

MANAGING BRIDGE WASH WATER:

4-1-08

Overview

NCDOT has established these guidelines to assist the Contractor in meeting the water quality requirements for appropriate collection and disposal of wash water associated with bridge paint removal, particularly when red lead oxide paint is to be removed.

This guidance sets forth the minimum steps required to aid in compliance with environmental laws. It remains the responsibility of the Contractor to determine whether more than these minimum steps are required and to perform the work required in whatever manner necessary to comply with all applicable laws.

The Contractor shall submit and obtain approval of the Wash Water Sampling and Disposal Plan (WSDP) from the Engineer prior to start of work. The WSDP shall include a written plan for the collection, sampling, treatment and disposal of the Wash water, and will include a spill contingency plan.

In order to determine the appropriate disposal method for wash water, adequate advance planning is necessary by the Contractor. The Contractor shall obtain all required permits and comply with regulations concerning disposal of the wash water.

Initial sampling and testing of the wash water will determine whether it shall be handled and disposed of as a non-hazardous or as a hazardous liquid waste.

The wash water from low-pressure bridge washing could have high pH or alkalinity, high turbidity due to total suspended solids (TSS), or other regulated pollutants or contaminants, prohibiting disposal to surface waters or to the ground surface.

Representative sampling and testing methodology shall conform to 15A NCAC 02B .0103, "Analytical Procedures".

Wash water shall be tested for pollutants listed in 15A NCAC 02B .0211 (3), 15A NCAC 02T .0505 (b) (1) and 15A NCAC 2T .0905 (h). A summary of the listed pollutants and the maximum allowable concentrations for discharge to surface waters is attached.

If wash water is to be disposed of at a licensed wastewater treatment facility, pollutant testing shall conform to the policies of that facility.

With the appropriate permits, surface or sub-surface land application of wash water could provide a disposal option when licensed waste disposal facilities are not available.

If pollutant levels meet the thresholds in the .0505 or .0905 regulations, land application of the wash water at agronomic rates or as irrigation water may be approved by the Engineer.

Regulations and Specifications

Compliance with all applicable state and federal regulations is required, in accordance with the *Standard Specifications* for Article 107-1, and including but not limited to: NCDENR DWQ NCAC 15A 02B .0100, .0200 and .0300 as amended effective May 1, 2007; NCDENR DWQ 15A NCAC 2T .0500, 0.600, 0.900; NCDENR DWM, 15A NCAC 13A .0100 - .0117.

All solid waste generated during the washing process shall be disposed of in accordance with Section 802 of the *Standard Specifications*.

Collection and Containment

Total containment of the wash water is required. During the bridge washing process, the Contractor shall collect; sample, test, monitor, manage, neutralize, filter and dispose of all wash water generated by the bridge washing process.

The wash water will not be allowed to enter storm sewers, bridge drainage downspouts or bridge approach downspouts, ditches, surface waters, floodplains or wetlands, unless in compliance with the approved Washwater Sampling and Disposal Plan, and any permit conditions.

Disposal

The Contractor shall obtain approval for the discharge or surface application method and location from the Engineer prior to the beginning of the bridge washing operation.

The Contractor shall obtain a Soil Evaluation report from a North Carolina Licensed Soil Scientist and obtain permit approval from NCDENR, DWQ prior to land application or irrigation of the wash water.

Depending on the approved disposal method, the wash water may be land applied to the ground surface as reclaimed water or as wastewater, according to permit conditions.

Depending on permit conditions, the wash water could also be disposed of in surface waters, such as a pond, or applied below the ground surface in absorption trenches.

If the wash water exceeds any of the pollutant levels limits described for the adjacent waters in the NCAC 15A 02B .0200 rules, a permit from the DWQ Land Application Unit may be required, per the NCAC 15A 2T.0500 rules.

If the wash water does not exceed the pollutant levels described for the adjacent waters in the NCAC 15A 02B .0200 rules, a permit from the DWQ Land Application Unit may not be required, but the above conditions will still apply.

If the wash water meets the pollutant requirements for reclaimed wastewater in NCAC 15A 2T .0900 rules, then it may be used as irrigation water on any level to gently sloping vegetated surface within NCDOT right of way.

The Contractor shall not discharge at erosive velocities or in concentrated flow within 50 feet of any jurisdictional surface waters.

The Contractor shall cover and contain the wash water to prevent loss to the environment at all times including during transport and delivery to the licensed facility.

The wash water may also be hauled to a licensed treatment or disposal facility, in accordance with the approved WSDP.

Documentation

The Contractor shall furnish a complete record for each load of wash water, with information on the point of generation, including the County name, Bridge number, State Project Number, the volume transported, and the name and location of the licensed disposal facility, or the location of the permitted disposal site.

The Contractor shall submit completed records to the Engineer prior to final payment.

	T15A 02B .0211 (3)	All Class C Waters	Trout Waters	Notes
(b)	Dissolved Oxygen	> 5 mg/l (daily average)	> 6 mg/l	> 4 mg/l (instantaneous)
(e)	Fecal coliform	< 200 ml (MF count)		based on five consecutive samples examined during any 30 day period, using Membrane Filter Method unless high turbidity requires use of tube dilution method.
(f)	Oils, deleterious substances; colored or other wastes			will not render the waters injurious to public health, secondary recreation or to aquatic life and wildlife or adversely affect the palatability of fish, aesthetic quality or impair the waters for designated uses....
(g)	pH	6.0 - 9.0		normal for waters in the area, swamp waters may have pH as low as 4.3 if it is the result of natural conditions.
(j)	Temperature	< 2.8°C (< 5.04°F) above natural water temp. not to exceed 29°C (84.2°F) for mountain/upper piedmont waters and 32°C (89.6°F) for lower piedmont/coastal plain waters	not be increased > 0.5°C (0.9°F), not to exceed 20°C (68°F).	
(k)	Turbidity	< 50 NTU	<10 NTU	Use BMPs per Rule .0202(6)
(i)	Arsenic	< 50 µg/l	< 50 µg/l	
(ii)	Beryllium	< 6.5 µg/l	< 6.5 µg/l	
(iii)	Cadmium	< 4.0 µg/l	< 2.0 µg/l	
(iv)	Chlorine, total residual	< 17 µg/l	< 17 µg/l	
(v)	Chromium	< 50 µg/l	< 50 µg/l	total recoverable
(vi)	Cyanide	< 5.0 µg/l	< 5.0 µg/l	
(vii)	Fluorides	< 1.8 µg/l	< 1.8 µg/l	
(viii)	Lead	< 25 µg/l	< 25 µg/l	total recoverable, may not exceed an instream level of 3.1 µg/l from the discharge
(ix)	MBAS	< 0.5 µg/l	< 0.5 µg/l	(Methylene Blue Active Substances)
(x)	Mercury	< 0.012 µg/l	< 0.012 µg/l	
(xi)	Nickel	< 88 µg/l	< 88 µg/l	
A	Aldrin	< 0.002 µg/l	< 0.002 µg/l	
B	Chlordane	< 0.004 µg/l	< 0.004 µg/l	
C	DDT	< 0.001 µg/l	< 0.001 µg/l	
D	Demeton	< 0.1 µg/l	< 0.1 µg/l	

E	Dieldrin	< 0.002 µg/l	< 0.002 µg/l
F	Endosulfan	< 0.05 µg/l	< 0.002 µg/l
G	Endrin:	< 0.002 µg/l	< 0.002 µg/l
H	Guthion	< 0.01 µg/l	< 0.01 µg/l
I	Heptachlor	< 0.004 µg/l	< 0.004 µg/l
J	Lindane	< 0.01 µg/l	< 0.01 µg/l
K	Methoxychlor	< 0.03 µg/l	< 0.03 µg/l
L	Mirex	< 0.001 µg/l	< 0.001 µg/l
M	Parathion	< 0.013 µg/l	< 0.013 µg/l
N	Toxaphene	< 0.0002 µg/l	< 0.0002 µg/l
O	Polychlorinated Phenols	< 0.001 µg/l	< 0.001 µg/l
P	Selenium	< 5 µg/l	< 5 µg/l
Q	Toluene	< 11 µg/l	< 0.36 µg/l
R	Trialkyltin compounds	< 0.008 µg/l	< 0.008 µg/l
			expressed as tributyltin

	15A NCAC 02T .0905 (h), Sampling requirements for Industrial Waste	15A NCAC 02T .0505 (b) (1) Minimum degree of treatment for new municipal facilities	15A NCAC 02T .0906 (a) Reclaimed Effluent Water Standards
	Total Organic Carbon		monthly average of ≤ 10 mg/l, daily maximum of ≤ 15 mg/l
	5-Day Biochemical Oxygen Demand (BOD5)	≤ 30 mg/l	
	Chemical Oxygen Demand (COD)		
	Nitrate Nitrogen (NO3-N)		
	Ammonia Nitrogen (NH3-N)	≤ 15 mg/l	monthly average of ≤ 4 mg/l, daily maximum of ≤ 6 mg/l
	Total Kjeldahl Nitrogen (TKN)		
	pH		
	Chloride		
	Total Phosphorus		
	Phenol		
	Total Volatile Organic Compounds		

			monthly geometric mean of ≤ 14/100ml, daily maximum of ≤ 25/100 ml
	<i>Fecal Coliform</i>	≤ 200 colonies/100 ml	
	<i>Calcium</i>		
	<i>Sodium</i>		
	<i>Magnesium</i>		
	<i>Sodium Absorption Ratio (SAR)</i>		
	<i>Total Trihalomethanes</i>		
	<i>Toxicity Test Parameters</i>		
	<i>Total Dissolved Solids (TDS)</i>		
	<i>Total Suspended Solids (TSS)</i>	≤ 30 mg/l	monthly average of ≤ 5 mg/l, daily maximum of ≤ 10 mg/l
	<i>Turbidity</i>		≤ 10 NTU's