UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

October 1, 2007

In Reply Refer To: WTR-7

Gary Jensen
Bay Area Rapid Transit District
P.O. Box 12688 (LKS-18)
Oakland, California 94604-2688

Re: August 28, 2007 Clean Water Act Inspection

Dear Mr. Jensen:

Enclosed is the September 24, 2007 report for our inspection of the Bay Area Rapid Transit District - Richmond Shop at 1101 13th Street., Richmond, CA, 94801. Please submit a short response to the Summary of Findings in Section 3.0 of this report to EPA (to the attention of Anna Yen), with copies to the City of Richmond and the Regional Water Quality Control Board, by **November 30, 2007**.

The main findings are summarized below:

1. This BART facility is not subject to any federal categorical standards. However, since the facility is a significant industrial user (SIU), it is subject to applicable pretreatment requirements in 40 CFR 403.
2. The facility has had longstanding compliance problems meeting the local limits for copper and zinc at the blow pit discharge point.
3. The facility is currently complying with local limits at the blow pit discharge point by hauling all blow pit discharge offsite for disposal.
4. The facility's previous pretreatment systems for the blow pit discharge have failed to solve compliance problems. The facility has a new electrocoagulation system on site as its new pretreatment system; it has not been installed and started up yet.

We would like to thank you and Mike Turner for your helpfulness and courtesy during the inspection. We remain available to you and the City of Richmond to assist in any way. If you have any questions, please call Anna Yen at (415) 972-3976 or e-mail her at yen.anna@epa.gov.

Sincerely,
<Original signed by>
Ken Greenberg
Chief, CWA Compliance Office

Enclosure

cc: Mary L. Phelps, City of Richmond, enclosure by e-mail
Michael Chee, RWQCB-San Francisco Bay, enclosure by e-mail

U.S. Environmental Protection Agency
Region 9
Clean Water Act Compliance Office

NPDES Compliance Evaluation Inspection Report

Industrial User:	Bay Area Rapid Transit District – Richmond Shop
Industrial User Address:	1101 13th Street, Richmond, CA 94801
Inspection Date:	August 28, 2007
EPA Region 9 Inspectors:	Greg Arthur, Environmental Engineer Anna Yen, Environmental Engineer Water Division, CWA Compliance Office
City of Richmond Inspectors:	Mary Phelps, Senior Industrial Waste Inspector Stephen Friday, Senior Industrial Waste Inspector City of Richmond, Public Works Department, Waste Water Division
Facility Contacts During Inspection:	Mike Turner, Assistant Superintendent, Rolling Stock & Shops Gary C. Jensen, Principal Engineer, System Safety

Report Prepared by Anna Yen on September 24, 2007.

1.0 Scope and Purpose

Based on the 2006 Pretreatment Annual Report submitted by the City of Richmond, this Bay Area Rapid Transit (BART) facility had been having compliance problems. The annual report indicated that fourteen notices of violation (NOVs) had been issued in 2006, for exceedances of local limits for copper and zinc. The main purpose of the inspection on August 28, 2007 was to learn more about the compliance issues and determine if additional steps need to be taken.

1.1 General and Process Description

This BART facility provides cleaning and maintenance services on BART trains. BART has four such facilities in the Bay Area. This Richmond facility services a total of 217

cars. "Cars" are connected to form a "train." This facility generally has two main sources of wastewater, with a separate pretreatment system and discharge point for each of these two main sources.

A. Blowdown Bay and Maintenance Shop
Blowdown of the undercarriages of BART cars and maintenance on cars are provided in this building.

The BART cars enter, by rail, the blowdown bay for undercarriage cleaning before proceeding to the maintenance shop for preventative maintenance. The undercarriages are blown down using air and steam. A surfactant called Suretech is also used in combination with the steam. The air dust is drawn into a hydrocyclone that separates the air from the water, with any water draining to the blow pit. Floor grating covers the level below the rails, so any liquid from blowdown of the cars or runoff from rainwater will collect in the blow pit.

Floor drains in the maintenance shop direct wastewater to the blow pit as well. Wastewater generated in the maintenance shop is primarily wash water from mopping down the floor of the shop.

BART cleans about 20 cars per week in the blowdown bay. Because of recurring problems meeting the local limits for copper and zinc, BART is currently hauling all wastewater from the blow pit for offsite disposal until it can find a wastewater treatment system that successfully keeps copper and zinc levels below the local limits. BART estimated that the volume hauled is approximately 6000 gallons every two weeks, meaning that the facility generates only about 400 gallons per day at the blow pit. According to the City of Richmond's 2006 Pretreatment Annual Report, the amount of wastewater discharged from the blow pit was less than 200 gallons per day.

Previously, when the facility sent wastewater to a treatment system instead of hauling the wastewater offsite, a lift station would pump the wastewater from the blow pit to a sump, which would lead to the treatment system.

<u>Pretreatment System A</u>
See Section 1.3

B. Train Wash
The exterior of BART trains are washed every day at the automated train wash, which is only partially enclosed similar to a regular car wash. A sodium hydroxide solution which contains a surfactant is used as both a brightener and soap in the train wash. It is mixed with water before being applied to the cars. Dirty wash water from the train wash is treated, with most of the water reclaimed for use in the rinse cycle and the reject water from the treatment system going directly to the sewer.

In the evenings, the interior of trains are also washed on a daily basis. The cleaning and carpet extraction processes take place in the storage yard that is on one side of the blowpit. The wastewater is collected in 55-gallon drums and sent back to the blow pit.

Pretreatment System B
See Section 1.3

1.2 Facility Wastewater Sources

BART generates wastewater streams from the blowdown bay, maintenance shop, and train wash. In particular, the wastewater sources are as follows:

- Wash water from cleaning undercarriage of trains
- Wash water from mopping floor of maintenance shop
- Wash water from cleaning interior of trains
- Wash water from automated train wash
- Reject water from the reverse osmosis treatment system

The first three wastewater sources listed above are currently being hauled offsite. The second to last wastewater source above is reused, with the reverse osmosis reject water being discharged to the city sewer system.

Other wastes
The following are sources of solid wastes that are hauled offsite:

- the blow pit
- the wash rinse tanks of the train wash.

BART used to remove the solids from the blow pit by vac-truck and had the solids hauled off for hazardous waste disposal approximately once every two to three months. Since the facility is currently hauling all wastewater from the blow pit, solids are removed with the wastewater.

At the train wash, solids settle out of the wastewater in the wash rinse tanks. The facility tests the water and submits the results to the City of Richmond. Once it obtains permission from the City of Richmond to batch discharge, it pumps out a tank to a level two to three feet from the bottom of the tank. An outside company removes the remaining contents and hauls the waste off as non-hazardous waste.

1.3 Facility Process Wastewater Treatment System

BART typically has two on-site batch treatment systems: one for the blow pit wastewater and another for the bus wash wastewater. For the time being, BART is hauling all blow pit wastewater offsite instead of treating the wastewater for discharge to the sewers.

Pretreatment System A
BART has tried different methods to keep copper and zinc levels in the blow pit wastewater below the local limits. However, the facility has continued to have

compliance problems. The last treatment system BART tried was an ion exchange resin system. But the facility found iron fouling to be a significant problem. The facility has now purchased an electrocoagulation system. The equipment is on site, but the facility has not installed it and started it up yet.

Pretreatment System B

The pretreatment system consists of two process lines of the following:

1. The used sodium hydroxide solution is neutralized with sulfuric acid.
2. The neutralized solution of step #1 and used rinse water from the train wash goes through two carbon filters in series,
3. then to a reverse osmosis system.
    a. The reject water is sent to a drain which leads directly to the city sewer ("Discharge Point B").
    b. The treated water is sent through a polishing filter and then reclaimed for the train wash.

1.4 Wastewater Discharge

Wastewater from this BART facility will discharge to the City of Richmond Wastewater Treatment Plant. The treatment plant is owned by the City of Richmond and operated by a private company, Veolia. The City of Richmond Wastewater Treatment Plant is operated under an NDPES permit (No. CA0038539[*]) as part of the West County Agency, and all regulated sludge and effluent is combined with West County Wastewater District's sludge and effluent.

2.0 Compliance with Federal Categorical Standards

This facility is not subject to any federal categorical standards.

2.1 Compliance with Other Federal Pretreatment Requirements

This facility is a significant industrial user (SIU) because it discharges, on average, more than 25,000 gallons per day of process wastewater to the POTW. Therefore, this facility is subject to applicable pretreatment requirements in 40 CFR 403, including the reporting requirements contained in 40 CFR 403.12.

2.2 Compliance with Local Limits

The facility has two discharge points, both of which are permitted and required to be sampled. This facility has had longstanding problems meeting the local limits for copper and zinc at the blow pit discharge point ("Discharge Point A"). BART stated that it has had compliance problems with the copper and zinc local limits since 2004. Beginning in May 2007, the facility began hauling all blow pit discharge offsite as hazardous waste.

[*] Currently expired, has not been renewed as of the writing of this report.

Sampling Data

The facility's permit requires that the facility perform composite sampling and analysis, at both sampling points, for total copper, lead, mercury, nickel, and zinc on a quarterly basis. Quarterly self-monitoring is also required for the following: biochemical oxygen demand (BOD), total suspended solids (TSS), and total petroleum hydrocarbons (TPH). The permit states that the third quarter of the year may be a split sample with the City of Richmond. In addition, follow-up split sampling is required when the City of Richmond has issued an NOV to the facility for a specific pollutant limit.

EPA looked at monthly monitoring data from January 2006 to the present. Though the permit requires only quarterly monitoring, the City of Richmond's Enforcement Response Plan requires monthly sampling if an industrial user has been issued an NOV, until the industrial user has at least three sequential sample results that are not in violation. EPA found ten exceedances of the local limit for copper in 2006 and two exceedances in 2007, all at Discharge Point A. In addition, at the same discharge point, EPA found six exceedances of the local limit for zinc in 2006 and two exceedances in 2007.

Recent Local Enforcement

According to its pretreatment annual report, the City of Richmond issued fourteen NOVs in 2006, for exceedances of local limits for copper and zinc.

In September 2006, the City of Richmond issued an Administrative Schedule of Compliance to the facility, requiring the facility to comply with the local limits for copper and zinc in 90 days. The facility had installed a new treatment system in February 2006 but had iron fouling issues. After receiving an extension to the schedule of compliance of an additional 90 days, the facility met the schedule by completely halting discharge to the sewer system at Discharge Point A and, instead, hauling off all blow pit discharge for offsite disposal.

Currently, the facility has a new electrocoagulation treatment system on site. It has not been installed or started up yet. The facility hopes to be able to meet local limits with the new treatment system instead of continuing its current practice of hauling blow pit discharge offsite. The City of Richmond has stated that it will notify EPA when the facility has started the new system up.

3.0 Summary of Findings

1. This BART facility is not subject to any federal categorical standards.
2. This facility is a significant industrial user (SIU). Therefore, the facility is subject to applicable pretreatment requirements in 40 CFR 403.
3. This facility must comply with local limits. The facility has had longstanding compliance problems meeting the local limits for copper and zinc at the blow pit discharge point.
4. The City of Richmond issued fourteen NOVs to the facility in 2006, for exceedances of local limits for copper and zinc for the blow pit discharge.

5. The volume of blow pit discharge is low.
6. The facility is currently complying with local limits at the blow pit discharge point by hauling all blow pit discharge offsite for disposal.
7. The facility's previous pretreatment systems for the blow pit discharge have failed to solve compliance problems. The facility has a new electrocoagulation system on site as its new pretreatment system; it has not been installed and started up yet.
8. The facility makes efficient use of water at the train wash by reclaiming a large portion of the used wash water and treating it to be reused in the train wash.