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

August 12, 2008

In Reply Refer To: WTR-7

Ms. Danielle Rosenquist
Director of Product Development
Metalast Tech Center
Metalast International, Inc.
2241 Park Place, Suite C
Minden, Nevada 89423

Re: May 21, 2008 Clean Water Act Inspection

Dear Ms. Rosenquist:

Enclosed is the August 12, 2008 report for our inspection of the Metalast Tech Center at the above address in Minden, Nevada.

The main findings are summarized below:

1. This facility is subject to the federal categorical standard for metal finishing (40 CFR 433.17). Therefore, the facility is a categorical industrial user as well as a significant industrial user. It is subject to applicable pretreatment requirements in 40 CFR 403.
2. As specified in the pretreatment reporting requirements in 40 CFR 403.12, the facility must report monitoring results to the Control Authority, EPA in this case. The facility has violated 40 CFR 403.12 for failure to submit the required monitoring reports.
3. The facility may be in non-compliance with the federal pretreatment standard prohibiting the use of dilution as a substitute for treatment. The facility's flow-through rinses should be operated only on an as-needed basis and the discharges analyzed.

By September 30, 2008, please submit to EPA 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 Douglas County and Nevada Division of Environmental Protection.

We would like to thank you for your helpfulness and courtesy during the inspection. We remain available to you and Douglas County 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, Clean Water Act Compliance Office

Enclosure

cc (via email): Catherine Pool, Douglas County Community Development
Joe Maez, Nevada Division of Environmental Protection

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

Industrial User Inspection Report

Industrial User:	Metalast International, Inc. – Metalast Tech Center
Industrial User Address:	2241 Park Place, Suite C, Minden, NV 89423
Inspection Date:	May 21, 2008
EPA Region 9 Inspector:	Anna Yen, Environmental Engineer Water Division, CWA Compliance Office
Douglas County Inspector:	Steve Rippe, Utility System Technician I Douglas County Community Development
Facility Contact During Inspection:	Danielle Rosenquist, Director of Product Development
Report Date:	August 12, 2008

1.0 Scope and Purpose

The purpose of the industrial user inspection on May 21, 2008 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), Douglas County North Valley Wastewater Treatment Plant. By the federal pretreatment standards, at 40 CFR 403.3(i), an industrial user is a source of indirect discharge. In other words, it discharges non-domestic wastewater into a POTW. Douglas County North Valley Wastewater Treatment Plant is a POTW, as defined at 40 CFR 403.3(q) in the pretreatment standards.

The national pretreatment program is the mechanism developed to regulate industrial users who discharge to POTWs pollutants that could pass through or interfere with the POTW, threaten worker health and safety, or contaminate sludge.

1.1 General and Process Description

Metalast International, Inc. began operations at this facility, Metalast Tech Center ("Metalast"), in 1996. This facility provides solutions as a consulting service for its

customers. Metalast's customer base is in the anodizing industry and chemical conversion coating industry. For example, a customer might call upon Metalast to determine the best anodizing process for its particular product. This facility also provides process control computer solutions, plant and chemical management software, and training. Though the company Metalast International, Inc. does sell products under its own name, such as chemicals used in the anodizing process or conversion coating process, none of these products are manufactured at this facility. This facility does not manufacture any products for commercial sale.

Anodizing/Conversion Coating Process Line

The lab is the main area in the building that generates non-domestic wastewater. In the lab is the anodizing/conversion coating process line. This process line has 21 tanks, though not all are used for each batch that the facility runs. Each tank holds 243 liters. Regarding anodizing, the facility performs primarily aluminum anodizing, less frequently titanium anodizing. Depending on the projects Metalast is working on, the tanks could have different solutions in them at different times. On the day of our inspection, the tanks were set up for any of the following processes: Type II aluminum anodizing, Type III aluminum anodizing, titanium anodizing, coloring of aluminum with black dye, and electrolytic conversion coating (to provide color without using dye). *See Attachment A for listing of tank contents and replacement frequency of tank contents.*

The process tanks are all set up in one row with an overhead hoist that holds the object to be anodized or coated and transfers it from tank to tank. Housed in "cabinets" below the process line, a container sits below each process tank and serves as secondary containment. Grating serves as a walkway in front of these tanks with secondary containment underneath, which is separate from the process tanks' secondary containment. Discharge piping runs from each tank into a common header which drains to the contained area under the walkway. A floor drain in the contained area under the walkway connects to the local sewer system. *See Photos 1 & 2 in Attachment 2.*

The facility operates the process, on average, three times per week (5-10 hours each week), but of course this frequency varies from project to project. Depending on the particular process the part is undergoing, the part will be dipped in only some of the tanks of the process line. For example, for conversion coating, the part might be dipped in only 6 of the 21 tanks.

Rinse Tanks

While the facility is running a batch through the process line, fresh water flows continuously into each rinse tank, while the used water in the rinse tank flows out at the same rate. The outgoing water flows via hard piping into the contained area under the floor grating. The wastewater then flows out to the local sewer system through a floor drain in the contained area. *See Photo 3 in Attachment 2.*

Some of the rinse tanks use city water; others use deionized water. Some of the rinse tanks are paired in a reverse flow arrangement. For example, while deionized (DI) water flows into the DI Rinse tank (Station #15), the used DI water from this tank flows at the

same rate into an upstream rinse tank (Station #13). The water from the upstream rinse tank then flows out at the same rate through the discharge piping into the contained area under the walkway and out to the local sewer system.

When the contents of a tank are completely replaced, the spents are pumped out with a portable electric pump to a drum, and the drum is hauled away by Clean Harbors (formerly Universal Environmental Nevada) for offsite disposal. The pump is rinsed out with city water into one of the non-DI-water rinse tanks of the process line. Metalast estimated that the amount of rinse water to rinse the pump out is only about 200 milliliters.

Lab Wastewaters

Bench scale work done in the lab include titrations. The resulting chemical waste is disposed of in the following way:

- Lab staff checks the pH.
- The first rinse is placed into the appropriate "satellite waste tote." There are three different satellite waste totes: mixed acids, mixed bases, and metals.
- The container is then washed in the sink. The sink drains directly to the local sewer system.

Each satellite waste tote sits in a secondary containment basin. The contents of each type of satellite waste tote are regularly transferred to a corresponding 55-gallon drum. These drums are then hauled offsite as hazardous waste. *See Photos 4 & 5 in Attachment 2.*

The lab contains a dishwasher for the majority of the glassware used in the lab. The dishwasher drains directly to the local sewer system. In addition, the facility uses a washing machine to wash rags that are used in the lab. This washing machine also discharges directly to the local sewer system.

Deionized Water

The facility has a reverse osmosis (RO)/deionized water system on site to provide the DI water used in the anodizing/conversion coating process line. City water is piped to the RO system first, the treated water is stored in a holding tank, then pumped through a DI cartridge when water is needed. *See Photos 6 & 7 in Attachment 2.* A sediment filter and a carbon filter are located upstream of the RO membrane . These filters are replaced at regular intervals and the old ones disposed of in the trash. The RO membrane has not been replaced yet and has been in operation for at least four years. The reject water from the RO membrane is discharged directly to the sewer system. DI cartridges are picked up by the manufacturer regularly and replaced with fresh cartridges.

Sanitary Wastewater

The building has bathrooms and lunch rooms.

1.2 Facility Wastewater Sources and Other Wastes

Metalast generates wastewater from the following sources:

- Rinse tanks of the anodizing/conversion coating process line

- Replacement of spents from the anodizing/conversion coating process line
- Lab bench scale titrations
- Lab sink
- Lab dishwasher
- Washing machine
- RO system - reject water

Wastewater from all sources listed above are discharged directly to the local sewer system, with the following exceptions. The second item listed above, spent solutions, is hauled offsite. Likewise, the first rinse from titrations are collected and sent offsite as hazardous waste. After the first rinse, the dishes are washed in the sink (or in the dishwasher).

1.3 Facility Process Wastewater Treatment System

The facility does not have a wastewater treatment system.

1.4 Wastewater Discharge

Wastewater from this facility discharges to the Douglas County North Valley Wastewater Treatment Plant. The treatment plant is owned and operated by Douglas County Community Development ("Douglas County" or "the County"). The Douglas County North Valley Wastewater Treatment Plant is operated under a groundwater permit (No. NEV60025) issued by the State of Nevada ("the State").

Metalast implements at least one efficient water use practice: reverse flow for a pair of rinse tanks in its process line. It was difficult to tell if the facility implements other efficient water use practices since the process line was not in operation at the time of the inspection. However, one inefficient use of water noted was the flow-through rinse tanks in the process line. Replacing this practice with a more efficient water use practice could significantly reduce the volume of water used in its rinses, resulting in savings in city water costs and reductions in amount of wastewater discharge to the sewer system.

More significantly, flow-through rinses that (1) discharge directly to the sewer system, untreated, and (2) discharge continuously instead of on an as-needed basis, indicate non-compliance with the federal pretreatment standard that prohibits the use of dilution as a substitute for treatment. *See Section 2.1 for a more detailed discussion.*

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 anodizing and coating processes performed at this facility trigger applicability of this categorical standard. Additionally, because the facility constructed and began operations after August 31, 1982, the publication date of the proposed rule, the facility is a new source rather than an existing

source. Therefore, the "Pretreatment standards for new sources" in 40 CFR 433.17 apply.

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 circuitboard manufacturing.

A question may arise concerning the applicability of the categorical standard to this facility since this facility does not manufacture products for commercial sale. In some cases, research and development facilities are not subject to the categorical standards. At some stand-alone research and development facilities, the production method, materials, or other factors are materially different from the processes that EPA evaluated as the basis for the categorical standard. Under those circumstances, the categorical standard should not apply because the wastewater quality or quantity may differ from the wastewater that EPA analyzed as the basis for the categorical standards.

In this case, based on information obtained during the inspection, EPA Region 9 concludes that this facility is subject to the federal categorical standard for metal finishing. This facility provides consulting services, one type of which is evaluation of the facility's anodizing or conversion coating process and optimizing the process to meet the customer's specifications. Though Metalast's resulting workpieces may be test pieces associated with a production evaluation for a customer, the anodizing and coating processes are materially the same processes that EPA intended to regulate under the categorical standard 40 CFR 433.

2.1 Compliance with Other Federal Pretreatment Requirements

Significant Industrial User

This facility is 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.

The reporting requirements in 40 CFR 403.12 include that a CIU must submit to the Control Authority – EPA, in this case – a baseline monitoring report, a 90-day compliance report, and ongoing monitoring reports. Since the facility has not submitted any of these types of reports to EPA, the facility has violated 40 CFR 403.12.

Prohibition Against Dilution as a Substitute for Treatment

One of the federal pretreatment standards, at 40 CFR 403.6(d), prohibits dilution as a substitute for treatment to achieve compliance with a pretreatment standard or requirement. Metalast may be using dilution as a substitute for treatment, with its discharges of rinse waters from its process line directly to the sewer system.

Two factors are used to guide this determination: (1) is the facility discharging the federally-regulated wastewaters to the sewer system without best available technology economically achievable (BAT) treatment or its equivalent, and (2) is the facility using excessive amounts of water within a federally-regulated process and, therefore, discharging this water as part of the wastewater? Answers of yes to both questions indicate non-compliance with 40 CFR 403.6(d).

For the first factor, the answer is yes because Metalast's wastewater discharges from the process line to the sewer system are untreated. For the second factor, excessive amounts of water are being used within the process line because the flow-through rinse tanks allow water to discharge continuously to the sewer system regardless of whether parts are being rinsed at that moment. Therefore, Metalast may be in non-compliance with 40 CFR 403.6(d).

Compliance with 40 CFR 403.6(d)

The facility should make changes to its flow-through rinse tanks so that the rinses are operated only on an as-needed basis. The resulting discharge to the sewer system should then be analyzed to determine if treatment is necessary.

Two common examples of controlling the flow of incoming fresh water based on production are conductivity-controlled makeup water inlet valves and on-demand kickplate switches, though there are other methods.

As an alternative to controlling the operation of the flow-through rinses, the facility could implement static rinses as described below. The facility would still need to implement appropriate treatment and handling methods of the wastewater and any solid wastes in the rinse tanks.

Other Options for Efficient Water Use

EPA recommends that the facility consider the range of options for additional efficient water use practices. For example, many metal finishing facilities use a series of static rinses rather than having a constant inflow of fresh water into the tank and a constant outflow of used water exiting the tank. Following a process tank, two consecutive tanks could serve as rinse tanks. The first rinse tank, commonly called a "dragout tank," would contain water that is more contaminated than the second tank. Another suggestion is to use a spray rinse above the dragout tank after the part is removed, taking care to ensure that the spray water falls into the dragout tank. This spray rinse would provide additional washing of the part, using a minimal amount of water, before proceeding to the rinse tank.

If the facility were to consider the use of dragout tanks, an evaporator for the spent dragout rinses is another option. As an example, for the rinse tanks after an acidic process tank, the facility could recover the acid by evaporating off the excess water and reuse the acid back in the process line. Any sludge left behind in the dragout tank would need to be hauled away for offsite disposal.

The above options and examples are typical arrangements EPA Region 9 inspectors have seen on inspections of metal finishing shops. Naturally, other options exist, and Metalast should select the options best suited for its applications.

2.2 Compliance with Local Limits

The State of Nevada does not have delegation of the Clean Water Act authority regarding pretreatment. The local POTW, the Douglas County North Valley Wastewater Treatment Plant, does not discharge to surface waters. The receiving water body is groundwater via percolation from reuse irrigation. Therefore, the State's Nevada Division of Environmental Protection (NDEP) has issued a groundwater permit rather than a National Pollutant Discharge Elimination System (NPDES) permit to the treatment plant.

Without an NPDES permit, the POTW does not have pretreatment requirements, and the municipality, Douglas County, does not have a pretreatment program. In effect, the discharge of industrial facilities is unregulated at the state and local levels. EPA provides pretreatment regulation of these facilities at the federal level.

Douglas County has not yet established any local limits, though it is currently working on incorporating them into a local ordinance. By having local limits, Douglas County will help to protect the POTW from adverse impacts and to help prevent violations of its State-issued permit.

If the County issues a discharge permit to the facility, the facility should be aware that, if there is a conflict between the permit and federal pretreatment standards, the federal pretreatment standards will govern. In addition, sample points will need to be identified at the facility to result in appropriate monitoring and valid data.

3.0 Summary of Findings

1. This facility is subject to the federal categorical standard for metal finishing, 40 CFR 433, because of its anodizing and conversion coating processes.
2. This facility is an SIU and a CIU. The facility is subject to applicable pretreatment requirements in 40 CFR 403.
3. The facility has violated 40 CFR 403.12 for failure to submit the required monitoring reports.
4. The facility discharges rinse waters from its process line directly to the local sewer system and in excessive amounts. Therefore, it may be in non-compliance with the federal pretreatment standard prohibiting the use of dilution as a substitute for treatment.
5. The facility should make changes to its flow-through rinse tanks so that the rinses are operated only on an as-needed basis, and the discharges should be analyzed.

6. The facility implements an efficient water use practice by employing reverse flow rinses in its process line. However, an inefficient water use practice is its flow-through rinse tanks.
7. EPA recommends that the facility consider implementing additional efficient water use practices, which will result in both economic and environmental benefits.

Attachment A: Tanks in Process Line

Sta-tion	Tank Contents/Function	Frequency of Replacement of Spent Solutions	Comments
1	--		Loading of parts onto hoist
2	Alkaline soap degreasing	2x/year	
3	Water rinse		
4	Caustic etch	*	
5	Titanium deoxidizer – nitric acid/hydrofluoric acid	rarely	Was replaced 3 years ago. No plans to replace this year.
6	Aluminum desmut	*	Main ingredient of solution: Ammonium persulfate
7	Water rinse		
8	Type II aluminum anodize – sulfuric acid	*	
9	Water rinse		
10	Type III aluminum anodize – sulfuric acid	*	
11	Water rinse		
12	Titanium anodize – sodium bicarbonate	1x/4 years	
13	Water rinse		
14	Electrolytic color solution	rarely	Has not been replaced in the last 4 years.
15	Rinse – Deionized (DI) water		Countercurrent flows to Sta. 13
16	Chromate conversion coating or Rinse – DI water	2x/year	Alternate between the two solutions ~2x/year
17	Black dye	*	In the last year, has been replaced every 3-4 months.
18	Rinse – DI water		
19	Titanium anodize - NaOH	rarely	Has not been replaced in the last 4 years.
20	Rinse – DI water		
21	Seal for anodized aluminum	1x/3 years	
22	Rinse – warm DI water		

* once to twice per year

Attachment B: Photos

Photo 1

Anodizing/conversion coating line
Taken by Anna Yen on May 21, 2008

Photo 2

Discharge piping in “cabinets” under anodizing/coating tanks, secondary containment under walkway grating
Taken by Anna Yen on May 21, 2008

Photo 3

Discharge piping from the process line to the secondary containment under the walkway; floor drain directly under the discharge piping outlet
Taken by Anna Yen on May 21, 2008

Photo 4

Satellite waste tote for mixed acids
Taken by Anna Yen on May 21, 2008

Photo 5

Satellite waste tote for metals
Taken by Anna Yen on May 21, 2008

Photo 6
RO/DI system, with storage tank
Taken by Anna Yen on May 21, 2008

Photo 7
RO/DI system
Taken by Anna Yen on May 21, 2008