PUBLIC NOTICE DRAFT PERMIT RATIONALE FOR REISSUANCE

Von Drehle Corporation

Adams County

Natchez, Mississippi

Water NPDES No. MS0001309

January 26, 2018

1. FACILITY INFORMATION

Facility Name: Von Drehle Corporation

Facility Address: 30 Majorca Road, Natchez, MS 39120

Permit No.: MS0001309

SIC: 2621 (Tissue and Towel Manufacturing from wastepaper)

Permit Writer: Becky Nester

EPD Branch: Water Branch II

1. NATURE OF BUSINESS

Von Drehle Corporation manufactures Away from Home tissue and toweling products. The facility takes recycled paper and puts it through a mostly mechanical process of removing inks, adhesives, fillers and fines. The deink product is then piped directly to the machine chest. Currently, the facility operates only the deinking system. Von Drehle has owned this facility for the past three years and has had not been processing wastepaper until April of 2016. Since April 2016, the most consistent production data is from June through September of 2017. The production average was 93 tons/day, the maximum 30-day average was 98 tons/day and the daily maximum was 147 tons/day. Depending upon the grade of product being produced, there will be fluctuation in the production.

1. EFFLUENT AND RECEIVING STREAM FLOW DATA

Von Drehle Corporation has one outfall that is discharging 1.45 MGD of treated wastewater into the Mississippi River. The maximum daily flow is 1.81 MGD. The estimated flow in the 2C application is broken down as follows:

Process water – 814,800 GPD

Cooling and seal water – 349,200 GPD

Stormwater – 100,000 GPD

The 7Q10 flow of the Mississippi River is 140,000 cubic feet per second (90,480 MGD).

1. TOTAL DAILY MAXIMUM LOAD (TMDL) AND 303(d) ISSUES

None

1. TYPE OF WASTEWATER TREATMENT

The wastewater treatment system consists of both physical and biological treatment. The system consists of a primary and secondary clarifier and two aerated lagoons. Nutrients are added to the two aerated lagoons for biological treatment. A screw press is in use to dewater the sludge from the primary clarifier prior to landfilling. The dewatered sludge contains fiber, ash, and clay. Also, any ink ends up with the dewatered sludge sent to the landfill. Water is returned to the primary clarifier from the dewatering process. Alum is added prior to secondary clarifier for dropping solids out. Wastewater is discharged from the secondary clarifier to the Mississippi River through a pipe submerged in the river. 99% of the water comes from groundwater wells on-site with the balance for makeup from the city.

1. EPA APPLICABLE EFFLUENT LIMITATION GUIDELINES AND LIMITATIONS

In previous permits issued to former owners, 40 CFR Part 430 Subpart I (430.92 and 430.94) for existing sources were not applicable because the former permittee did not produce paper. In previous permits 40 CFR Part 430 Subpart I for existing sources and EPA document 440/1-76/047-a were used as guidance to calculate previous permit limits.

40 CFR Part 430 Subpart I, Secondary Fiber Deink Subcategory standards are based upon integrated mills in which both pulp and paper are produced. Von Drehle was already producing deinked pulp but in April of 2016 they started producing tissue paper; therefore, in April of 2016 Von Drehle became applicable to 40 CFR Part 430 Subpart I, New Source Performance Standards (NSPS) (430.95).

The NPDES Permit Writer’s Manual indicates to apply production based ELGs to a facility with varying production that a single estimate of the long-term average should be used when calculating production based limitations and that up to a 20 percent fluctuation in production is within the range of normal variability. The average production from June through September of 2017 was 93 tons/day and will be used in calculating the ELG limitations.

40 CFR Part 430 Subpart I, Secondary Fiber Deink Subcategory (NSPS) for Continuous Dischargers (lbs/1000 lbs of product). Production is 93 tons per day which is 186,000 pounds per day.

ELG Permit Limitation

Parameter Average Production Average

BOD5 5.2 x 186 967 lbs/day

TSS 6.8 x 186 1,265 lbs/day

pH 5.0 SU min 5.0 SU min

ELG Permit Limitation

Parameter Maximum Production Maximum

BOD5 9.6 x 186 1,786 lbs/day

TSS 13.1 x 186 2,437 lbs/day

pH 9.0 SU min 9.0 SU min

Non-continuous dischargers are not subject to the maximum day mass limitations. Concentration limitations are only applicable to non-continuous dischargers. Permittees not using chlorophenolic-containing biocides must certify to the permit-issuing authority that they are not using these biocides.

ELG Permit Limitation

Parameter Maximum Production Maximum

Pentachlorophenol 0.0030 x 186 0.0558 lbs/day (0.005 mg/L)

Trichlorophenol 0.0069 x 186 1.2834 lbs/day (0.106 mg/L)

In lieu of monitoring for trichlorophenol and pentachlorophenol, as per 40 CFR Part 430.95, the permittee may instead certify that chlorophenolic-containing biocides are not being used at the facility.

1. MAXIMUM DATA FROM APPLICATION FORM 2C

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Analysis | Parameter | Analysis |
| BOD5 | 177 mg/L | Total Mercury | 7.10 ng/L |
| COD | 163 mg/L | Total Nickel | 1.3 μg/L |
| TOC | 43 mg/L | Total Zinc | 33.7 μg/L |
| TSS | 92 mg/L | Total Phenols | 0.182 mg/L |
| Ammonia (as N) | < 0.101 mg/L | Pentachlorophenol | < 25.5 μg/L |
| Temp (winter) | 29oC | Trichlorophenol | < 25.5 μg/L |
| Temp (summer) | 33oC | Bromide | 0.175 mg/L |
| pH | 8.68 SU (7.1 SU min) | Color | 15 CU |
| Flow | 1.81 MGD (1.45 MGD avg) | Total Phosphorus | 0.571 mg/L |
| Total Aluminum | 0.170 mg/L | Sulfate | 101 mg/L |
| Total Barium | 0.067 mg/L | Surfactants | 0.124 mg/L |
| Total Manganese | 0.032 mg/L | Total Boron | 0.837 mg/L |
| Total Arsenic | 0.500 μg/L | Total Cobalt | 0.001 mg/L |
| Total Cadmium | 1.72 μg/L | Total Magnesium | 5.10 mg/L |
| Total Chromium | 1.22 μg/L | Total Molybdenum | 0.007 mg/L |
| Total Copper | 11.2 μg/L | Total Titanium | 0.0487 mg/L |

The following parameters were non-detect: Total Residual Chlorine, Fluoride, Nitrate-Nitrite, Total Organic Nitrogen, Oil & Grease, Sulfide, Sulfite, Total Iron, Total Tin, Total Antimony, Total Beryllium, Total Lead, Total Selenium, Total Silver, Total Thallium, Total Cyanide, and all other parameters found on pages V-4 through V-9 of Form 2C.

There are no water quality criteria for Bromide, Color, Total Phosphorus, Sulfate, Surfactants, Total Boron, Total Cobalt, Total Magnesium, Total Molybdenum, or Total Titanium.

#### VIII. WATER QUALITY LIMITATIONS BASED ON WASTELOAD ALLOCATION (WLA)

|  |  |
| --- | --- |
| Parameter | Average Limitation |
| Flow | Report MGD |
| Minimum Dissolved Oxygen | 2.0 mg/L |
| Total Nitrogen | Report lbs/day |
| Total Phosphorus | Report lbs/day |
| pH | 6.0 SU min – 9.0 SU max |

IX. TOXICITY SCREENING

IWC = Instream Wastewater Concentration

Qw = maximum 30-day average wastewater flow, if available

Qr  = receiving stream flow

Xw = historical effluent data

Xwa = permit limits from previous permit or from effluent guidelines

Xta = the calculated instream concentration based on existing permit limits or the calculated limit based on current effluent guidelines

Xr = receiving stream concentration

Xt = the calculated instream concentration based on historical effluent data from application

IWC = 100 \* Qw Xt = (Qr\*Xr) + (Qw\*Xw)

Qr + Qw Qr + Qw

Qw = 1.81 MGD (30-day max not provided so max. flow is being used)

Qr = 90,500 MGD (7Q10 flow) Mississippi River

Qr = 392,372 MGD (Mean Annual Flow for Mississippi River from Corp of Engineers)

IWC(7Q10) = 0.002 %, since IWC < 1%, then only acute will be screened

IWC (Mean Annual Flow) = 0.0005 %

Total Arsenic

Xw = 0.0005 mg/L \* 10 = 0.005 mg/L (No. of Samples <12)

Xt (acute) = (1.81 MGD\*0.005 mg/L)/ (90,500 +1.81) = 0.0000001 mg/L

Xt (Human Health) = (1.81 MGD\*0.005 mg/L)/ (392,372 +1.81) = 0.000000023 mg/L

Total Aluminum

Xw = 0.170 mg/L \* 10 = 1.70 mg/L (No. of Samples <12)

Xt (acute) = (1.81 MGD\*1.70 mg/L)/ (90,500 +1.81) = 0.000034 mg/L

Total Cadmium

Xw = 0.00172 mg/L \* 10 = 0.0172 mg/L (No. of Samples <12)

Xt (acute) = (1.81 MGD\*0.0172 mg/L)/ (90,500 +1.81) = 0.00000034 mg/L

Xt (Human Health) = (1.81 MGD\*0.0172 mg/L)/ (392,372 +1.81) = 0.00000008 mg/L

Total Chromium

Xw = 0.00122 mg/L \* 10 = 0.0122 mg/L (No. of Samples <12)

Xt (acute) = (1.81 MGD\*0.0122 mg/L)/ (90,500 +1.81) = 0.0000002 mg/L

Xt (Human Health) = (1.81 MGD\*0.0122 mg/L)/ (392,372 +1.81) = 0.00000006 mg/L

Total Recoverable Copper

Xw = 0.0112 mg/L \* 10 = 0.112 mg/L (No. of Samples <12)

Xt (acute) = (1.81 MGD\*0.112 mg/L)/ (90,500 +1.81) = 0.0000022 mg/L

Xt (Human Health) = (1.81 MGD\*0.112 mg/L)/ (392,372 +1.81) = 0.0000005 mg/L

Trichlorophenol

Xw = 0.106 mg/L (potential categorical limit)

Xt (Human Health) = (1.81 MGD\*0.106 mg/L)/ (392,372 +1.81) = 0.000005 mg/L

Total Recoverable Zinc

Xw = 0.0337 mg/L \* 10 = 0.337 mg/L (No. of Samples <12)

Xt (acute) = (1.81 MGD\*0.337 mg/L)/ (90,500 +1.81) = 0.000007 mg/L

Xt (Human Health) = (1.81 MGD\*0.337 mg/L)/ (392,372 +1.81) = 0.000002 mg/L

Total Recoverable Nickel

Xw = 0.0013 mg/L \* 10 = 0.013 mg/L (No. of Samples <12)

Xt (acute) = (1.81 MGD\*0.013 mg/L)/ (90,500 +1.81) = 0.0000003 mg/L

Xt (Human Health) = (1.81 MGD\*0.013 mg/L)/ (392,372 +1.81) = 0.00000006 mg/L

Total Phenols

Xw = 0.182 mg/L \* 10 = 1.82 mg/L (No. of Samples <12)

Xt (acute) = (1.81 MGD\*1.82 mg/L)/ (90,500 +1.81) = 0.00004 mg/L

Xt (Human Health) = (1.81 MGD\*1.82 mg/L)/ (392,372 +1.81) = 0.000008 mg/L

Total Mercury (II)

Xw = 0.0000071 mg/L \* 10 = 0.000071 mg/L (No. of Samples <12)

Xt (acute) = (1.81 MGD\*0.000071 mg/L)/ (90,500 +1.81) = 0.000000001 mg/L

Xt (Human Health) = (1.81 MGD\*0.000071 mg/L)/ (392,372 +1.81) = 0.0000000003 mg/L

Pentachlorophenol

Xwa = 0.005 mg/L (potential categorical limit)

Xta (acute) = (1.81 MGD\*0.005 mg/L)/ (90,500 +1.81) = 0.0000001 mg/L

Xta (Human Health) = (1.81 MGD\*0.005 mg/L)/ (392,372 +1.81) = 0.000000023 mg/L

Total Barium

Xwa = 0.067 mg/L \* 10 = 0.67 mg/L (No. of Samples <12)

Xta (Human Health) = (1.81 MGD\*0.67 mg/L)/ (392,372 +1.81) = 0.000003 mg/L

Total Manganese

Xw = 0.032 mg/L \* 10 = 0.32 mg/L (No. of Samples <12)

Xt (Human Health) = (1.81 MGD\*0.32 mg/L)/ (392,372 +1.81) = 0.000002 mg/L

Toxicity Screening Summary

Acute Screening

Parameter Xt AWQC Pass/Fail

Total Aluminum 0.000034 mg/L 0.750 mg/L Pass

Total Mercury (II) 0.000000001 mg/L 0.0021 mg/L Pass

Total Copper 0.0000022 mg/L 0.007 mg/L Pass

Total Zinc 0.000007 mg/L 0.065 mg/L Pass

Total Arsenic 0.0000001 mg/L 0.340 mg/L Pass

Total Nickel 0.0000003 mg/L 0.260 mg/L Pass

Total Phenols 0.00004 mg/L 0.3 mg/L Pass

Total Cadmium 0.00000034 mg/L 0.00103 mg/L Pass

Total Chromium 0.0000002 mg/L 0.323 mg/L Pass

Pentachlorophenol 0.0000001 mg/L 0.0087 Pass

Human Health Screening

Parameter Xt HHWQC\* Pass/Fail

Total Aluminum 0.009 mg/L No Data Available N/A

Total Mercury 0.0000000003 mg/L 0.000153 mg/L Pass

Total Copper 0.0000005 mg/L 1.0 mg/L Pass

Total Zinc 0.000002 mg/L 26 mg/L Pass

Total Arsenic 0.000000023 mg/L 0.024 mg/L Pass

Total Nickel 0.00000006 mg/L 4.6 mg/L Pass

Total Phenols 0.000008 mg/L 860 mg/L Pass

Total Cadmium 0.00000008 mg/L 0.168 mg/L Pass

Total Chromium 0.00000006 mg/L 140 mg/L Pass

Pentachlorophenol 0.000000023 mg/L 0.003 Pass

Total Barium 0.000003 mg/L 1 mg/L Pass

Total Manganese 0.000002 mg/L 0.1 mg/L Pass

Trichlorophenol 0.000005 mg/L 0.0028 mg/L Pass

# \* Organism Consumption, except Total Barium is Water and Organisms.

There are no acute or chronic criteria for Total Barium, Total Manganese, or Trichlorophenol.

Due to the high assimilative capacity of the Mississippi River all toxicity screening passes including Aluminum which is currently listed in the permit as report, but will now be removed. The categorical limits for Pentachlorophenol and Trichlorophenol would also be protective of water quality.

X. COMMENTS TO 2ND DRAFT PERMIT AND CHANGES FROM 2ND DRAFT PERMIT

In a letter dated December 14, 2017 Von Drehle submitted the following comments:

1. Von Drehle disagreed in MDEQ’s applicability of New Source Performance Standards.

2. Von Drehle requested that MDEQ consider the protential production rate for permit limitation calculations.

3. Von Drehle requested that no Dissolved Oxygen limitation be placed in the permit.

MDEQ responses:

1. As explained in Section VI of this 3rd draft permit rationale, when Von Drehle installed the tissue paper machine in April of 2016, Von Drehle them became applicable to 40 CFR Part 430 Subpart I, New Source Performance Standards (NSPS) (430.95).

2. As explained in Section VI of this 3rd draft permit rationale, the long term average production with up to a 20% increase due to fluctuation is to be used in permit limitation calculations.

3. The MDEQ Modeling and TMDL Branch (MTB) re-evaluated dissolved oxygen and determined that a minimum dissolved oxygen of 2.0 mg/L is appropriate. This change is the dissolved oxygen limitation is the only change from the 2nd draft permit.

XI. PROPOSED FINAL LIMITATIONS

1. Average Permit Limitations: Outfall 001

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | Categorical Limitation | Water Quality Limitation | Present Permit Limitation (PPL) | Proposed Permit Limitation | Basis |
| BOD5 | 967 lbs/day | N/A | 5,572 lbs/day | 967 lbs/day | CAT |
| TSS | 1,265 lbs/day | N/A | 5,610 lbs/day | 1,265 lbs/day | CAT |
| Dissolved Oxygen | N/A | 2.0 mg/L | N/A | 2.0 mg/L | WLA |
| pH (min) | 5.0 SU | 2.0 SU | 6.0 SU | 2.0 SU | WLA |
| Nitrogen | N/A | N/A | Report | Report | WLA |
| Phosphorus | N/A | N/A | Report | Report | WLA |
| TKN | N/A | N/A | Report | Report | WLA |
| Nitrates-Nitrites | N/A | N/A | Report | Report | WLA |
| Total Production | N/A | N/A | N/A | Report | 2/ |
| Total Recoverable Aluminum | N/A | N/A | Report | N/A | 1/ |
| Trichlorophenol | N/A | N/A | N/A | Exempt | CAT |
| Pentachlorophenol | N/A | N/A | N/A | Exempt | CAT |

1. Maximum Permit Limitations

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | Categorical Limitation | Water Quality Limitation | Present Permit Limitation | Proposed Permit Limitation | Basis |
| BOD5 | 1,786 lbs/day | N/A | 10,730 lbs/day | 1,786 lbs/day | CAT |
| TSS | 2,437 lbs/day | N/A | 10,418 lbs/day | 2,437 lbs/day | CAT |
| pH | 9.0 SU | 6-9 S.U. | 6.0-9.0 | 6.0-9.0 | MSWQS |
| Total Nitrogen | N/A | N/A | Report | Report | WLA |
| Total Phosphorus | N/A | N/A | Report | Report | WLA |
| Total Kjeldahl Nitrogen | N/A | N/A | Report | Report | WLA |
| Nitrates-Nitrites | N/A | N/A | Report | Report | WLA |
| Total Production | N/A | N/A | N/A | Report | 2/ |
| Total Recoverable Aluminum | N/A | N/A | Report | N/A | 1/ |
| Trichlorophenol | 1.28 lbs/day | N/A | 0.027 mg/L | Exempt | CAT |
| Pentachlorophenol | 0.06 lbs/day | N/A | 0.079 mg/L | Exempt | CAT |

CAT = Categorical Calculated Standard

1/ Total recoverable aluminum passed the toxicity screening; therefore, it will be removed from the permit.

2/ The reporting of total production is being placed in this permit because there are federal categorical

guidelines that are production based.

Biochemical Oxygen Demand (5-day) and Total Suspended Solids shall be monitored once per week with a 24-hour composite sample and reported monthly. Total Production shall be monitored and reported monthly. Flow shall be measured continuously with a flow recorder and reported monthly. pH shall be monitored once per day with a grab sample. Dissolved Oxygen shall be monitored weekly with a grab sample.

Total Nitrogen and Total Phosphorus shall be monitored quarterly and reported on semi-annual DMRs. There is no test method to monitor Total Nitrogen. Total Nitrogen is the total of nitrate/nitrite nitrogen and total kjeldahl nitrogen. Nitrate/nitrite nitrogen and total kjeldahl nitrogen must be monitored and the results added together to obtain a value for total nitrogen.

In lieu of monitoring for trichlorophenol and pentachlorophenol, the permittee has certified that chlorophenolic-containing biocides are not used at this facility. If the permittee wishes to start using chlorophenolic-containing biocides then the permittee must submit an updated permit application and request a permit modification.

Note: An NPDES rating sheet was completed. Since the company has only been producing tissue paper since 2016, a decision was made to not make any rating changes at this time but it is recommended that an NPDES rating sheeting be completed and re-evaluated when the permit is reissued.