Wade Murphy

From: Wade Murphy
Sent: Monday, October 30, 2023 2:25 PM
To: Gordon Holcomb
Subject: RE: Centerville PTL

Gordon, I'm fine with the changes for the PTL file. I'm going to leave the permit as drafted though since the edits don't change the results of the reasonable potential calculations which are only more conservative without these edits. This way the draft permit shows, with the more conservative interpretation, that no WQ based limits are required in the permit, and the PTLs show that, with the more liberal interpretation, that PTLs are the best we can offer via our current procedures.

TN Department of Environment & Conservation

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From: Gordon Holcomb <Gordon.Holcomb@tn.gov>
Sent: Monday, October 30, 2023 2:01 PM
To: Wade Murphy <Wade.Murphy@tn.gov>
Subject: Centerville PTL

Wade,
I've reviewed the Centerville PTL. While none of the limits changed, I do have a couple of comments. Both have Orange Highlighter on the 1Q10 Tab in the attached spreadsheet.

1. Taking account of the relative drainage areas of the outfall and gauge increased the rounded 1Q10 value by 1 MGD
2. The background value for Lead was skewed upward quite a bit by 4 values in 2011 that had very high detection levels and also looked suspect because one of them had a result of 0.74 ug/l with a MDL of 32 ug/l. Taking those 4 points out reduced the average from 1.9 to 0.7 ug/l as the background average.

If these changes look good, then I'll get these to Adam so that they can get send out soon.
Gordon

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2019 WQC

WATER QUALITY CALCULATIONS FOR METALS AND OTHER TOXIC SUBSTANCES
WATER QUALITY BASED EFFLUENT CALCULATIONS
OUTFALL 001

FACILITY: Centerville **PERMIT #: TN024937** **DATE: 09/26/23** **CALC BY: WDM**

regulated stream worksheet (1Q10)

Stream (1Q10) [MGD]	Stream (30Q5) [MGD]	Waste Flow [MGD]	Ttl. Susp. Solids [mg/l]	Hardness (as CaCO3) [mg/l]	Margin of Safety [%]
155.00	**224.00**	**0.75**	**20**	**165**	**50**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	Stream	Fish/Aqua. Life (F & AL) WQC			F & AL- instream allowable		Calc. Effluent Concentration		Human Health Water Quality Criteria *						effluent	
	Bckgrnd.	lab conditions		Fraction	ambient conditions (Tot)		based on F & AL		In-Stream Criteria			Calc. Effluent Concentration **			limited	
	Conc.	Chronic	Acute	Dissolved	Chronic	Acute	Chronic	Acute	Organisms	Water/Organisms	DWS	Organisms	Water/Organisms	DWS	case	
PARAMETER	[ug/l]	[ug/l]	[ug/l]	[Fraction]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	ug/l	**PARAMETER**
Copper (a,b)	1.300	13.739	21.542	0.206	66.570	104.380	**6777.82**	**10703.82**	N/A	N/A	N/A	**NA**	NA	NA	**80.0**	**Copper (a,b)**
Chromium III	1.500	111.692	858.646	0.049	2295.318	17645.507	**238175.51**	**1832036.79**	N/A	N/A	N/A	**NA**	NA	NA	**Report**	**Chromium III**
Chromium VI	1.500	11.000	16.000	1.000	11.000	16.000	**987.17**	**1506.33**	N/A	N/A	N/A	**NA**	NA	NA	**Report**	**Chromium VI**
Chromium, Total	1.500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	100.0	**NA**	NA	14759.33	**NA**	**Chromium, Total**
Nickel (a,b)	3.600	79.442	715.247	0.180	442.145	3980.808	**45537.37**	**412968.52**	4600.0	610.0	100.0	**688695.73**	90860.73	14445.73	**180.0**	**Nickel (a,b)**
Cadmium (a,b)	0.200	1.046	2.877	0.185	5.663	15.570	**567.32**	**1596.04**	N/A	N/A	5.0	**NA**	NA	719.30	**5.0**	**Cadmium (a,b)**
Lead (a,b)	0.700	4.322	110.900	0.110	39.263	1007.568	**4004.52**	**104546.76**	N/A	N/A	5.0	**NA**	NA	644.63	**45.0**	**Lead (a,b)**
Mercury (T) (c)	0.050	0.770	1.400	1.000	0.770	1.400	**74.79**	**140.20**	0.051	0.05	2.0	**0.17**	0.02	292.20	**0.4**	**Mercury (T) (c)**
Silver (a,b,e)	3.806	N/A	7.612	1.000	NA	7.612	**N/A**	**397.09**	N/A	N/A	N/A	**NA**	NA	NA	**5.0**	**Silver (a,b, e)**
Zinc (a,b)	3.700	180.579	179.114	0.103	1759.298	1745.023	**182291.39**	**180809.25**	26000.0	7400.0	N/A	**3895114.13**	1108214.13	NA	**200.0**	**Zinc (a,b)**
Cyanide (d)	0.020	5.200	22.000	1.000	5.200	22.000	**537.87**	**2282.27**	140.0	140.0	200.0	**20973.68**	20973.68	29963.68	**230.0**	**Cyanide (d)**
Toluene									15000.0	1300.0	1000.0	**2247500.00**	194783.33	149833.33	**15.0**	**Toluene**
Benzene									510.0	22.0	5.0	**76415.00**	3296.33	749.17	**3.0**	**Benzene**
1,1,1 Trichloroethane									N/A	N/A	200.0	**NA**	NA	29966.67	**30.0**	**1,1,1 Trichloroethane**
Ethylbenzene									2100.0	530.0	700.0	**314650.00**	79411.67	104883.33	**4.0**	**Ethylbenzene**
Carbon Tetrachloride									16.0	2.3	5.0	**2397.33**	344.62	749.17	**15.0**	**Carbon Tetrachloride**
Chloroform									4700.0	57.0	N/A	**704216.67**	8540.50	NA	**85.0**	**Chloroform**
Tetrachloroethylene									33.0	6.9	5.0	**4944.50**	1033.85	749.17	**25.0**	**Tetrachloroethylene**
Trichloroethylene									300.0	25.0	5.0	**44950.00**	3745.83	749.17	**10.0**	**Trichloroethylene**
1,2 trans Dichloroethylene									10000.0	140.0	100.0	**NA**	20976.67	14983.33	**1.5**	**1,2 trans Dichloroethylene**
Methylene Chloride									5900.0	46.0	5.0	**884016.67**	6892.33	NA	**50.0**	**Methylene Chloride**
Total Phenols									860000.0	10000.0	N/A	**128856666.67**	1498333.33	NA	**50.0**	**Total Phenols**
Naphthalene									N/A	N/A	N/A	**NA**	NA	NA	**1.0**	**Naphthalene**
Total Phthalates									N/A	N/A	N/A	**NA**	NA	NA	**64.5**	**Total Phthalates**
Chlorine (T. Res.)	0.000	11.000	19.000	1.000	11.000	19.000	**2284.33**	**3945.67**	NA	NA	NA	**NA**	NA	NA	**n/a**	**Chlorine (T. Res.)**

a Denotes metals for which Fish & Aquatic Life Criteria are expressed as a function of total hardness.
b The criteria for this metal is in the dissolved form at lab conditions. The calculated effluent concentration is in the total recoverable form.
c The chronic criteria for mercury is not converted to dissolved, since it is based on fish tissue data rather than toxicity.
d The criteria for this parameter is in the total form.
e Silver limit is daily max if column 8 is most stringent.
f When columns 7 or 8 result in a negative number, use results from columns 5 or 6, respectively.
g When columns 12, 13 or 14 result in a negative number, use results from columns 9, 10 or 11, respectively, as applicable.

* Domestic supply included in river use so pick from columns 7,8,12,13,14,15 or Domestic supply not included in river use so pick from columns 7, 8, 12 or 15.
** Water Quality criteria for stream use classifications other than Fish & Aquatic Life are based on the 30Q5 flow.

Note: A copy of this spreadsheet can be found on h:\mfs\pretreat\Pass-through Limits\Spreadsheets**name of Control Authority**.xls

Revions Date Revision Description
September 30, 2019 Updated Cadimum for 2019 F&A WQS update