ENVIRONMENTAL MANAGEMENT COMMISSION
ANALYSIS FOR PROPOSED AMENDMENT TO AIR TOXICS RULE

Rule Amendments: 15A NCAC 02Q .0711 Emission Rates Requiring a Permit

Rule Topic: Clerical Revision to 15A NCAC 02Q .0711 (526)

DENR Division: Division of Air Quality

Agency Contact: Joelle Burleson, Rule Development Branch Supervisor
Division of Air Quality (DAQ)
(919) 707-8720
Joelle.Burleson@ncdenr.gov

Analyst: Patrick Knowlson, DAQ
(919) 707-8711
Patrick.Knowlson@ncdenr.gov

Impact Summary:

State government:	No
Local government:	No
Substantial impact:	No

Statutory Authority: G.S. 143-215.3(a)(1); 143-215-107; 143-215.108; 143B-282;

Necessity: To make clerical revisions to reflect toxic air pollutant permitting emission rates (TPER) for unobstructed and vertically oriented emission release points in appropriate columns.

I. Executive Summary

An amendment to Rule 15A NCAC 02Q .0711, *Emission Rates Requiring a Permit*, was approved by the Environmental Management Commission (EMC) on March 13, 2014 and became effective on May 1, 2014. Staff of the Division of Air Quality (DAQ) identified clerical issues with three toxic air pollutants during that rulemaking. Rule 15A NCAC 02Q .0711 needs to be revised to update the toxic pollutant emission rates (TPERs) in Paragraph (b) for these three toxic air pollutants. This rule amendment will not have a fiscal impact since the fiscal impact was originally accounted for in the May 1, 2014 amendments.

II. Background

Rule amendments to the air toxics permitting requirements incorporating Session Law 2012-91 were approved in the March 2014 EMC meeting. The rule became effective on May 1, 2014. One of the amendments was to Rule 15A NCAC 02Q .0711, *Emission Rates Requiring a Permit*, which added an additional set of TPERs that would apply to those situations where air pollutant emission release points at a given facility are non-obstructed and vertically oriented.

DAQ staff has identified clerical issues in the spreadsheet used to calculate the TPER values that was transferred into the table in Paragraph (b) of the rule. The rule is proposed to be revised to reflect the TPER values for three pollutants in the appropriate columns as follows. The value of 2.0 lb/hr for ethylene glycol monoethyl ether is to be reflected in the acute systemic column instead of the acute irritant column. For two pollutants the TPER values were inadvertently left out. The value of 31.59 lb/hr for methyl isobutyl ketone is to be reflected in the column for acute irritants and the value of 197.96 lb/day for toluene in the column for chronic toxicants.

III. Description of Existing Rule

Rule 15A NCAC 02Q .0711, *Emission Rates Requiring a Permit,* sets out the toxic pollutant emission rates (TPER) for which a permit to emit toxic air pollutants is required. The TPERs are used in the first step of evaluating a facility's toxic air emissions. The facility-wide emissions level is simply compared to the TPER for a given toxic air pollutant to determine whether further analysis (modeling) is necessary. One can think of this as a simple screening step. The TPERs are conservatively set thresholds below which, even under the worst case air pollutant dispersion conditions, impacts at the property boundary would not be expected to approach the health based ambient air levels (AALs) that are defined in Rule 15A NCAC 02D .1104, *Toxic Air Pollutant Guidelines*.

IV. Motivation for Proposed Rule

The Division of Air Quality developed a separate set of screening thresholds for analyzing toxic air pollutants emitted from unobstructed vertical emission release points (stacks) at a facility. This additional set of TPERs were added as a table in Paragraph (b) of Rule 15A NCAC .0711 and became effective on May 1, 2014. The TPERs are back-calculated from the AAL guidelines in Rule 15A NCAC 2D .1104 using conservative assumptions about emissions and dispersion characteristics (e.g. worst case meteorology and stack parameters). There would be a corresponding TPER in Paragraph (b) of Rule 15A NCAC .0711 for each AAL in Rule 15A NCAC 2D .1104.

After the rule became effective on May 1, 2014, DAQ staff identified clerical issues for three toxic air pollutants in the spreadsheet used to calculate the TPER values in the table in Paragraph (b) of the rule. The intent of the amendment that became effective on May 1, 2014 was to reduce unnecessary regulatory burden to facilities that emit toxic air pollutants from unobstructed, vertical emission points. The proposed rule amendment will provide the regulatory relief and clarity for these three pollutants as originally intended.

V. Changes from the Regulatory Baseline

The regulatory baseline is the current rule, 15A NCAC 02Q .0711, that was amended and became effective on May 1, 2014. The rule is proposed to be revised to reflect the TPER values for three pollutants in the appropriate columns as follows. The value of 2.0 lb/hr for ethylene glycol monoethyl ether is to be reflected in the acute systemic column instead of the acute irritant column. For two other toxic air pollutants, the TPER values were inadvertently left out in the table in Paragraph (b). The value of 31.59 lb/hr for methyl isobutyl ketone is to be reflected in

the column for acute irritants and the value of 197.96 lb/day for toluene in the column for chronic toxicants.

VI. Estimating the Fiscal Impacts to Affected Sources

A fiscal note was developed for the May 1, 2014 amendment and was approved by the Office of State Budget and Management (OSBM) on June 28, 2013. It was published on their website at http://www.osbm.state.nc.us/files/pdf_files/DENR06282013.pdf.

The above fiscal note estimated the impacts for adding the new set of TPERs for unobstructed vertical stacks. The estimate was for all the pollutants in the table. Impacts were not pollutant-specific. Annual fiscal impacts of $53,120 were estimated for fiscal years 2013 through 2018. The fiscal impacts for the three pollutants, ethylene glycol monoethyl ether, methyl isobutyl ketone, and toluene, were included in that estimate. The estimated fiscal impact can be found on Pages 15 and 16 of the above referenced fiscal note.

The proposed clerical revision to Rule 15A NCAC .0711 to reflect the correct TPER values for the three toxic air pollutants will not have a fiscal impact. The fiscal impact was accounted for in the original fiscal note.

VII. Public Health

The proposed rule amendment does not change the AAL for any toxic air pollutant emitted from an affected facility. The AAL is a health based standard and is designed to protect public health by minimizing exposure to and the resulting risk from toxic air pollutants emitted from a facility. The rule amendment is a clerical revision.

Appendix A

15A NCAC 02Q .0711 is proposed for amendment as follows:

15A NCAC 02Q .0711 EMISSION RATES REQUIRING A PERMIT

(a) A permit to emit toxic air pollutants is required for any facility where one or more emission release points are obstructed or non-vertically oriented whose actual rate of emissions from all sources are greater than any one of the following toxic air pollutant permitting emissions rates:

Pollutant (CAS Number)	Carcinogens lb/yr	Chronic Toxicants lb/day	Acute Systemic Toxicants lb/hr	Acute Irritants lb/hr
acetaldehyde (75-07-0)				6.8
acetic acid (64-19-7)				0.96
acrolein (107-02-8)				0.02
acrylonitrile (107-13-1)		0.4	0.22	
ammonia (7664-41-7)				0.68
aniline (62-53-3)			0.25	
arsenic and inorganic arsenic compounds	0.053			
asbestos (1332-21-4)	5.7×10^{-3}			
aziridine (151-56-4)		0.13		
benzene (71-43-2)	8.1			
benzidine and salts (92-87-5)	0.0010			
benzo(a)pyrene (50-32-8)	2.2			
benzyl chloride (100-44-7)			0.13	
beryllium (7440-41-7)	0.28			
beryllium chloride (7787-47-5)	0.28			
beryllium fluoride (7787-49-7)	0.28			
beryllium nitrate (13597-99-4)	0.28			
bioavailable chromate pigments, as chromium (VI) equivalent	0.0056			
bis-chloromethyl ether (542-88-1)	0.025			
bromine (7726-95-6)				0.052
1,3-butadiene (106-99-0)	11			
cadmium (7440-43-9)	0.37			

cadmium acetate (543-90-8)	0.37			
cadmium bromide (7789-42-6)	0.37			
carbon disulfide (75-15-0)		3.9		
carbon tetrachloride (56-23-5)	460			
chlorine (7782-50-5)		0.79		0.23
chlorobenzene (108-90-7)		46		
chloroform (67-66-3)	290			
chloroprene (126-99-8)		9.2	0.89	
cresol (1319-77-3)			0.56	
p-dichlorobenzene (106-46-7)				16.8
dichlorodifluoromethane (75-71-8)		5200		
dichlorofluoromethane (75-43-4)		10		
di(2-ethylhexyl)phthalate (117-81-7)		0.63		
dimethyl sulfate (77-78-1)		0.063		
1,4-dioxane (123-91-1)		12		
epichlorohydrin (106-89-8)	5600			
ethyl acetate (141-78-6)			36	
ethylenediamine (107-15-3)		6.3	0.64	
ethylene dibromide (106-93-4)	27			
ethylene dichloride (107-06-2)	260			
ethylene glycol monoethyl ether (110-80-5)		2.5	0.48	
ethylene oxide (75-21-8)	1.8			
ethyl mercaptan (75-08-1)			0.025	
fluorides		0.34	0.064	
formaldehyde (50-00-0)				0.04
hexachlorocyclopentadiene (77-47-4)		0.013	0.0025	
hexachlorodibenzo-p-dioxin (57653- 85-7)	0.0051			
n-hexane (110-54-3)		23		
hexane isomers except n-hexane				92
hydrazine (302-01-2)		0.013		
hydrogen chloride (7647-01-0)				0.18
hydrogen cyanide (74-90-8)		2.9	0.28	
hydrogen fluoride (7664-39-3)		0.63		0.064
hydrogen sulfide (7783-06-4)		1.7		
maleic anhydride (108-31-6)		0.25	0.025	

manganese and compounds		0.63		
manganese cyclopentadienyl tricarbonyl (12079-65-1)		0.013		
manganese tetroxide (1317-35-7)		0.13		
mercury, alkyl		0.0013		
mercury, aryl and inorganic compounds		0.013		
mercury, vapor (7439-97-6)		0.013		
methyl chloroform (71-55-6)		250		64
methylene chloride (75-09-2)	1600		0.39	
methyl ethyl ketone (78-93-3)		78		22.4
methyl isobutyl ketone (108-10-1)		52		7.6
methyl mercaptan (74-93-1)			0.013	
nickel carbonyl (13463-39-3)		0.013		
nickel metal (7440-02-0)		0.13		
nickel, soluble compounds, as nickel		0.013		
nickel subsulfide (12035-72-2)	0.14			
nitric acid (7697-37-2)				0.256
nitrobenzene (98-95-3)		1.3	0.13	
n-nitrosodimethylamine (62-75-9)	3.4			
non-specific chromium (VI) compounds, as chromium (VI) equivalent	0.0056			
pentachlorophenol (87-86-5)		0.063	0.0064	
perchloroethylene (127-18-4)	13000			
phenol (108-95-2)			0.24	
phosgene (75-44-5)		0.052		
phosphine (7803-51-2)				0.032
polychlorinated biphenyls (1336-36- 3)	5.6			
soluble chromate compounds, as chromium (VI) equivalent		0.013		
styrene (100-42-5)			2.7	
sulfuric acid (7664-93-9)		0.25	0.025	
tetrachlorodibenzo-p-dioxin (1746- 01-6)	0.00020			
1,1,1,2-tetrachloro-2,2,-difluoroethane (76-11-9)		1100		
1,1,2,2-tetrachloro-1,2-difluoroethane (76-12-0)		1100		

1,1,2,2-tetrachloroethane (79-34-5)	430			
toluene (108-88-3)		98		14.4
toluene diisocyanate,2,4-(584-84-9) and 2,6-(91-08-7) isomers		0.003		
trichloroethylene (79-01-6)	4000			
trichlorofluoromethane (75-69-4)			140	
1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)				240
vinyl chloride (75-01-4)	26			
vinylidene chloride (75-35-4)		2.5		
xylene (1330-20-7)		57		16.4

(b) A permit to emit toxic air pollutants is required for any facility where all emission release points are unobstructed and vertically oriented whose actual rate of emissions from all sources are greater than any one of the following toxic air pollutant permitting emissions rates:

Pollutant (CAS Number)	Carcinogens lb/yr	Chronic Toxicants lb/day	Acute Systemic Toxicants lb/hr	Acute Irritants lb/hr
acetaldehyde (75-07-0)				28.43
acetic acid (64-19-7)				3.90
acrolein (107-02-8)				0.08
acrylonitrile (107-13-1)		1.3	1.05	
ammonia (7664-41-7)				2.84
aniline (62-53-3)			1.05	
arsenic and inorganic arsenic compounds	0.194			
asbestos (1332-21-4)	7.748×10^{-3}			
aziridine (151-56-4)		0.3		
benzene (71-43-2)	11.069			
benzidine and salts (92-87-5)	1.384×10^{-3}			
benzo(a)pyrene (50-32-8)	3.044			
benzyl chloride (100-44-7)			0.53	
beryllium (7440-41-7)	0.378			
beryllium chloride (7787-47-5)	0.378			
beryllium fluoride (7787-49-7)	0.378			

beryllium nitrate (13597-99-4)	0.378			
bioavailable chromate pigments, as chromium (VI) equivalent	0.008			
bis-chloromethyl ether (542-88-1)	0.034			
bromine (7726-95-6)				0.21
1,3-butadiene (106-99-0)	40.585			
cadmium (7440-43-9)	0.507			
cadmium acetate (543-90-8)	0.507			
cadmium bromide (7789-42-6)	0.507			
carbon disulfide (75-15-0)		7.8		
carbon tetrachloride (56-23-5)	618.006			
chlorine (7782-50-5)		1.6		0.95
chlorobenzene (108-90-7)		92.7		
chloroform (67-66-3)	396.631			
chloroprene (126-99-8)		18.5	3.69	
cresol (1319-77-3)			2.32	
p-dichlorobenzene (106-46-7)				69.50
dichlorodifluoromethane (75-71-8)		10445.4		
dichlorofluoromethane (75-43-4)		21.1		
di(2-ethylhexyl)phthalate (117-81-7)		1.3		
dimethyl sulfate (77-78-1)		0.1		
1,4-dioxane (123-91-1)		23.6		
epichlorohydrin (106-89-8)	7655.891			
ethyl acetate (141-78-6)			147.41	
ethylenediamine (107-15-3)		12.6	2.63	
ethylene dibromide (106-93-4)	36.896			
ethylene dichloride (107-06-2)	350.511			
ethylene glycol monoethyl ether (110-80-5)		5.1	<u>2.00</u>	~~2.00~~
ethylene oxide (75-21-8)	2.490			
ethyl mercaptan (75-08-1)			0.11	
fluorides		0.7	0.26	
formaldehyde (50-00-0)				0.16
hexachlorocyclopentadiene (77-47-4)		2.5×10^{-2}	0.01	
hexachlorodibenzo-p-dioxin (57653- 85-7)	0.007			
n-hexane (110-54-3)		46.3		
hexane isomers except n-hexane				379.07

hydrazine (302-01-2)		2.5×10^{-2}		
hydrogen chloride (7647-01-0)				0.74
hydrogen cyanide (74-90-8)		5.9	1.16	
hydrogen fluoride (7664-39-3)		1.3		0.26
hydrogen sulfide (7783-06-4)		5.1		
maleic anhydride (108-31-6)		0.5	0.11	
manganese and compounds		1.3		
manganese cyclopentadienyl tricarbonyl (12079-65-1)		2.5×10^{-2}		
manganese tetroxide (1317-35-7)		0.3		
mercury, alkyl		2.5×10^{-3}		
mercury, aryl and inorganic compounds		2.5×10^{-2}		
mercury, vapor (7439-97-6)		2.5×10^{-2}		
methyl chloroform (71-55-6)		505.4		257.98
methylene chloride (75-09-2)	2213.752		1.79	
methyl ethyl ketone (78-93-3)		155.8		93.19
methyl isobutyl ketone (108-10-1)		107.8		31.59
methyl mercaptan (74-93-1)			0.05	
nickel carbonyl (13463-39-3)		2.5×10^{-2}		
nickel metal (7440-02-0)		0.3		
nickel, soluble compounds, as nickel		2.5×10^{-2}		
nickel subsulfide (12035-72-2)	0.194			
nitric acid (7697-37-2)				1.05
nitrobenzene (98-95-3)		2.5	0.53	
n-nitrosodimethylamine (62-75-9)	4.612			
non-specific chromium (VI) compounds, as chromium (VI) equivalent	0.008			
pentachlorophenol (87-86-5)		0.1	0.03	
perchloroethylene (127-18-4)	17525.534			
phenol (108-95-2)			1.00	
phosgene (75-44-5)		0.1		
phosphine (7803-51-2)				0.14
polychlorinated biphenyls (1336-36- 3)	7.656			
soluble chromate compounds, as chromium (VI) equivalent		2.6×10^{-2}		
styrene (100-42-5)			11.16	

sulfuric acid (7664-93-9)		0.5	0.11	
tetrachlorodibenzo-p-dioxin (1746- 01-6)	2.767×10^{-4}			
1,1,1,2-tetrachloro-2,2,-difluoroethane (76-11-9)		2190.2		
1,1,2,2-tetrachloro-1,2-difluoroethane (76-12-0)		2190.2		
1,1,2,2-tetrachloroethane (79-34-5)	581.110			
toluene (108-88-3)		197.96		58.97
toluene diisocyanate,2,4-(584-84-9) and 2,6-(91-08-7) isomers		8.4×10^{-3}		
trichloroethylene (79-01-6)	5442.140			
trichlorofluoromethane (75-69-4)			589.66	
1,1,2-trichloro-1,2,2-trifluoroethane (76-13-1)				1000.32
vinyl chloride (75-01-4)	35.051			
vinylidene chloride (75-35-4)		5.1		
xylene (1330-20-7)		113.7		68.44

(c) For the following pollutants, the highest emissions occurring for any 15-minute period shall be multiplied by four and the product shall be compared to the value in Paragraph (a) or (b) as applicable. These pollutants are:

(1) acetaldehyde (75-07-0);
(2) acetic acid (64-19-7);
(3) acrolein (107-02-8);
(4) ammonia (7664-41-7);
(5) bromine (7726-95-6);
(6) chlorine (7782-50-5);
(7) formaldehyde (50-00-0);
(8) hydrogen chloride (7647-01-0);
(9) hydrogen fluoride (7664-39-3); and
(10) nitric acid (7697-37-2).

History Note: *Authority G.S. 143-215.3(a)(1); 143-215-107; 143-215.108; 143B-282;*
Rule originally codified as part of 15A NCAC 02H .0610;
Eff. July 1, 1998;
Amended Eff. _____; July7, 2014; May 1, 2014; January 1, 2010; June 1, 2008; April 1, 2005; February 1, 2005; April 1, 2001.