



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. Arnold Sanchez
Owner
Arnold's Metal Finishing
805 Aldo Ave., Suite 104
San Jose, CA 95054

Re: August 16, 2011 Clean Water Act Inspection

Dear Mr. Sanchez:

Enclosed is the January 19, 2012 report for our inspection of Arnold's Metal Finishing 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: electroless plating, anodizing, chemical coating, and chemical etching.
2. Over the past few years, the facility has had some problems with consistent compliance with federal and local nickel and zinc limits and has been late in submitting reports.
3. The facility did not fulfill the requirements of the first compliance agreement, dated March 10, 2011, with the City of San Jose. The facility is currently under a second compliance agreement, dated August 3, 2011, with the City of San Jose. The facility requested and was granted an extension for submittal of the evaluation report.

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: Arnold's Metal Finishing
Industrial User Address: 805 Aldo Ave., Suite 104, San Jose, CA 95054

Inspection Date: August 16, 2011

EPA Region 9 Inspector: Anna Yen, Environmental Engineer
Water Division, CWA Compliance Office

City of San Jose Inspector: Jack Dickinson, Environmental Inspector II

Facility Contact During Inspection: Arnold Sanchez, Owner

Report Date: January 19, 2012

Report prepared by Anna Yen

1.0 Scope and Purpose

The purpose of the industrial user inspection on August 16, 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 October 2006. Arnold's Metal Finishing ("Arnold's") provides many different types of metal finishing services, including Type II and Type III anodizing, architectural anodizing, chromating, electroless nickel plating, passivation, chemical cleaning, and chemical etching. Arnold's also performs powder coating, liquid painting, and masking. Arnold's performs these services mostly on aluminum parts, with occasional jobs using different metals and alloys. It does not own any of the metal parts

on which it performs the above work. Therefore, as defined in 40 CFR 433.11(c), Arnold's is a job shop.

Arnold's has bead glass sandblast machines and performs some sanding. Arnold's also has metal polishing machines. None of these machines use any water, for the function of the machine or for cooling purposes. A wash-up area is located near the metal polishing machines. Drainage from the sinks flows to a holding tank, the contents of which are then pumped to a central sump and then to the onsite wastewater treatment system. *See Photos 1-4 in Attachment 1.*

Arnold's employees place metal parts on custom-made racks, and manually dip the parts into the tanks of a process line. The metal finishing area starts with a cleaning line, consisting of a soap tank, rinse tank, caustic etch tank, two rinse tanks, and a deoxidizer tank. After the parts go through this cleaning line, the parts are dipped in a rinse tank and spray rinsed. *See Photo 5 in Attachment 1.*

Arnold's performs several different types of anodizing which use sulfuric acid. Arnold's provides different color dyes for parts that have been anodized. Once a part has been placed in a dye tank, then rinsed, Arnold's then dips it in a seal, rinses again, and dries with compressed air. The seal for clear anodizing is reused for the seal process in color anodizing.

Arnold's uses deionized water in some of its process lines. Deionized water is provided by an outside supplier. Every three bottles provides 3500 gallons of deionized water, which is stored in a deionized water holding tank before being transferred to the process lines as needed. The supplier of the deionized water periodically picks up the empty bottles and provides replacement bottles. Therefore, Arnold's does not perform any of the deionization process.

All tanks in the metal finishing area sit on top of floor grating. Dragout from the metal finishing process lines collect in the secondary containment below the floor grating. The secondary containment is separated into a few sections by berms. The floor of each section slopes to one point where a sump pump pumps the liquid to a central sump from which the liquid is then pumped to the onsite wastewater treatment system. This central sump is the same one to which drainage from the wash-up area for metal polishing is conveyed. Arnold's also transfers by bucket air compressor condensate to this sump. *See Photos 6-7 in Attachment 1.*

Operations Other Than Metal Finishing

In the silk screen area, Arnold's washes screens in a sink, using bleach and methyl ethyl ketone. The wash water flows into the secondary containment leading to the central sump.

Arnold's applies liquid paint to parts in a spray booth, equipped with an air vacuum system and filters to catch the particles. Filters are disposed of offsite. Arnold's also has

a powder coat spray booth. No water is used in either type of spray booth. After liquid paint is applied, the painted part is placed in an oven up to 200°F. Powder-coated parts are placed in an oven up to 400°F.

Arnold's has a small lab for simple analytical procedures. The lab performs routine analysis of all the process tanks' contents. The lab has one sink. Discharge from this sink is collected in a plastic bin which is secondarily contained. The contents are sent offsite for disposal.

Rinse Procedures

All rinse tanks at the facility are static rinse tanks. Arnold's has countercurrent rinse tanks set up in some process lines, such as the black dye line. Arnold's also will use water from rinse tanks as makeup water for the process tank or soap tank upstream. For example, Arnold's uses water from the first rinse tank of the black dye rinse tanks as makeup water for the black dye tank.

During the inspection, the inspection team observed an employee spray rinsing parts over the floor grating rather than over a rinse tank. Despite instructions given by Mr. Sanchez to the employee immediately after it occurred, the inspection team observed the same behavior by the employee a second time.

Replacement of Tank Contents

Arnold's routinely analyzes the contents of its process tanks using its own on-site lab. When asked about frequency of replacement of tank contents, Arnold's provided the estimates described below.

Arnold's replaces etching solutions approximately every four months and soap solutions approximately every six months. The spent etching solutions are stored in a tote for use in any of the process lines of the metal finishing room to adjust pH. The soap solutions are sent to the onsite wastewater treatment system. Spent deoxidizer solutions are hauled offsite.

Of four anodize tanks containing sulfuric acid, Arnold's has not replaced the contents yet. Arnold's reuses some of this acid in the onsite wastewater treatment system to adjust pH. Fresh sulfuric acid is added back to the tanks.

Arnold's stated that there is no need to change out the color dyes and black dye. However, Arnold's then stated that some colors may have been replaced in the past. These dye solutions were treated in-house. However, they need to be metered slowly to the wastewater treatment system.

Arnold's replaces the nickel acetate seal approximately every six months. This liquid is batch treated.

Arnold's only adds to the alodine and zincate process tanks; no liquid is discarded. The

electroless nickel process tank contents are hauled offsite every 60 to 90 days. The rinse waters from the electroless nickel process, as well as the seal rinses, are treated in-house in the original tank, on a weekly basis.

Onsite Wastewater Treatment System

See Section 1.3

1.2 Facility Wastewater Sources

Arnold's generates the following wastewaters:

- Spent soap solutions from the cleaning line of the metal finishing room
- Other spent metal finishing baths
- Dragout/spray rinse waters/any spillage collected in the secondary containment area
- Batch-treated wastewater
- Sink drainage from washing screens
- Sink drainage from polishers' wash area
- Air compressor condensate
- Lab sink drainage

The above listed wastewaters, except for the second and last item of the list, are all sent to an onsite wastewater treatment system. See Section 1.1 above for a description of how other spent metal finishing baths are handled. Lab sink drainage is collected and sent offsite for appropriate disposal. Once the wastewaters are processed through the onsite wastewater treatment system, the treated wastewater collects in a sample box before discharging to the local sewer system. *See Photo 8 in Attachment 1.*

The discharge pipe from the sample box eventually ends at an open elbow which is of a larger diameter than the discharge pipe. This elbow runs through the wall of the metal finishing room near the floor and leads to piping through the floor eventually connecting to the local sanitary sewer system. When asked why the line from the sample box discharged into this elbow configuration, Arnold's stated that the City had required this configuration in the past. The City inspector that was present during this inspection was not aware of this requirement by the City. This type of configuration does not seem necessary and facilitates potential illegal discharges downstream of the sample point. *See Photos 9-10 in Attachment 1.*

EPA notes Arnold's positive practices of efficient water use such as the use of drip guards between tanks of some process lines, all static rinse tanks, some 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 or soap tank, and reuse of acids from the process lines for pH adjustment elsewhere in the process room or in the wastewater treatment system. EPA encourages Arnold's to continue its efforts and consider additional efficient water use practices, such as equipping rinse tanks with hang bars and spray rinse hoses to encourage employees to rinse parts over the rinse tank and

not over the floor grating.

1.3 Facility Process Wastewater Treatment System

From the central sump to which metal finishing process wastewaters drain from the secondary containment area, wastewater is pumped to the Surge Tank of the onsite wastewater treatment system. The wastewater then flows by gravity to Tank #1. Arnold's adds ferric chloride and sulfuric acid to this tank. Their setpoint for pH is 3 to 4. At the time of the inspection, the pH meter read 3.70. The wastewater is then sent to Tank #2. Arnold's adds sodium hydroxide and flocculant to this tank. The pH setpoint is 10 to 11. At the time of the inspection, the pH meter read 10.18. The wastewater then flows to a clarifier. Clarifier bottoms are pumped to a thickener tank and subsequently to a filter press. The filter cake is hauled away for offsite disposal. The filtrate is sent back to the central sump. *See Photos 11-13 in Attachment 1.*

Clarifier effluent is sent to a holding tank and subsequently to a sand filter. The filtered effluent is conveyed to the sample point and then to the local sewer system. At the time of the inspection, the pH meter at the final sample point read 9.44. *See Photo 14 in Attachment 1.*

Some of the process wastewater is batch treated directly in the process tank. This in-tank batch treatment occurs for the electroless nickel rinse and seal rinses. The basic procedure is that Arnold's adds ferric sulfate to the tank, adjusts the pH to 9.5, and adds polymer. After about four hours, the nickel will have precipitated out. Arnold's lab checks the water for pollutants and, if pollutant levels are low enough, Arnold's sends the water to the onsite 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). Arnold's metal finishing services of electroless plating, anodizing, chemical coating, and chemical etching trigger 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.

For the time period reviewed of January 1, 2008 through August 22, 2011, the facility has shown inconsistent compliance with federal nickel and zinc limits in 2011. (See Section 2.2 below for details on Arnold's violations of local limits.) In addition, Arnold's has, on more than one occasion, been late in submitting reports required by federal pretreatment standards. *See Attachment 2 for a portion of the compliance monitoring data for nickel and zinc.*

The City's 2011 first semiannual pretreatment report stated that the cause of the violation appeared to be failure to maintain the pretreatment system and an inadequate pretreatment system.

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, dated September 30, 2011, is Permit No. SC-369B. The facility's sample point, as indicated by description in the permit, is located "after all pre-treatment, and immediately prior to final discharge to the sanitary sewer, located in corner of plating room...." The general location of the facility's sample point is also indicated on a diagram in the permit. The facility's permit requires Arnold's to sample semiannually.

The City has issued numerous enforcement notices, including verbal warnings, warning notices, and notices of violation, to Arnold's over the past few years for violations of federal and local nickel and zinc violations. Arnold's has also been cited for late submittal of reports. For the period reviewed by EPA of January 1, 2008 through August 22, 2011, Arnold's violated local nickel and zinc limits on a total of 9 sampling dates, the first of which was discovered by the City on November 24, 2009 for nickel. Some of these violations were discovered in December 2010 when the City conducted surveillance monitoring and found violations of the local nickel limits on three sampling dates.

On March 10, 2011, the City held a compliance meeting with Arnold's. The resulting Compliance Agreement contained requirements with a deadline of April 30, 2011. According to the City's 2011 first semiannual pretreatment report to EPA, Arnold's

submitted report was incomplete. The City held a second compliance meeting with Arnold's on August 3, 2011. The resulting Compliance Agreement contains requirements, including an evaluation report of the pretreatment system, with a deadline of August 31, 2011. Arnold's has since requested an extension to this deadline due to its plans to expand its facility to include the site next door. As part of the expansion, the wastewater treatment system will be moved to the new site. The City granted this request, and the new deadline was established as January 1, 2012. Based on latest conversations with the City, EPA has learned that the City has allowed Arnold's to submit the evaluation report after it has completed installation of the wastewater treatment system at its new site.

Some key requirements of Arnold's current compliance agreement include submittal of a report based on an evaluation of the pretreatment system performed by a third-party California licensed engineer, implementation of the pretreatment system upgrades per the evaluation report, and submittal of a slug discharge prevention plan. The compliance agreement also requires Arnold's to sample monthly for six months for chromium, nickel, and zinc, from September 2011 through February 2012.

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: electroless plating, anodizing, 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. Over the past few years, the facility has had some problems with consistent compliance with federal and local nickel and zinc limits and has been late in submitting reports.
4. Arnold's did not fulfill the requirements of the first compliance agreement, dated March 10, 2011, with the City of San Jose.
5. Arnold's is currently under a second compliance agreement, dated August 3, 2011, with the City of San Jose. Key requirements include having the pretreatment system evaluated, submitting an evaluation report, implementation of proposed upgrades to the pretreatment system, and six months' sampling for chromium, nickel, and zinc. Arnold's requested and was granted an extension for submittal of the evaluation report.

Attachment 1: Photos



Photo 1

Wash-up area near the metal polishing machines
Taken by Anna Yen on August 16, 2011



Photo 2

Drain pipes below the sinks of wash-up area
Taken by Anna Yen on August 16, 2011



Photo 3

Holding tank of wash-up area
Taken by Anna Yen on August 16, 2011



Photo 4

Discharge pipe from holding tank
Taken by Anna Yen on August 16, 2011



Photo 5

Cleaning process line in metal finishing area
Taken by Anna Yen on August 16, 2011



Photo 6

Central sump

Taken by Anna Yen on August 16, 2011



Photo 7

View of central sump adjacent to
the wastewater treatment system

Taken by Anna Yen on August 16, 2011



Photo 8

Sample box

Taken by Anna Yen on August 16, 2011



Photo 9

Discharge pipe from sample box to local sanitary sewer system
Taken by Anna Yen on August 16, 2011



Photo 10

Discharge pipe to local sanitary sewer system –
view of pipe entering elbow configuration
Taken by Anna Yen on August 16, 2011



17Surge tk of WWTS.jpg

Photo 11

Surge tank of wastewater treatment system
Taken by Anna Yen on August 16, 2011



18Tk1.jpg

Photo 12

Tank 1 of the wastewater treatment system
Taken by Anna Yen on August 16, 2011



Photo 13

Wastewater treatment system
Taken by Anna Yen on August 16, 2011



Photo 14

Holding tank and sand filter
of the wastewater treatment system
Taken by Anna Yen on August 16, 2011

Attachment 2: Compliance Monitoring Records Review

Federal Categorical Limits in mg/L (40 CFR 433.17):	Nickel	Zinc
Daily	3.98	2.61
Monthly	2.38	1.48
	Measured Levels (mg/L)*	
Sample Date	Nickel	Zinc
7/6/2011	0.03	0.01
6/24/2011	1.62	4.89
6/8/2011	0.07	0.05
5/13/2011	4.56	4.8
3/29/2011	0.09	
3/14/2011	0.43	
2/4/2011	0.05	0.08
12/17/2010	0.38	0.5
10/27/2010	0.024	0.08
8/16/2010	0.16	0.14
5/27/2010	0.35	0.3
4/6/2010	0.070	0.05
3/10/2010	0.33	0.3
3/8/2010	0.25	
2/2/2010	1.26	1.13
1/7/2010	0.18	
1/5/2010	0.47	
12/18/2009	0.344	0.27
11/24/2009	1.88	1.06

* This table does not contain the full set of nickel and zinc data reviewed by EPA. However, it does show the full set of nickel and zinc data for the period 11/24/09 – 7/6/11 which includes the dates of violation of the federal nickel and zinc limits.

Key:

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