UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX – PACIFIC SOUTHWEST REGION
75 Hawthorne Street
San Francisco, CA 94105-3901

Jan 20, 2012

In Reply Refer To: WTR-7

Mr. Motohisa Hayashi
President
Kion Technology, Inc.
2190 Oakland Rd.
San Jose, CA 95131

Re: August 17, 2011 Clean Water Act Inspection

Dear Mr. Hayashi:

Enclosed is the January 19, 2012 report for our inspection of Kion Technology, Inc. at the above address in San Jose, CA.

The main findings are summarized below:

1. This facility is subject to the federal categorical standard for metal finishing, 40 CFR 433, because of the following metal finishing services it performs on site: electroplating, electroless plating, chemical coating, and chemical etching.
2. Over the past few years, the facility has had problems consistently complying with federal and local limits for total cyanide, nickel, and silver.
3. This facility is currently under a compliance agreement with the City of San Jose. The facility requested and was granted an extension for installation of the batch treatment unit. The facility continues to have all cyanide-contaminated wastewater hauled offsite as hazardous waste.

By February 29, 2012, please submit a short response letter to the Summary of Findings in Section 3.0 of this report. Your letter should include an individual response to each of the numbered findings in Section 3.0.

Please send your letter to the attention of Anna Yen at EPA (and include the code "WTR-7" in the address above), with copies to the City of San Jose - Environmental Services Department and to the San Francisco Bay Regional Water Quality Control Board.

We would like to thank you for your cooperation during the inspection. 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, Clean Water Act Compliance Office

Enclosure

cc (enclosure by email):
Rene Eyerly, City of San Jose, Environmental Services Department
Michael Chee, Regional Water Quality Control Board, San Francisco Bay Region

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

Industrial User Inspection Report

Industrial User:	Kion Technology, Inc.
Industrial User Address:	2190 Oakland Rd., San Jose, CA 95131
Inspection Date:	August 17, 2011
EPA Region 9 Inspector:	Anna Yen, Environmental Engineer Water Division, CWA Compliance Office
City of San Jose Inspector:	Mharr Dirige, Environmental Inspector II
Facility Contact During Inspection:	Motohisa Hayashi, President
Report Date:	January 19, 2012

Report prepared by Anna Yen

1.0 Scope and Purpose

The purpose of the industrial user inspection on August 17, 2011 was to determine the pretreatment standards and requirements that apply to this facility and to ensure compliance with those standards and requirements.

This facility is an industrial user which discharges to the local publicly owned treatment works (POTW), the San Jose/Santa Clara Water Pollution Control Plant.

1.1 General and Process Description

Operations began at this facility in 1991. Kion Technology, Inc. ("Kion") produces mounting bodies for circuits. Kion's customers are primarily in the aerospace industry, and the circuits are typically used for flight control and signal control. Kion performs various metal finishing operations, such as electroplating, electroless plating, chemical coating, and chemical etching, to manufacture its products. Kion does not own any of the products it manufactures. Therefore, as defined in 40 CFR 433.11(c), Kion is a job shop.

Kion starts with raw materials of aluminum, steel, and stainless steel. The plating Kion performs is usually a copper base. It also provides nickel plating, with gold plating on top of the nickel. Other metal finishing services Kion performs are chromating; tin plating; zincate plating; electroless nickel plating; and silver plating. In performing the various metal finishing operations, Kion employees place the metal parts on wire racks and manually dip them into each tank.

All tanks except the rinse tanks are dual-contained tanks. In addition, all of the metal finishing tanks sit on top of floor grating, below which is the secondary containment. *See Photo 1 in Attachment 1.* During the inspection, the secondary containment was dry with no standing liquid. Kion stated that, if any liquid were to collect in the secondary containment area, Kion would vacuum it out and send the liquid to the onsite wastewater treatment system.

Rinse Procedures

All rinse tanks at the facility are static rinse tanks or spray rinse tanks. Kion has two types of spray rinse tanks. For some processes, it is essentially an empty tank. Kion sprays the metal part with water over this tank, dedicated specifically for this purpose, with a spray nozzle attached to a hose. In other processes, the spray rinse tank is equipped with hard-piped rinse nozzles in the tank and a valve to turn the water on and off as needed.

Many processes are set up with two static rinse tanks in series for countercurrent rinsing. The water from the first rinse tank is reused as makeup water for the plating bath in the upstream process tank. Wastewater from all spray rinse tanks flow to the onsite wastewater treatment system.

Three main lines lead to the onsite wastewater treatment system. One line carries wastewater from the soap and acid tanks. One line conveys wastewater from the spray rinse tank of the copper plating process, and the third line conveys wastewater from the spray rinse tank of the silver plating process.

Replacement of Tank Contents

Kion keeps a log of each instance that a tank's contents are replaced. Kion hires an outside company to perform an analysis of the contents of the plating baths every week. Kion stated that it usually only adds to the plating baths. The exceptions are the gold plating bath and the electroless nickel bath. For the gold plating bath, Kion replaces the contents approximately every six months to a year. Kion pumps the solution out of the tank, removes the gold, and sells it. For the electroless nickel tank, Kion replaces the contents approximately every four months and sends the nickel offsite to be recycled. Kion stated that it has not replaced the contents of the silver plating bath or the copper plating bath in the past four to five years.

For the alodine (chromating) tank, Kion batch treats the liquid approximately every six

months. Kion does the same for the hydrochloric acid tanks.

For the other acid tanks and the soap tanks, the contents are sent to the onsite wastewater treatment system, as needed, by conveying the liquid to one of the spray rinse tanks. The discharge line from each spray rinse tank leads to the wastewater treatment system.

Since the static rinse tanks are set up for countercurrent rinsing, only the contents of the first tank of each countercurrent setup are completely replaced approximately once per year. The wastewater is hauled away for offsite disposal. Water in the second tank of each countercurrent setup is simply replenished.

Onsite Wastewater Treatment System
See Section 1.3

1.2 Facility Wastewater Sources and Other Wastes

Kion generates the following wastewaters:

- Rinse waters from spray rinse tanks of metal finishing room
- Rinse waters from first rinse tank of countercurrent setup
- Any dragout collected in secondary containment area
- Air compressor condensate
- Spent alodine and hydrochloric acid baths
- Other spent metal finishing baths

The above listed wastewaters, except the last item, are all sent to an onsite wastewater treatment system. However, the spent alodine and hydrochloric acid baths are batch treated rather than being processed through the continuous treatment process. See Section 1.1 above for a description of how other spent metal finishing baths are handled.

The treated wastewater is sent in a 300-gallon batch to a holding tank. The contents, once released, flow through a sample box and on to the local sanitary sewer system. Kion discharges a 300-gallon batch per day. Kion stated that the air compressor condensate is collected in two locations and then manually transferred to the onsite wastewater treatment system, approximately two gallons every week. One of the locations is simply a pipe with the valve closed. No container for collecting the condensate was observed. *See Photo 2 in Attachment 1.* Kion stated that it would double-check that staff were collecting the condensate on a weekly basis.

EPA notes Kion's positive practices of efficient water use such as routine analysis of process tank contents, rinse tanks set up in a countercurrent configuration, reuse of the rinse waters of the first rinse tank in that configuration as makeup for the upstream process tank, static rinse tanks and spray rinse tanks only, and spray rinse tanks set up with hard-plumbed rinse nozzles with shut-off valve. EPA encourages Kion to continue its efforts in making efficient use of water in its metal finishing operations.

1.3 Facility Process Wastewater Treatment System

Kion performs both batch treatment and continuous treatment; however, because it uses some of the same equipment for both processes, the continuous treatment is really only continuous when Kion is *not* performing batch treatment.

Cyanide Treatment

After Kion's cyanide violations in late 2010, Kion decided not to use its cyanide treatment system and instead have the cyanide-contaminated wastewaters hauled offsite for hazardous waste disposal. The cyanide treatment system is no longer connected to the process lines or to the rest of the wastewater treatment system. The City of San Jose required that Kion empty the contents of the cyanide treatment tank. Kion did so, sending the contents offsite as hazardous waste. However, Kion subsequently refilled the tank with water, stating that the tank, which is of non-metal construction, would crack at the joints if not filled with liquid. During the inspection, the tank was full of an opaque liquid. It did not appear to be clean water. *See Photo 3 in Attachment 1.*

Continuous Treatment

Wastewater from the process area gravity flows to a two-compartment holding tank: one compartment for cyanide-contaminated wastewater and the other compartment for wastewater without cyanide. The compartment containing cyanide-contaminated wastewater used to be pumped to the cyanide treatment system. However, now that Kion is not using its cyanide treatment system, it pumps out the compartment containing cyanide wastewater and has the contents hauled offsite for hazardous waste disposal. Kion pumps the contents of the other compartment to a treatment tank equipped with a mixer. The pH is adjusted automatically with the addition of sodium hydroxide. During the inspection, Kion's pH meter read 10.6. Ferrous sulfate is added for coagulation/flocculation. After some time for precipitation, the contents are sent to one of two filter presses. The filter cake is hauled away for offsite disposal, and the filtrate is sent to a 2000-gallon clarifier. Approximately 300 gallons of effluent from the clarifier are allowed to flow to a final holding tank for each batch discharge. Once released, the contents of the holding tank flow through a sample box and ultimately to the local sanitary sewer system. *See Photos 4-13 in Attachment 1.*

The effluent pipe from the sample box, however, first conveys the treated wastewater to a room outside the process area. The treated wastewater exits the pipe into a floor drain which leads to the local sewer system. A nearby sink which is also outside of the process area drains to this same floor drain. *See Photos 14-15 in Attachment 1.*

Batch Treatment

Two 5-gallon containers sitting on the floor are used for batch treatment of spent hydrochloric acid. *See Photo 16 in Attachment 1.* Lime, for pH adjustment, and metabisulfite are added to the containers of hydrochloric acid. After a few hours, the contents are pumped through one of two filter presses for solids removal. The filtrate is sent to a 2000-gallon clarifier, while the filter cake is hauled away for offsite disposal.

Approximately 300 gallons of effluent from the clarifier are allowed to flow to a final holding tank for each batch discharge. Once released, the contents of the holding tank flow through a sample box and ultimately to the local sanitary sewer system.

The filter presses, clarifier, final holding tank, sample box, and effluent pipe leading to the floor drain are the same ones used for continuous treatment, as described above.

The final holding tank is also used as a batch tank when treating spent solution from the alodine process bath. In this case, sulfuric acid is added first to drop the pH to 2. After approximately one hour, sodium hydroxide is added to bring the pH up to 10. After 3-4 hours, Kion tests the wastewater with a test kit for copper, nickel, and cyanide. Kion also tests the pH. If the test results are unsatisfactory, the process is repeated. Kion then transfers the wastewater to the clarifier for overnight settling. Kion tests the wastewater again the next day. If the test results are satisfactory, Kion pumps the wastewater to the final holding tank and discharges the wastewater through the sample box and to the local sanitary sewer system.

EPA noted that Kion was leaving open drums of chemicals out on the floor: drums of chemicals for addition to the wastewater treatment system as well as the 5-gallon containers used for batch treatment. *See Photos 5 and 16 in Attachment 1.* Though these drums and containers are all located in the bermed area of the wastewater treatment system, these open containers pose a safety hazard to employees working in this area.

EPA also noted that most of the components of the wastewater treatment system were connected by hoses. We recommend a design in which components are hard-piped to each other, as excessive use of hoses potentially facilitates improper operation of the wastewater treatment system.

1.4 Wastewater Discharge

Wastewater from this facility discharges to the San Jose/Santa Clara Water Pollution Control Plant. As lead agency of a regional joint powers authority, the City of San Jose ("the City") operates the wastewater treatment plant, which is subject to requirements under an NPDES permit (No. CA-0037842) issued by the Regional Water Quality Control Board.

2.0 Compliance with Federal Categorical Standards

This facility is subject to the federal categorical standard for metal finishing, 40 CFR 433. Therefore, it is a categorical industrial user (CIU). The metal finishing services of electroplating, electroless plating, chemical coating, and chemical etching performed at this facility triggers applicability of this categorical standard.

The City has permitted this facility as a new source, listing the "Pretreatment standards for new sources" in 40 CFR 433.17 as the applicable federal limits. An industrial user is

subject to the federal categorical standard for metal finishing if it performs any of the following six core operations listed in 40 CFR 433: electroplating, electroless plating, chemical coating, chemical milling/etching, anodizing, and printed circuit board manufacturing.

The facility has shown inconsistent compliance with federal limits for total cyanide, nickel, and silver over the past few years. For the review period of January 1, 2008 through August 23, 2011, EPA found egregious cyanide violations, one sample measuring as high as 87 mg/l in December 2010. Out of a total of 15 samples taken by either Kion or the City, the facility was out of compliance with the federal total cyanide limit on 4 sampling dates. The City stated in its 2011 first semiannual pretreatment report to EPA that the cyanide violation in December 2010 was caused by a contaminated cyanide destruct treatment tank. *See Attachment 2 for a portion of the compliance monitoring data for silver, nickel, and total cyanide.*

2.1 Compliance with Other Federal Pretreatment Requirements

This facility is a categorical industrial user (CIU) and, therefore, is also a significant industrial user (SIU) because it is subject to a federal categorical standard. Like any industrial user, it must comply with pretreatment requirements in 40 CFR 403, including, but not limited to, national prohibitions in 40 CFR 403.5 and reporting requirements in 40 CFR 403.12. Note that some requirements in 40 CFR 403 are applicable specifically to SIUs and some even more specifically to CIUs.

2.2 Compliance with Local Limits and Actions by the City

The facility's most recent pretreatment permit issued by the City of San Jose is Permit No. SJ-191B. The facility's sample point, as indicated by description in the permit, is located "in the bermed treatment pad, after all treatment, and immediately prior to final discharge to the sanitary sewer." The general location of the facility's sample point is also indicated on a diagram in the permit. The facility's federally-required cyanide sample point is, as described in the permit, "located in the bermed treatment pad, before mixing with other wastewaters, and prior to discharge to sample point #1." This sample point is also indicated on the same diagram in the permit. The facility's permit requires Kion to sample semiannually. Though the permit does not specify that Kion must batch discharge, it does include a requirement to submit copies of all batch discharge logs with each self-monitoring report, and the permit specifies batch-discharge information that must be recorded in the logbook.

The City has issued numerous enforcement notices and penalties to Kion over the past few years. In addition to verbal warnings, warning notices, and notices of violation, the City has issued a few fines ("administrative citations") to Kion, the most recent occurring in February 2011. For the period reviewed by EPA of January 1, 2008 through August 23, 2011, Kion violated local limits for total cyanide, nickel, and silver based on the same samples which showed violations for the corresponding federal limits. *See Attachment 2*

for the measured silver, nickel, and total cyanide levels on these dates of violation.

The City held a compliance meeting with Kion in December 2008. In February 2011, the City held another compliance meeting with Kion. As a result of the February meeting, Kion is currently under a compliance agreement. Key requirements of the compliance agreement include submittal of a plan for the installation of a batch treatment unit for cyanide-contaminated wastewater, installation of the proposed batch treatment unit, and submittal of a slug control plan. Kion submitted a batch treatment unit plan by the deadline of March 2011. Kion has not completed the next requirement of the compliance agreement because Kion has asked for and has been granted an extension for installation of the batch treatment unit. The compliance agreement deadline for this requirement was June 2011. Meanwhile, Kion continues to haul all cyanide-contaminated wastewater offsite for hazardous waste disposal.

3.0 Summary of Findings

1. This facility is subject to the federal categorical standard for metal finishing, 40 CFR 433, because of the following metal finishing services it performs on site: electroplating, electroless plating, chemical coating, and chemical etching.
2. This facility is an SIU and a CIU. The facility is subject to applicable pretreatment requirements in 40 CFR 403.
3. Kion batch discharges approximately 300 gallons at a time, once per day. Though Kion's permit does not specify that Kion must batch discharge, it does include a requirement to submit copies of all batch discharge logs with each self-monitoring report, and it specifies the batch-discharge information to be included in the logbook.
4. Over the past few years, the facility has had problems consistently complying with federal and local limits for total cyanide, nickel, and silver.
5. Kion is currently under a compliance agreement with the City of San Jose. Kion has completed one task on time: submittal of a plan for the installation of a batch treatment unit for cyanide-contaminated wastewater. Kion requested and was granted an extension for installation of the batch treatment unit. Kion continues to have all cyanide-contaminated wastewater hauled offsite as hazardous waste.

Attachment 1: Photos

Photo 1

Metal finishing room
Taken by Anna Yen on August 17, 2011

Photo 2

Air compressor condensate line
Taken by Anna Yen on August 17, 2011

Photo 3

Cyanide treatment system –
currently not in operation
Taken by Anna Yen on August 17, 2011

Photo 4

Holding tanks immediately prior to treatment
Taken by Anna Yen on August 17, 2011

Photo 5

Treatment tank
Taken by Anna Yen on August 17, 2011

Photo 6

Clarifier
Taken by Anna Yen on August 17, 2011

Photo 7

Inside of clarifier – view from top
Taken by Anna Yen on August 17, 2011

Photo 8

Top of clarifier
Taken by Anna Yen on August 17, 2011

Photo 9

Filter press
Taken by Anna Yen on August 17, 2011

Photo 10

Final holding tank/batch tank
Taken by Anna Yen on August 17, 2011

Photo 11

Top of final holding tank
Taken by Anna Yen on August 17, 2011

Photo 12

Sample box – view of inside
Taken by Anna Yen on August 17, 2011

Photo 13

Discharge pipe – extending up from sample box
Taken by Anna Yen on August 17, 2011

Photo 14

Discharge pipe from wastewater treatment system –
to floor drain to sewer system
Taken by Anna Yen on August 17, 2011

Photo 15

Sink – outside of metal finishing process area
- on other side of wall from discharge pipe end point
Taken by Anna Yen on August 17, 2011

Photo 16

Batch treatment of hydrochloric acid –
in 5-gallon containers
Taken by Anna Yen on August 17, 2011

Attachment 2: Compliance Monitoring Records Review

Federal Categorical Limits in mg/L (40 CFR 433.17):	**Silver**	**Nickel**	**Cyanide (Total)**
Daily	0.43	3.98	1.20
Monthly	0.24	2.38	0.65
	Measured Levels (mg/L)*		
Sample Date	**Silver**	**Nickel**	**Cyanide (Total)***
12/14/2010			0.328
12/01/2010			**48**
11/17/2010	**0.57**	0.3	
11/16/2010			**87**
08/20/2010			0.34
08/13/2010	ND	0.07	
05/13/2010	ND	0.38	ND
02/11/2010	ND	0.10	
11/09/2009	**1.1**	0.287	0.226 (and **4.74** at the final sampling point)
08/11/2009	ND	0.96	ND
05/05/2009	0.022	0.015	ND
02/09/2009	ND	0.06	0.02
12/15/2008			0.02
11/21/2008			0.552
10/27/2008	ND	0.112	**14.0**
08/18/2008	ND	0.05	0.02
06/19/2008	0.008	0.491	
06/12/2008	0.017	1.94	
05/30/2008		0.19	
05/14/2008	0.044	**6.05**	
02/29/2008	ND	0.04	

** Though the complete set of data for the review period 1/1/08 through 8/23/11 is not shown in this table, all measurements during this review period that indicate violations of federal limits for silver, nickel, and cyanide are listed.*

*** Sample taken at the federal cyanide sample point, unless otherwise noted.*

Key:

xxx Out of compliance with federal daily and/or monthly limit of 40 CFR 433.17