.

1) TBT Limitations and Special Conditions

Through cooperative effort with the regulated and environmental community DEQ has developed a multi-faceted strategy to address discharges of TBT into State waters. This strategy includes the imposition of numeric limitations on both mass (annual limit derived from previous limit) and concentration (based on the State's acute WQS), as well as defining what constitutes a TBT wastewater, a minimum level of wastewater treatment and other permit special requirements.

a) TBT Limitations

The Part I.A. page proposed for point source discharges of treated TBT wastewater from shipyards is provided below. As TBT's toxicity has been well established, at this time additional testing in this regard is not recommended based on other requirements of this section.

Special Condition Language

Tributyltin Exclusion (*Use where permittee agrees not to handle TBT and permit contains no TBT limit, to appear as a separate permit condition)*

The removal and/or application (hereafter referred to as use) of hull coatings which contain the biocide tributyltin are prohibited at this permitted facility. Should the permittee consider using hull coatings and/or paints which contain this toxin, this permit must be modified or, alternatively, revoked and reissued to incorporate a limit which addresses the State's water quality standard for tributyltin prior to its use.

TBT Related Special Conditions - (*To be used whenever TBT limitations are imposed, paragraph identifiers provided for example only*)

1. TBT Notification Requirements, Definitions, and Analysis

a. Notification of TBT Use

Each time paints and/or other hull coating materials which contain TBT are either applied and/or removed (hereafter referred to as "used"), the permittee shall notify the XXX Regional Office prior to their use. This notification shall be in writing and contain the following information, as a minimum:

(1) estimated quantity to be removed (square footage) and/or applied (gallons); and

(2) anticipated duration of use, estimated quantity of TBT wastewater to be generated and measures to be taken by the permittee (BMPS, collection and treatment, etc.) to minimize release of this toxic pollutant into the receiving stream.

b. TBT Wastewater.

For the purposes of this permit, TBT wastewater shall mean the following:

(1) process wastewater generated during repair and maintenance of surfaces coated with TBT anti-foulants, as defined in Part I.A.;

(2) precipitation (rainfall/snowmelt) that commingles with process wastewater defined in (1) above;

(3) sonar dome water containing TBT; or

(4) any other waters that may contain a detectable TBT residue.

c. TBT Analysis

The analytical method for TBT shall be either NBSR 85-3295 or DEQ approved method (see A Manual for the Analysis of Butyltins in Environmental Systems by the Virginia Institute of Marine Science, November 1996). Upon approval by the Environmental Protection Agency, alternative analytical methods for TBT may be incorporated into this permit by reference, and used for testing required by this permit.

2. General TBT Requirements

a. Within the constraints imposed by State and Federal funding, the permittee shall actively and in good faith pursue, investigate and report modifications to system components, supplemental chemicals or feed rates, operation methods and/or other processes involving the current technology that have a potential to increase treatment efficiency or effectiveness. In addition, the permittee shall, within constraints imposed by State and Federal funding, actively and in good faith research and investigate alternative technology options for TBT wastewater treatment that have the potential to consistently and economically treat TBT wastewater to meet a concentration of 0.050 micrograms per liter (µg/l).

Such research and investigations may include, but not be limited to, literature or internet searches, equipment supplier inquiries, wastewater sample testing by equipment suppliers and laboratories, networking with trade associations members, research by universities, laboratories or commercial entities, utilization of co-op students or interns and other similar related activities.

b. Should a practical and economical alternative treatment technology and/or wastewater management practice be developed capable of consistently achieving the 0.050 µg/l effluent goal, the permittee shall take prompt action to utilize that alternative treatment technology in lieu of the current treatment

3. TBT Wastewater Treatment and Quantification

a. The permittee shall demonstrate good faith efforts to capture all wastewater associated with TBT operations at their facilities and to achieve the 0.050 µg/l effluent goal for wastewater discharged from TBT operations. In no case shall the annual cumulative mass of TBT discharged to State waters, as a result of TBT wastewater treatment activities, exceed 5.0 grams per year. Only TBT at a concentration at or above the recognized Quantification Level (QL) of 0.030 µg/l in the wastewater discharged from TBT operations shall be included in determining compliance with this mass limitation.

b. The permittee shall treat all TBT wastewater with a treatment system no less effective than the best available and economical technology and practices. For the purpose of this permit, best available technology and practices means the processing of collected TBT wastewater through a dissolved air floatation treatment plant and final filtration/adsorption using activated carbon.

4. TBT Compliance Reporting

a. The permittee shall collect and report data on TBT effluent levels and treatment system effectiveness for each vessel from which TBT wastewater is discharged to State waters**.** These data will include, at a minimum, influent TBT concentrations, effluent TBT concentrations, calculation of the TBT removal efficiency, quantities of wastewater collected, treated and discharged, the calculated mass of TBT discharged for each vessel repair or maintenance job, and the annual cumulative mass of TBT discharged.

b. All reports required by this permit shall be submitted to the DEQ's XXXX Regional Office by not later than March 1 and September 1, of each year. The March 1 report shall include data obtained between July 1 and December 31. The September 1 report shall include data obtained between January 1 and June 30.

Within thirty days of receipt of the reports identified in the previous condition above, the DEQ, the permittee and other signatories to the Letter of Agreement may meet to discuss the contents of the reports and other issues relative to TBT.

5. Water Treatment Plants

a. Permitting Strategy

These discharges may qualify for coverage under the potable water general permit. Permit writers should evaluate the operation to determine whether or not the general permit is appropriate. The limits presented in this section for Water Treatment Plants must be effective immediately upon permit issuance/ reissuance.

b. Form 2C Minimum Testing Requirements

The applicant must test for and report all parameters in Form 2C unless a written waiver request has been submitted and granted. The applicant may request and be granted a waiver for all except the following parameters:

(1) Table A - TSS, Flow, and pH

(2) Table B and C - Facilities utilizing Alum or Aluminum Sulfate must provide test results for Chlorine, Aluminum and any other parameters "believed present"

For facilities utilizing manganese greensand filters the applicant must provide results for the following: Manganese, Iron, Color, and any other parameters "believed present"

Facilities using reverse osmosis to treat well water must provide test results for radioactivity and any other parameters "believed present".

Must report any parameters "believed present". Without data showing conclusively that these parameters are absent, the applicant should test for:

Cadmium, Chromium, Copper, Lead, Mercury, and Zinc. **The RO may request that application test data for metals also be reported as dissolved.**

Additionally, for facilities using reverse osmosis, the RO should request TDS testing on the application.

c. Suggested Effluent Limitations & Basis

(1) Facilities other than reverse osmosis or nanofiltration plants

PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow	NA	NL	NA	NL	1/Month	Estimate
Total Suspended Solids	BPJ	30 mg/L	NA	60 mg/L	1/Month	Composite[a]
Total Residual Chlorine	1	0.011 mg/L[b]	NA	0.011 mg/L [b]	1/Month	Grab
pH (S.U.)	1	NA	6.0 [c]	9.0 [c]	1/Month	Grab

Technology-based Limits: BPJ
Water Quality-based Limits:1. Water Quality Standards
NL = No Limitation, monitoring required
NA = Not Applicable
Reported estimated flow may be based on the technical evaluation of the sources contributing to the discharge.

[a] For continuous discharges, five grab samples collected at hourly intervals. For batch discharges, five grab samples taken at evenly placed intervals for the duration of the discharge, or until a minimum of five grab samples have been collected. For batch discharges, the first grab shall occur within 15 minutes of commencement of the discharge.

Composite sample procedures for batch discharges unable to meet the requirements in this table may be approved by DEQ on a case-by-case basis.
[b] Total residual chlorine limit shall only be applicable if chlorine is present in the process wastewater. Include the limits listed above contained in 9VAC25-860-70 or more stringent limits based on the reasonable potential analysis which will maintain Water Quality Standards. If the discharge is short duration, apply acute TRC/CPO limits only.
[c] Where the Water Quality Standards (9VAC25-260) establish alternate standards for pH in waters receiving the discharge, those standards shall be the minimum and maximum effluent limitations.

(2) Reverse osmosis and nanofiltration plants

Reverse osmosis plants do not require limitations or monitoring requirements for TSS. RO plants treating water sources other than estuaries or seaside intakes should be evaluated for water-quality based limits for Total Dissolved Solids. Water Quality Standards apply to the discharge to PWS. If WQ-based limits are not necessary for TDS, a TDS monitoring requirement should be included as follows:

PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow	NA	NL	NA	NL	1/Month	Estimate
Total Suspended Solids[b]	BPJ	30 mg/L	NA	60 mg/L	1/Month	Composite[a]
Total Dissolved Solids	BPJ	NA	NA	NL	1/Month	Composite[a]
Dissolved Oxygen	1	NA	4.0[c]	NA	1/Month	Grab
Total Residual Chlorine	1	0.011 mg/L[4]	NA	0.011 mg/L[d]	1/Month	Grab
pH (S.U.)	1	NA	6.0[e]	9.0[e]	1/Month	Grab

Technology-based Limits: BPJ
Water Quality-based Limits: 1. Water Quality Standards
NL = No Limitation, monitoring required
NA = Not Applicable
Reported estimated flow may be based on the technical evaluation of the sources contributing to the discharge.

[a] For continuous discharges, five grab samples collected at hourly intervals. For batch discharges, five grab samples taken at evenly placed intervals for the duration of the discharge, or until a minimum of five grab samples have been collected. For batch discharges, the first grab shall occur within 15 minutes of commencement of the discharge. Composite sample procedures for batch discharges unable to meet the requirements in this table may be approved by DEQ on a case-by-case basis. .
[b] Applicable when conventional filtration treatment discharge is part of drinking water treatment and present in the process wastewater.
[C] Where the Water Quality Standards (9VAC25-260) establish alternate standards for dissolved oxygen in waters receiving the discharge, those standards shall be the minimum effluent limitations.
[d] Total residual chlorine limit shall only be applicable if chlorine is present in the process wastewater. Include the limits listed above contained in 9VAC25-860-70 or more stringent limits based on the reasonable potential analysis which will maintain Water Quality Standards. If the discharge is short duration, apply acute TRC/CPO limits only.
[e] Where the Water Quality Standards (9VAC25-260) establish alternate standards for pH in waters receiving the discharge, those standards shall be the minimum and maximum effluent limitations.

d. Special Conditions

The following special conditions should be included in permits for water treatment plants.

- Chlorine Monitoring and Compliance (*if applicable, See Section IN Part E*)
- Notification Levels
- Operation and Maintenance Manual Requirement (*modify to specifically mention that the O&M needs to include sludge disposal, filter medium disposal, etc.*)
- Quantification Levels (*Include for water quality-based parameters, if applicable*).
- Ground Water Monitoring (*if necessary*)
- Monitoring Frequency Reduction
- WET Testing - Owners with a daily maximum flow rate greater than or equal to 50,000 gallons per day that have not conducted whole effluent toxicity (WET) testing to demonstrate there is no reasonable potential for toxicity from their discharge shall conduct WET testing. Owners with changes in treatment technology or chemical usage that change the characteristics of the discharge and with a daily maximum flow rate greater than or equal to 50,000 gallons per day shall conduct WET testing as described in subdivisions a through e of this subsection.

The WET testing shall consist of a minimum of four sets (set = vertebrate and invertebrate) of acute or chronic tests that reflect the current characteristics of the treatment plant effluent using the following tests and organisms:

For an intermittent or batch discharger	**48 hour static acute toxicity tests**
Freshwater organisms	Pimephales promelas or Oncorhynchus mykiss (for cold water) (vertebrates) Ceriodaphnia dubia (invertebrate)
Saltwater organisms	Cyprinodon variegates (vertebrate) Americamysis bahia (invertebrate)
For continuous discharger	
Freshwater	7-Day Chronic Static Renewal Larval Survival and Growth Test with Pimephales promelas (vertebrate)
	3-Brood Chronic Static Renewal Survival and Reproduction Test with Ceriodaphnia dubia (invertebrate)
Saltwater	7-Day Chronic Static Renewal Larval Survival and Growth Test with Cyprinodon variegatus (vertebrate)
	7-Day Chronic Static Renewal Survival, Growth and Fecundity Test with Americamysis bahia (invertebrate)

> Freshwater organisms are used where the salinity of the receiving water is less than 1.0‰ (parts per thousand). Where the salinity of the receiving water is greater than or equal to 1.0‰ but less than 5.0‰ either freshwater or saltwater organisms may be used. Saltwater organisms are used where the salinity is greater than or equal to 5.0‰.

There shall be a minimum of 30 days between sets of tests, and test procedures shall follow Title 40 of the Code of Federal Regulations, Part 136 (40 CFR Part 136), which references the EPA guidance manuals for WET testing.

This testing shall be completed, at a minimum, during the first year of coverage under the permit or within one year of commencing discharge. The department will evaluate all representative data statistically to see if there is reasonable potential for toxicity in the facility discharge. If the department determines that no reasonable potential for toxicity exists in the facility discharge, no further WET testing is required unless changes in treatment technology or chemical usage are made at the plant that change the characteristics of the discharge. If there have been changes to the effluent characteristics, then four sets of WET testing, either acute or chronic tests as applicable, must be performed to recharacterize the discharge.

If such reasonable potential exists and cannot be eliminated, the owner will be notified that he must apply for an individual VPDES permit at next reissuance and a WET limit will be included in that individual permit. If the potential cause of the toxicity is eliminated during the five year term of this general permit, the owner may conduct additional WET testing to demonstrate that there is no longer reasonable potential for toxicity and an individual permit will not be required at the next reissuance.

Any WET testing data will be submitted with the next required discharge monitoring report.

6. Wood Preserving Operations

a. Permitting Strategy

The wood preserving operation may be the source of toxic pollutants that are 1) discharged to surface waters via a point source, 2) potentially introduced to groundwater, or 3) both. Although the facility may have a covered storage area for raw and processed wood, previous and current operational activities, access, and egress may still impact on surface water. The broadest possible definition of point source should be used. Many of these operations will qualify for coverage under the industrial stormwater general permit. Permit writers should evaluate the operation to determine whether or not the general permit is appropriate. Those wood preservers that discharge only stormwater and do not have the potential for groundwater contamination due to current or past practices, may be covered under the general permit. For operations that employ creosote or pentachlorophenol preservation or that have an existing individual permit with limits not included in the general permit, an individual permit is appropriate. A VPA permit should only be considered if the storage woodyard is covered and bermed to divert runoff around the site and there is no defined point source discharge from the site.

(1) Technology Based Limits

Under the Effluent Guidelines established for timber products, 40 CFR Part 429, for the Water-Borne or Nonpressure and Boulton subcategories, discharges of process wastewater from wood preserving operations are prohibited. Other activities at the wood preserver operation such as log washing and wet storage, may be subject to other effluent limitations guidelines. Permit writers should carefully evaluate the application and the site to determine if these mandatory limitations are applicable.

(2) Water Quality-Based Limits

Toxic substances may be limited, providing suitable effluent data exists for evaluation. Stormwater or other intermittent discharges require only a review of acute wasteload allocations. Continuous discharges of nonprocess wastewaters will require an evaluation of acute and chronic wasteload allocations. Permit limits should be expressed only as daily maximum concentrations (no monthly average or mass limits). Refer to technical guidance for further development of toxics limits and monitoring requirements.

The above strategies do not apply to facilities using fire retardant chemicals/processers. In these cases, only stormwater discharges are permitted, and the BMP control strategy must include monitoring to show the effectiveness of the stormwater pollution prevention plan.

(3) Stormwater Management

Stormwater discharges from wood preserving operations are classified as dischargers of stormwater associated with industrial activity. Because of this designation, the individual VPDES permit must contain a Stormwater Management section. This will include effluent limitations and monitoring; analytical (benchmark) monitoring; stormwater management evaluation; general stormwater special conditions; and the sector A stormwater pollution prevention plan (SWPPP) requirements. Permit writers should refer to Section IN-2 for further guidance.

Additional parameters may be considered for stormwater monitoring based on the formulation of the preservatives used currently on the site or in the past. The Material Safety Data Sheet (MSDS) may provide information to determine the respective pollutants of concern. Facilities using fire retardant chemicals should also test for NH_3-N, TKN and PO_4^{-3} (as P).

(4) Groundwater Monitoring

The decision to require groundwater monitoring will be based on an evaluation of site history, type of treatment facilities used, method of wood preservation, existing or proposed housekeeping practices, proximity of treatment facilities to surface and groundwater, on-site soil type and texture, geologic and hydrogeologic features of the site, exposure of treated wood to rainfall, tracking of contaminants by vehicles, and other factors that may be pertinent. See GM18-2013 for more details. Acceptable design and operation techniques that may eliminate the need for a plan include a leachate detection sump or other means of detecting potential seepage or leakage of pollutants into ground water.

For proposed facilities or existing facilities without a groundwater monitoring program in place, the groundwater monitoring plan may be developed, and submitted to the Regional Office for approval through a permit special condition. At a minimum, the groundwater monitoring plan should include one well hydrologically upgradient from the operation and two wells hydrologically downgradient from the potential sources of contamination. Justification for monitoring well location will be the responsibility of the owner.

Due to the complex layout of some facilities, there may be cases where the groundwater monitoring has been conducted or addressed by other requirements set under the RCRA rules. The permittee may justify such, however the permitting process should not be delayed due to pending approval of other plans (such as closure or post closure plans) from the Waste Division. It should be noted that the groundwater monitoring plan required for the surface impoundment closure (under the RCRA rules) often does not serve the need of the groundwater protection measure for the storage woodyard.

Minimum sampling frequency should be semi-annual. Sampling method, testing parameters, and reporting requirements should be addressed in the draft permit on a case-by-case basis. Background samples should be required prior to start-up for proposed new facilities. Metals should be analyzed for dissolved form.

(5) Surface Water Monitoring

Under certain circumstances, surface water (in-stream) monitoring may be warranted for a VPDES permit. Such site-specific monitoring requirements should be placed under Part I B Other Requirements and Special Conditions.

(6) Requirements for Closure

Due to the potential for long-term environmental contamination, through the O & M Manual submittal, a facility closure plan should be provided by the owner of both existing and proposed facilities that are issued individual permits. The plan should address the entire facility closure, except those RCRA regulated units, with the following specifics:

(a) Temporary shutdown conditions - how process water or wastewater will be handled during this period, and

(b) Final shutdown - closure of operation areas including, but not limited to, disposition of contaminated soils and ground water, and disposal of all wastewater and process chemicals.

The Regional Office may require a detailed plan be submitted and approved prior to facility closure. This requirement can be carried out through a conditional approval of the O & M Manual. The owner will be responsible to coordinate with the Waste Division any closure actions which are regulated under the "Virginia Hazardous Waste Management Regulations".

b. Form 2F Minimum Testing Requirements

The applicant must test for and report all parameters in Form 2F unless a written waiver request has been submitted and granted. The applicant may request and be granted a waiver for all except the following parameters:

(1) Table A - Oil and Grease, pH, Chemical Oxygen Demand, Total Suspended Solids

(2) Part B - Refer to 40 CFR Part 429 - Timber Products Processing Point Source Category, to determine which pollutants are limited in effluent guidelines

(3) Part C -The principal pollutants of concern, based on the type of preservatives commonly used, are as follows:

Creosote Preservative Process

Acenaphthene	Acenaphthylene	Anthracene
Benzo(a)anthracene	Benzo(b)fluoranthene (or 3,4-Benzofluoranthene)	
Benzo(a)pyrene	Benzo(ghi)perylene	Benzo(k)fluoranthene
Chrysene	Dibenzo(a,h)anthracene	Fluoranthene
Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene
Phenanthrene	Pyrene	

Pentachlorophenol Preservative Process

4-Chloro-3-methylphenol (or p-Chloro-M-Cresol)	
2,4-Dichlorophenol	2-Chlorophenol
2,4-Dimethylphenol	2,4-Dinitrophenol
2-Methyl-4,6-dinitrophenol (or 4,6-Dinitro-O- Cresol)	
4-Nitrophenol	2-Nitrophenol
Pentachlorophenol	Phenol
2,4,6-Trichlorophenol	

c. Suggested Effluent Limitations & Basis

PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		MONTHLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow	NA	NL	NA	NL	1/Month	Estimate
COD	NA	NL	NA	NL	1/3 Months	Grab
Total Suspended Solids	NA	NA	NA	NL	1/3 Months	Grab
Oil & Grease	NA	NA	NA	NL	1/3 Months	Grab
Dissolved Chromium III[2]	1	*	NA	*	1/3 Months	Grab

Dissolved Chromium VI[2]	1	*	NA	*	1/3 Months	Grab
Dissolved Copper[2]	1	*	NA	*	1/3 Months	Grab
Dissolved Arsenic[2]	1	*	NA	*	1/3 Months	Grab
Hardness (mg/l as $CaCo_3$)	NA	NA	NL	NA*	1/Month	Grab
pH (s.u.)	1	NA	6.0[1]	9.0[1]	1/Month	Grab

Technology-based Limits: BPJ
Water Quality-based Limits:3. Water Quality Standards
NL = No Limitation, monitoring required
NA = Not Applicable

[1] Where the Water Quality Standards (9VAC25-260) establish alternate standards for pH in waters receiving the discharge, those standards shall be the minimum and maximum effluent limitations. Specify values for metals and pH which will maintain Water Quality Standards.
[2]Do not include metals monitoring for wood preserving facilities using only oil-based preservatives.

Note to permit writers: If water quality-based limits have been developed for an outfall, they are effective at all times and must be included here. Add additional water quality-based limits or monitoring requirements for pollutants of concern based on the activities at the facility.

d. Special Conditions

The following special conditions should be included in permits:

- Notification Levels
- Materials Handling/Storage
- Operation and Maintenance Manual Requirement. (*The manual should include sample collection, preservation and analysis techniques for ground water and effluent water, preventative maintenance plan, and facility closure plan)*
- Restrict operations such that treated lumber is retained on the drip pad until drippage has ceased before removing it to a storage area.
- Quantification Levels
- WET Testing
- Groundwater Monitoring Plan

Additional special conditions language:

Discharge of Process Wastewater

There shall be no discharge of process wastewater pollutants to State waters. The term "process wastewater" specifically excludes material storage yard runoff (either raw material or processed wood storage).

Fact Sheet Rationale: Process wastewater from wood preserving operations will contain additional toxic pollutants (prohibited or limited by the Clean Water Act). Process wastewater from wood preservers is regulated under 40 CFR PART 429.

Treated Wood Storage

Treated wood shall be held on the drip pad until drippage has ceased.

Fact Sheet Rationale: Groundwater and surface water contamination can be minimized by containing the chemicals that will initially drip from the lumber following treatment.