

401 CHURCH STREET
L & C ANNEX 6TH FLOOR
NASHVILLE TN 37243

**Addendum to Rationale
Including
Record of Comments and Responses**

**National Pollutant Discharge Elimination System (NPDES)
Multi-Sector General Permit
For
Storm Water Discharges From Industrial Activities**

Permit No. TNR050000

May 15, 2009

Administrative Record

The Tennessee Storm Water Multi-Sector General Permit for Industrial Activities (TMSP) is intended to cover storm water discharges to waters of the State of Tennessee from a wide variety of industrial activities. The TMSP is derived from, and based in large part upon, the Final National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Industrial Activities as promulgated by the Environmental Protection Agency (EPA) in Federal Register Vol. 73, No. 189 on Monday, September 29, 2008.

Because the conditions, which affect the presence of pollutants in storm water discharges, vary among industries, the proposed permit contains 31 industry-specific sections (Sectors) that describe the Storm Water Pollution Prevention Plan (SWPPP) requirements, the numeric effluent limitations requirements and the monitoring requirements for each permitted industry. These industry-specific sectors are contained in Part 11 of the permit. There are also a number of permit requirements that apply to all industries. These requirements may be found in Parts 1 through 10 of the TMSP. Permit requirements applicable to all industries include the general coverage discussion; the Notice of Intent requirements and the standard permit conditions.

The current TMSP expired on December 31, 2006. On September 4, 2006, the division of Water Pollution Control (division) issued Public Notice #06-007, which announced public hearings, which were conducted at the following dates and locations:

- Monday, October 16, 2006, at 7 p.m. (c.s.t.), in the Ruth Neff Conference Room on the 17th Floor of the L & C Tower, at 4th Ave. and Church Street, Nashville, TN 37243.

- Thursday, October 17, 2006, at 7 p.m. (e.s.t.), in the large conference room of the Jackson Environmental Field Office at 1625 Hollywood Drive, Jackson, TN 38305.
- Thursday, October 19, 2006, at 7 p.m. (c.s.t.), in the large conference room of the Knoxville Environmental Field Office at 3711 Middlebrook Pike, Knoxville, TN 37921.

On the same day, September 4, 2006, the division issued Public Notice, announcing its intent to issue the TMSP. Copy of the draft TMSP permit was made available in an electronic format on the division's web site at http://www.state.tn.us/environment/wpc/ppo/tmsp_tnr050000.shtml. The proposed NPDES permit was drafted in accordance with the provisions of the Federal Water Pollution Control Act, the Tennessee Water Quality Control Act, and other lawful standards and regulations. The division received comments through November 10, 2006. This Notice of Determination (NOD) serves as the division's response to issues that were raised at the hearing and/or submitted during the subsequent comment period.

Comments received and responses

- 1. Comment: Table L-2 "Monitoring Requirements for Landfills and Land Application Sites" had the following reference: "The MDL for magnesium is 0.02 mg/L method 200.6" which appeared to be included by error.**

Response: The footnote in Table L-2 was a typographical error, and has been removed from the final version of the TMSP. It should be noted that State's General Water Quality Criteria Rule, specifically Chapter 1200-4-3-.05: "Interpretation of Criteria," does not have a required detection level (RDL) or a method detection level (MDL) listed for magnesium.
- 2. Comment: There were comments requesting that the division withhold issuing the permit until after the Federal Multi-Sector General Permit (MSGP) had been issued to insured that the two permits are conceptually similar.**

Response: The division agreed with and withheld issuing this permit until after the MSGP is issued. The MSGP was issued on September 29, 2008. The division is now issuing our TMSP.
- 3. Comment: There were comments to have the annual storm water monitoring reports sent to the Nashville Central Office, as was previously done, instead of the respective Environmental Field Offices.**

Response: The reports will be sent to the Nashville Central Office as previously done.
- 4. Comment: There were comments about the requirement for sampling and analyzing storm water from all industrial sectors including those previously exempt.**

Response: The division expanded to sampling and analyzing requirement in the draft to emulate the federal draft MSGP. EPA has not completed its analysis of benchmark monitoring exceedances and how they relate to either water quality or effectiveness of control measures. Therefore, the MSGP was issued without the additional Total Suspended Solids (TSS) requirement for all sectors. The division has also dropped this proposed requirement, which would have significantly expanded the benchmark monitoring. The same sector that required monitoring in the previous permit requires stormwater monitoring in this permit.

5. **Comment:** **Several permittees expressed concern regarding the bench mark for total aluminum (0.75 mg/L). The permittees argued that considering an abundance of aluminum in soil, the benchmark was too low.**

Response: The previous TMSP did not have effluent limitations for the facility's storm water runoff, except for those facilities with established federal effluent guidelines for storm water discharges, and for storm water discharges composed of coal pile runoff (see Parts 5.1 and 5.2 of the TMSP). All parameters were monitored on a "report" only basis. Similarly, the new permit will not establish effluent limitations, but will require reporting of effluent characteristics. Nevertheless, "benchmarks" will be established for each of the monitored parameters.

The division is not assigning limits for these parameters at this time since it is the intent of the division that the permittee institutes a Storm Water Pollution Prevention Plan (SWPPP) in order to minimize the discharge of these pollutants from storm water outfalls. It is the opinion of the division that the best method for dealing with potential pollution associated with storm water discharges from any facility is through implementation of an aggressive SWPPP, coupled with discharge monitoring to verify SWPPP effectiveness.

In order to assist the permittee in the evaluation of the effectiveness of the SWPPP, benchmark values developed for the TMSP were provided for comparison. These benchmark values (bench marks) were developed by the EPA and the State of Tennessee and are based on data submitted by similar industries for the development of the multi-sector general storm water permit. The benchmarks are target values and should not be construed to represent permit limits

Abundance of aluminum and other metals found in the soils of Tennessee may be a cause for exceedance(s) of benchmark for those permittees with high total suspended solids (TSS) content in storm water runoff samples. For example, sectors F and L have reported median values of total aluminum of 0.96 and 1.5 mg/L, respectively, which were higher than the benchmark of 0.75 mg/L.

We suspect, based on a small survey of facilities reporting high aluminum values that many of the reported exceedances of benchmarks for aluminum are a result of high TSS in samples that originate from unstabilized soils at those industrial sites.

Erosion control, soil stabilization and sediment control at industrial and non-industrial portions of a permitted facility greatly reduces amount of soil particles contained in the storm water runoff. Correct sampling procedures (i.e. collecting a storm water sample representative of industrial activities only, and in the water column, rather than collecting sediment from the bottom of a storm water conveyance) further reduces amount of soil particles in a sample. Minimization of erosion problems at any site greatly reduces amount of TSS, which consequently results in greatly reduced total aluminum values.

The Tennessee General Water Quality Criteria Rule, specifically Chapter 1200-4-3-.03: "Criteria for Water Uses," does not have a recommended Criterion Maximum Concentration (CMC, Acute Water Quality Criteria) list for aluminum. The EPA's

recommended Criterion Maximum Concentration for total aluminum remains unchanged, at 0.750 (mg/L). EPA's NPDES Multi-Sector General Permits for Storm Water Discharges Associated With Industrial Activities retains a benchmark for total aluminum of 0.75 mg/L. Based on the above discussion, the division will also retain the total aluminum benchmark of 0.75 mg/L in the new TMSP.

- 6. Comment: Several permittees expressed concern regarding the benchmark of other metals, particularly copper, lead, nickel and zinc. The permittees argued that considering wide application of copper and zinc in industrial activities, the benchmarks were too low.**

Response: The rationale for the draft permit proposed the following new benchmarks (expressed in mg/L):

<u>Parameter</u>	<u>Previous Permit</u>	<u>Draft Permit</u>
Copper	0.0636	0.014
Lead	0.156	0.091
Nickel	2.679	0.453
Zinc	0.395	0.161

The widespread application of various metals, particularly copper and zinc, at industrial facilities in Tennessee, does not constitute a compelling rationale for eliminating or increasing benchmarks of any pollutant present in facilities storm water runoff. As stated above, the permittees argued that considering the wide application of copper and zinc in industrial activities, the benchmarks were too low. However, none of the permittees proposed new benchmarks, or a rationale for determining higher benchmarks, which would ensure protection of designated uses of the waters of the State of Tennessee.

Benchmarks for copper, lead, nickel and zinc that were previously included in the TMSP as Criterion Maximum Concentration (CMC) values, and are hardness and TSS dependent, were adjusted to in-stream allowable criteria using a hardness of 25 mg/L (most conservative assumption as defined in the General Water Quality Criteria) and TSS of 30 mg/L (median value of all reported TSS samples in Tennessee). The water quality based calculations for metals are based on the Rule 1200-4-3 General Water Quality Criteria (revised June 2008).

The water quality based concentration calculations for copper, lead, nickel and zinc are in the following table, expressed in micrograms per liter (ug/L).


Based on the above explanations, the division has adjusted the benchmark for total nickel from 2.679 to 0.875; and for total copper from 0.0636 to 0.018 mg/L in the new TMSP. The benchmark values for lead and zinc were unchanged.

WATER QUALITY BASED CALCULATIONS FOR METALS STORM WATER DISCHARGE							
FACILITY: ANY COMPANY NAME							
PERMIT #: TNR05XXXX							
Stream (1Q10)	Waste Flow	Ttl. Susp. Solids	Hardness (as CaCO ₃)	Stream Allocation			
[MGD]	[MGD]	[mg/l]	[mg/l]	[%]			
Any Flow	Any Flow	30	25	100			
EFFLUENT CHARACTERISTIC	Fish/Aqua. Life Water Quality Criteria		Effluent Fraction Dissolved [Fraction]	Fish & Aquatic Life Water Quality Criteria (1Q10)			
	Chronic	Acute		In-Stream Allowable		Calc. Effluent Concentration	
	[ug/l]	[ug/l]	[Fraction]	Chronic [ug/l]	Acute [ug/l]	Chronic [ug/l]	Acute [ug/l]
	Copper *	2.739	3.640	0.200	13.709	18.217	13.7
Lead *	0.541	13.882	0.093	5.825	149.485	5.8	149.5
Nickel *	16.096	144.918	0.166	97.167	874.834	97.2	874.8
Zinc *	36.498	36.202	0.091	399.965	396.720	400.0	396.7
The in-stream allowable criteria and calculated effluent concentrations are in the total recoverable form.							

Determination

The division's decision on this matter is to issue an NPDES Multi-Sector General Permit for Storm Water Discharges From Industrial Activities, Permit No. TNR050000.

DATE: 15th May, 2009



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 Manager, Permit Section