

NCDOT Guidelines for Managing Hydrodemolition Water
Version 1.4

January 4, 2008

Overview

- ❑ NCDOT has established these guidelines to assist the Contractor in meeting the water quality requirements for appropriate disposal of the hydrodemolition water (HW) in a timely manner.
- ❑ This guidance addresses the collection, management and disposal of HW from a hydrodemolition process used for bridge deck restoration.
- ❑ 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 HW could have very 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.
- ❑ With the appropriate permits, surface or sub-surface land application of HW could provide a disposal option when licensed waste disposal facilities are not available.
- ❑ The Contractor must submit and obtain approval of the Hydrodemolition Water Management Plan (HWMP) from the Engineer prior to start of work. The HWMP shall include a written plan for the collection, treatment and disposal of the HW, and will include a pH control plan and a spill contingency plan.
- ❑ In order to determine the appropriate disposal method for HW, adequate advance planning is necessary by the Contractor.
- ❑ The Contractor must obtain all required permits and comply with regulations concerning disposal of HW.
- ❑ Initial sampling and testing of the HW will determine whether it must be handled and disposed of as a non-hazardous or as a hazardous liquid waste.
- ❑ The pH of the HW must be monitored, adjusted and maintained between pH 2.0 and 12.5 and as close to 7.0 as possible.

Regulations and Specifications

- ❑ Compliance with all applicable state and federal regulations is required, in accordance with NCDOT Standard Specifications Section 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 hydrodemolition process shall be disposed of in accordance with Section 802 of the NCDOT Standard Specifications.

Collection and Containment

- ❑ Total containment of the HW is required. During the bridge restoration process, the Contractor must collect; sample, test, monitor, manage, neutralize, filter and dispose of all HW generated by the hydrodemolition process.
- ❑ The HW shall not be allowed to enter storm sewers, bridge drainage downspouts or bridge approach downspouts, ditches, surface waters, floodplains or wetlands, unless in compliance with permit conditions.
- ❑ Bridge deck joints and drains shall be sealed in order to prevent release of HW to the ground surface or to surface waters.

pH Control Plan

- ❑ The Contractor shall sample and test the HW to determine if it is a characteristic hazardous waste (pH greater than or equal to 12.5 or lower than 2) or if it contains other regulated pollutants present at levels exceeding regulated thresholds
- ❑ Details in the pH control plan shall outline the methods of sampling, testing, calibration, monitoring, managing and neutralizing the pH in the HW if required.
- ❑ The pH neutralization must occur in a container, tank, or a transport vehicle.
- ❑ A written spill contingency plan must address how accidental spills or releases of HW will be contained, cleaned up and reported.
- ❑ The pH control plan shall list all personnel, equipment, and supplies necessary to obtain samples, testing methods, calibration methods, method of monitoring, management and neutralization of the pH if required.
- ❑ The Contractor shall specify in the pH control plan what actions will be taken in order for HW to meet the pH requirements including stoppage of work.
- ❑ A qualified employee of the Contractor shall administer the pH control plan. That individual shall be present on site during the hydrodemolition work and shall be authorized to take all actions necessary for the successful implementation of any pH adjustments.
- ❑ The Contractor will manage the HW at all times to prevent release of a hazardous waste to surface waters or to the ground surface and will adjust the pH when necessary prior to discharge or disposal. If the test results indicate that the HW has a pH greater than 12.5 or less than 2, (which is a characteristic of hazardous waste), then the HC shall adjust the pH towards a pH of 7 (neutral) prior to disposal, in accordance with the HW management plan.
- ❑ The pH-monitoring plan will include calibration of the pH meter with pH 7.0 and pH 14.0 standards at least once per day. Split and test at least one representative sample per day by a certified laboratory.
- ❑ The Contractor will document all actions taken to adjust the pH and provide copies of the daily reports to the Engineer. The Contractor will certify in writing that the testing equipment to be used is properly calibrated and include the data and correction information in the pH control plan.
- ❑ *Test results shall be obtained by using Method 9040 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846.*

Disposal

- ❑ The Contractor shall obtain approval for the discharge or surface application method and location from the Engineer prior to the beginning of the hydrodemolition 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 treated HW.
- ❑ Depending on the approved disposal method, the HW may be land applied to the ground surface as reclaimed water or as wastewater, according to permit conditions.
- ❑ Depending on permit conditions, the HW could also be disposed of in surface waters, such as a pond, or applied below the ground surface in absorption trenches.
- ❑ If the HW 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 HW 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 HW 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 HW to prevent loss to the environment during transport and delivery to the licensed facility.
- ❑ The HW may also be hauled to a licensed treatment or disposal facility, in accordance with the approved HWMP.

Documentation

- ❑ The Contractor shall furnish a complete record for each load of HW, 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.