



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

March 5, 2007

In Reply Refer To: WTR-7

Craig Hanriot, President
Technical Metal Finishing Company
3401 Pacific Avenue
Burbank, California 91505

Re: September 5, 2006 Clean Water Act Inspection

Dear Mr. Hanriot:

Enclosed is the March 5, 2007 report for our September 5, 2006 inspection of Technical Metal Finishing. Please submit a short response to the findings in Sections 2 through 5 of this report, to EPA, Burbank, and the Regional Water Quality Control Board, by **May 30, 2007**.

The main findings are summarized below:

- 1 Technical Metal Finishing continues to qualify as a job-shop metal finisher subject to the Federal standards for electroplating existing sources discharging less than 10,000 gpd.
- 2 Compliance with Federal standards is achieved without treatment in-place because Technical Metal Finishing qualifies for regulation under an abbreviated list of standards and the operations do not generate the regulated pollutants. However, any discharge over 10,000 gallons per day or new installations would subject Technical Metal Finishing to regulation under an expanded list of standards covering the pollutants generated on-site.
- 3 Rinses were not observed running on-demand which may render the sampling only provisionally usable to determine compliance. Rinses should be operated on-demand. The sampling should be at least quarterly for the pollutants of concern including total toxic organics.

I certainly appreciate the helpfulness extended to me by yourself and your staff during this inspection. I remain available to you and Burbank to assist in any way. Please call (415) 972-3504 or e-mail at arthur.greg@epa.gov.

Sincerely,

Greg V. Arthur
CWA Compliance Office

Enclosure

cc: Kristy Laird, United Water, Burbank
Dan Radulescu, RWQCB-Los Angeles



U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User: Technical Metal Finishing Company
3401 Pacific Avenue, Burbank, California 91505
40 CFR 413 Subparts A, D, E, and F – Job-Shop Electroplating

Treatment Works: City of Burbank
Water Reclamation Plant
(NPDES Permit CA0055531)

Date of Inspection: September 5, 2006

Inspection Participants:

US EPA: Greg V. Arthur, Region 9, CWA Compliance Office, (415) 972-3504

RWQCB-Los Angeles: None

City of Burbank: Kristy Laird, United Water, Source Inspector, (818) 972-1115 ex23
Jeff Carter, United Water, Source Manager, (818) 972-1115 ex17

Technical Metal Finishing: Craig Hanriot, President, (818) 954-9504
Brad Lewis, Assistant Plant Manager, (818) 954-9504
Victor Pasag, General Manager, (818) 954-9504

Report Prepared By: Greg V. Arthur, Environmental Engineer
March 5, 2007



1.0 Scope and Purpose

On September 5, 2007, EPA, and the City of Burbank conducted a compliance evaluation inspection of Technical Metal Finishing Company in Burbank, California. The purpose was to ensure compliance with the Federal regulations covering the discharge of non-domestic wastewaters into the sewers. In particular, it was to ensure:

- Classification in the proper Federal categories;
- Application of the correct standards at the correct sampling points;
- Consistent compliance with the standards; and
- Fulfillment of Federal self-monitoring requirements.

Technical Metal Finishing is a significant industrial user (“SIU”) within the Burbank sewer service area whose compliance was assessed as part of an on-going EPA evaluation of industrial users in EPA Region 9 by sector. The inspection participants are listed on the title page. Arthur conducted the inspection and Lewis took photographs on September 5.

1.1 Process Description

Technical Metal Finishing is a full-service aluminum anodizing job-shop that specializes in complex finishing of masked parts.

The operations involve alkaline cleaning, sulfuric/nitric-acid deoxidation, Type I chromic-acid anodizing, Types II and III sulfuric-acid anodizing, black, blue, red, and yellow dye, rack strip, alkaline cleaning, wax application, solvent wax mask strip, aqueous degreasing, nickel acetate sealing, and dichromate sealing. The operations also involve dye penetrant NDI testing, limited machining, priming, painting, and a small amount of painting on steel.

Technical Metal Finishing does not own parts that undergo metal finishing on-site. It started up around 1981, installed secondary containment around 1986, and added the dye penetrant line in 2006. Technical Metal Finishing discharges non-domestic wastewaters to the Burbank domestic sewers through a single sewer connection designated in this report by permit number as IWD-1048. Domestic sewage discharges through separate connections downstream of the industrial wastewater connection.

1.2 Facility SIC Code

Technical Metal Finishing is assigned the SIC code for electroplating, plating, polishing, anodizing, and coloring of metals (SIC 3471).

1.3 Facility Wastewater Sources

The metal finishing lines generate spents, rinses, and residuals. The tanks are referenced in this report are by the shop designations. *See* Appendix 1.



Spent Solutions – The imparted contamination from the processing of parts and the progressive drop in solution strength results in the generation of spent solutions. Every six-months to a year, Technical Metal Finishing hauls off-site for disposal the spents from sulfuric-acid anodizing deoxidation, solvent wax masking strip, and the main alkaline cleaning. Everything else is regenerated through additions. The list of spents follows below.

On-Site Batch Treatment	Hauled Off-site to Haz	Regenerated By Additions
none	T1 - alkaline cleaning T7 - deoxidation T9 - Type II anodizing T28 - Type III hard anodize T40 - wax mask strip	T17 - Cr-acid anodizing T11 - black dye T22 - blue dye T23 - red dye Barrel - yellow dye Barrel - nitric-acid strip T44 - acid safety rack strip T3 - alkaline etch T40A - aqueous degreasing T15 - nickel acetate seal T13 - dichromate seal T16 - hot water seal T36 - wax application
n/a	Off-Site Disposal	No Release

Rinses – Technical Metal Finishing generally employs partial on-demand first-stage overflow rinses dedicated to specific solution tanks. There are also a small handful of first-stage static and spray rinses reused as solution tank make-up. The overflow rinses can be considered only partially on-demand because the workers only can turn on or off a common inlet valve. In contrast, the overflow rinses are not conductivity-controlled, or switched on and off by timer, electric eye, or kick plate, in order to be normally off when no parts are undergoing processing. All rinse waters discharge to the sewers adjusted for pH but otherwise untreated for the removal of metals, cyanides, and solids. Chromium bearing rinses are metered through a surge tank prior to discharging to the sewers. The list of rinses follows below.

Partial On-demand Overflows	Static Rinses	
T10 - deox 1° overflow ✓ T35 - Cr-anodize 2° ovrfl ✓ ✓ first to surge tank	T8 – alk clean 1° overflow TR3 - hard anodize 1° ovrfl TR1 - anodize 1° overflow TR2 - anodize 2° overflow	T18 - Cr-anodize 1° spray T40B - degrease 1° static
Discharged to IWD-1048		Returned as Make-Up

Residuals - Spills collected within secondary containment are vacuumed to drums for off-site hauling as hazardous. Otherwise, Technical Metal Finishing does not employ practices that generate residuals such as in-tank sludge removal, desaturation, or the circulation through filters to extend the useful life of the solutions. Technical Metal Finishing also does not provide on-site wastewater treatment. As a result, the operations do not generate tank sludges, spent filters, filter press cake, reverse plate-out solids, or solution residuals.



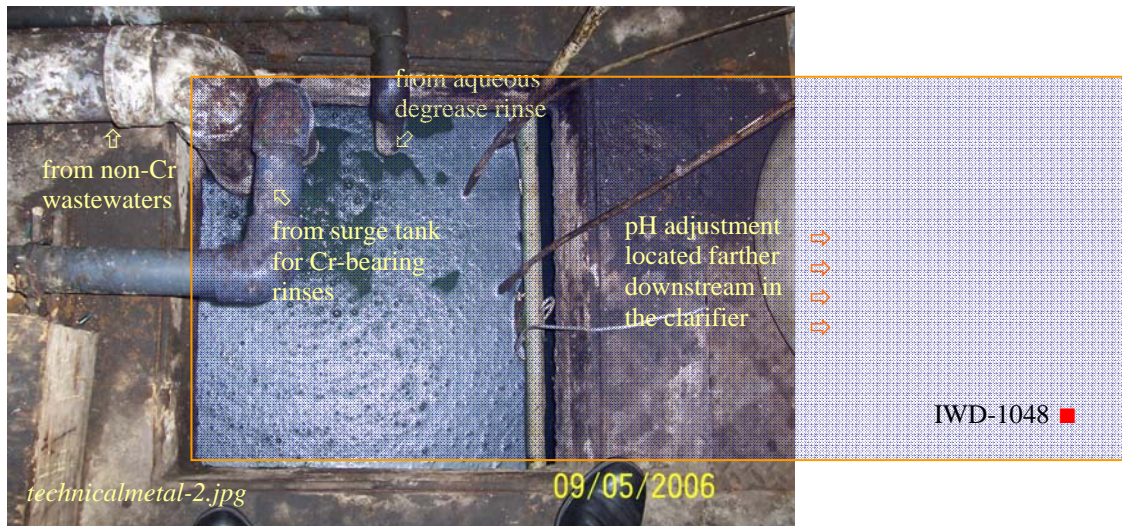
Reuse - Cooling tower blowdown and pump priming water are reused as make-up into the anodizing rinses in tanks TR2 and TR3 respectively.

1.4 Facility Process Wastewater Composition

The process wastewaters listed in section 1.3 above would be expected to contain copper, chromium, lead, nickel, silver, zinc, total cyanide, and acidity, as well as oil & grease, salts, and surfactants, iron, aluminum, free oils, suspended solids, and other pollutants in the surface grime cleaned off of parts.

1.5 Facility Process Wastewater Treatment

Technical Metal Finishing provides only on-site flow-through pH adjustment of the rinses. There is no treatment for the removal of metals, complexed cyanide, or solids. The overflow rinses for deoxidation and chromic-acid anodizing first fill a 1,300 gallon surge tank for testing prior to metered discharge to the final three-stage clarifier. The surge tank is tested for chromium, sulfates, pH, and total dissolved solids. The chemical feed for pH adjustment is controlled by a pH meter installed mid-way in the clarifier. The final pH and flow rate are monitored through continuous metering to strip charts at the permitted discharge point to the sewers, IWD-1048. *See* the photo and diagram below.



*Photo: Final Clarifier
Taken By: Brad Lewis
Date: 09/05/06*

Operational Controls – Technical Metal Finishing employs just two operational controls to improve the performance of the flow-through pH adjustment. The only operational controls are (1) pH metering mid-way in the final clarifier that controls chemical feed dosage, (2) metered feed of chrome-bearing wastewaters from a surge tank. These operational controls reduce the operational variability not only inherent in pH adjustment, but also imparted into treatment from the sources, thereby improving the system performance. Otherwise, since no



treatment is provided for the removal of metals or cyanide, there are no other operations controls.

Sewer Discharge – The final discharge sump connection to the sewer is designated as the permitted compliance sampling point, IWD-1048.

1.6 POTW Legal Authorities

The City of Burbank – Burbank operates its own wastewater treatment plant, which discharges to the Los Angeles River. Burbank also operates an approved pretreatment program as required by the State of California in the Los Angeles RWQCB's Waste Discharge Requirements, No. R4-2006-0085, reissued to Burbank in 2006 and serving as NPDES Permit No. CA0055531. Burbank has established a sewer use ordinance that applies to all industrial users within its city limits. Under this authority, Burbank issued industrial user permit No.1048 covering the sewer discharge from Technical Metal Finishing.

1.7 Photo Documentation

Brad Lewis of Technical Metal Finishing took five photos of the facility on September 5 stored under the file names *technicalmetal-1.jpg* through *technicalmetal-5.jpg*. One of the five photos is depicted in this report. The others were duplicates.

1.8 Sampling Record

All compliance samples are collected by Burbank from the final compartment of the clarifier within the facility at IWD-1048. *See* Appendix 3 for a summary of the 2003-2006 sampling.



2.0 Sewer Discharge Standards and Limits

Federal categorical pretreatment standards (where they exist), national prohibitions, and the local limits (where they exist) must be applied to the sewer discharges from industrial users. (40 CFR 403.5 and 403.6).

Summary

The Federal standards in 40 CFR 413 for existing source job-shop metal finishers discharging under 10,000 gallons per day apply to all process wastewater discharges from Technical Metal Finishing through IWD-1048. The General Manager recalls that secondary containment was installed approximately 20 years ago but that it did not involve the removal of the tanks. As a result, Technical Metal Finishing does not qualify as a new source, even though the installation of secondary containment after promulgation of the metal finishing rule in 40 CFR 433 often causes a job-shop to qualify for regulation under the more stringent new source metal finishing standards. The Burbank permit correctly applies local limits. The application of Federal standards, national prohibitions, and local limits was determined through visual inspection. *See* Appendix 2.

Requirements

- None.

Recommendations

- Technical Metal Finishing should submit a report detailing the construction involved in the installation of secondary containment in the mid-1980s, and the installation of any new lines since then.

2.1 Classification by Federal Point Source Category

Technical Metal Finishing qualifies as a job-shop metal finisher subject to the Federal job-shop electroplating standards for existing sources in 40 CFR 413. Burbank correctly classified Technical Metal Finishing. Federal standards are self-implementing which means they apply to regulated waste streams whether or not they are implemented in a local permit. The Federal rules in 40 CFR 403.6 define domestic sewage and non-contact wastewaters to be dilution waters.

New or Existing Sources – Technical Metal Finishing continues to be subject solely to the Federal standards for existing sources. Under the definitions in 40 CFR 403.3(k), a process constructed at an existing source job-shop metal finisher after August 31, 1982 is a new source (1) if it entirely replaces a process which caused a discharge from an existing source or (2) if it is substantially independent of the existing sources on-site. This means new source standards apply to the original installation of the metal finishing lines, rebuilt or moved lines, or existing lines converted to do new operations. This also means that the new source standards generally do not apply to the piecemeal replacement of tanks for



maintenance in otherwise intact metal finishing lines, nor do they apply to treatment upgrades without altering production. The preamble to the final 1988 Federal rule states that the new source standards apply when “an existing source undertakes major construction that legitimately provides it with the opportunity to install the best and most efficient production process and wastewater treatment technologies” (*Fed Register, Vol.53, No.200, October 17, 1988, p.40601*).

There have been configuration changes at Technical Metal Finishing after the August 31, 1982 promulgation date for the metal finishing rule that did not qualify the facility as a new source. According to the General Manager, around 20 years ago, Technical Metal Finishing installed secondary containment without the relocation and re-installation of the tanks. If it had involved the physical relocation and re-installation of entire lines, then that would qualify as construction that "legitimately provides it with the opportunity to install the best and most efficient production process and wastewater treatment technologies". In that case, then the entire facility would have qualified as a new source. Also in 2006, Technical Metal Finishing installed the dye penetrant line. Dye penetrant testing is unregulated under the job-shop electroplating rule in 40 CFR 413 but regulated under the metal finishing rule in 40 CFR 433 as an associated operation if other operations already qualify. Since no part of Technical Metal Finishing qualifies under the metal finishing rule as a new source, the dye penetrant line also does not qualify even though it was installed after August 31, 1982. Therefore, the dye penetrant line is unregulated under the Federal categorical standards.

2.2 Local Limits and National Prohibitions

Local limits and the national prohibitions are meant to express the limitations on non-domestic discharges necessary to protect the sewers, treatment plants and their receiving waters from adverse impacts. In particular, they prohibit discharges that can cause the pass-through of pollutants into the receiving waters or into reuse, the operational interference of the sewage treatment works, the contamination of the sewage sludge, sewer worker health and safety risks, fire or explosive risks, and corrosive damage to the sewers. The national prohibitions apply nationwide to all non-domestic sewer discharges. The Burbank local limits apply to non-domestic discharges within the Burbank city limits.

2.3 Federal Categorical Pretreatment Standards Existing Source Job-Shop Electroplating - 40 CFR 413

40 CFR 413 >10kgpd	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CNt	CNa	TTO	TM
daily-maximum (mg/l)	1.2	7.0	4.5	0.6	4.1	-	4.2	1.9	5.0	2.13*	10.5
four-day average (mg/l)	0.7	4.0	2.7	0.4	2.6	-	2.6	1.0	2.7	-	6.8
stat conversion to mo-avgs	0.5	2.5	1.8	0.3	1.8	-	1.8	0.55	1.5	-	5.0
bold - standards that apply if the discharge is <10,000 gpd / * TTO 4.57 mg/l											

Applicability - The Federal job-shop electroplating standards apply to job-shop metal finishers that do not own more than 50% of the parts processed and were in operation in their present configuration before the August 31, 1982 proposal date of the Federal metal finishing



rule. This means the job-shop electroplating standards in 40 CFR 413.44(b)(f), and 413.54(b)(f) for dischargers under 10,000 gallons per day apply to process wastewater discharges from Technical Metal Finishing to the sewers through IWD-1048.

Basis of the Standards – The job-shop electroplating standards were based on a model pretreatment unit that comprises metals precipitation, settling, sludge removal, source control of toxic organics, and if necessary, cyanide destruction and chromium reduction. For dischargers of less than 10,000 gallons per day, the model pretreatment unit was applied only to process wastewaters bearing cadmium, lead, amenable cyanide, or total toxic organics, which means where the process do not involve these pollutants, the standards are based on source control. The best-available-technology standards were set where printed circuit board shops and job-shop metal finishers with model treatment operated at a long-term average and variability that achieved a compliance rate of 99% (1 in 100 chance of violation).

Adjustments – The Federal categorical pretreatment standards at IWD-1048 do not need to be adjusted to account for dual Federal categories or for dilution. Also, the statistical equivalent monthly-average standards for 40 CFR 413 are unnecessary since they are used to calculate monthly-average standards for dual Federal categories using the combined wastestream formula in 40 CFR 403.6(e).

Compliance Deadline - Existing source job-shop metal finishers were required to comply with all Federal job-shop electroplating standards by the final compliance deadline of July 31, 1986.

2.5 Point(s) of Compliance

The permit designates the final clarifier inside the facility as the compliance point (designated in this report as IWD-1048).

Federal Standards - Federal categorical pretreatment standards apply end-of-process-after-treatment to all Federally-regulated discharges to the sewers. The sample point IWD-1048 is also a suitable end-of-process-after-treatment sample point representative of the day-to-day discharge of Federally-regulated wastewaters.

Local Limits - Local limits and the national prohibitions apply end-of-pipe to all non-domestic flows. The sample point designated as IWD-1048 is a suitable end-of-pipe sample point representative of the day-to-day non-domestic wastewater discharges.

2.6 Compliance Sampling

The national prohibitions are instantaneous-maximums and are comparable to samples of any length including single grab samples. Federal categorical pretreatment standards are daily-maximums comparable to 24-hour composite samples. The 24-hour composite samples can be replaced with single grabs or manually-composited grabs that are representative of the sampling day's discharge.



3.0 Compliance with Federal Standards

Industrial users must comply with the Federal categorical pretreatment standards that apply to their process wastewater discharges. 40 CFR 403.6(b).

Categorical industrial users must comply with the prohibition against dilution of the Federally-regulated waste streams as a substitute for treatment. 40 CFR 403.6(d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

Summary

Technical Metal Finishing does not employ wastewater treatment equivalent to the models used in originally setting the Federal standards. However, model treatment should not be necessary to meet the Federal standards since the operations do not involve cadmium-, free cyanide-, or lead-bearing waste streams. As a result, the sample record shows consistent compliance with the abbreviated set of Federal standards that apply to Technical Metal Finishing. Future compliance would be expected as long as it (1) does not become a new source and (2) does not discharge more than 10,000 gpd to the sewer. There are two shortcomings. First, the Burbank permit allowed Technical Metal Finishing to self-certify compliance with a toxics organics management plan in lieu of self-monitoring for toxic organics. The presence of solvent wax stripping on-site calls into question the validity of self-certification in lieu of self-monitoring because of potential spills, drips, and drag-out into subsequent steps. As a result, the sample record cannot be considered to show consistent compliance with the Federal total toxic organics standard. A second shortcoming is the continuous running of rinses without parts processing, thereby causing the sampling results to be provisionally useable for determining compliance. *See Appendix 3.*

Requirements

- The discharge must *always* be less than 10,000 gpd in order to qualify Technical Metal Finishing for the less stringent and more narrowly applied Federal standards for small existing source job-shop metal finishers.

Recommendations

- The running rinses should be operated on-demand when there are parts undergoing processing or the rinses should be retrofitted to be conductivity-controlled.

3.1 Sampling Results

The 2003-2006 sample records for Technical Metal Finishing collected by Burbank from the clarifier inside of the facility consist of semi-annual sampling. All metals samples were 24-hour composites. All cyanide samples were grabs. All sample results are provisionally



usable for determining compliance with the Federal standards because they account for all rinses and spents discharged. However, they are only provisionally usable because they may be diluted by rinses observed to be running continuously without parts undergoing processing, and a single sample in six months may not be representative of all discharge conditions over the six-month reporting period. Finally, Technical Metal Finishing is, but should not be, exempted from total toxic organics sampling under an approved toxic organics management plan, as set forth in 40 CFR 413 and 433. *See* item 5.0 of this report.

3.2 Best-Available-Technology Treatment

The treatment in-place is not equivalent in design and performance to the best-available-treatment ("BAT") technology models used in originally setting the Federal standards. However, model treatment should not be necessary to meet the Federal standards since the operations do not involve cadmium-, free cyanide-, or lead-bearing waste streams, and as long as Technical Metal Finishing (1) does not become a new source and (2) does not discharge more than 10,000 gpd to the sewer. As a result, the sampling results provisionally indicate that Technical Metal Finishing, as currently designed and operated, consistently complies with its Federal standards. *See* Appendix 3.

The results, however, may be biased in favor of compliance because the overflowing rinses run without parts undergoing processing. Excessive rinsing produces samples that are diluted by excess make-up water, a practice which can be prohibited by the Federal rule against dilution as a substitute for treatment. Composite sampling for all Federally-regulated pollutants from IWD-1048 would be fully usable to determine compliance with the Federal BAT standards once the overflow rinses are retrofitted to operate on-demand. *See* sections 3.3 and 5.0 below.

If the facility becomes a new source through the installation of a new metal finishing line, for example, the more stringent and comprehensive Federal standards for new source metal finishers in 40 CFR 433 would then apply. Likewise, if discharges ever exceed 10,000 gpd, the more comprehensive Federal standards for larger job-shop metal finishers in 40 CFR 413 would then apply. The 10,000 gpd cut-off is not a maximum average but rather an absolute maximum value to qualify for the exemption from the comprehensive standards. In both cases, the more comprehensive standards cover pollutants generated by the operations on-site, in particular, chromium, copper, zinc, and total cyanide. When these more comprehensive standards apply, BAT treatment or its equivalent is nearly always necessary to consistently comply with Federal standards. BAT treatment would necessarily incorporate the following:

- chromium reduction, metals precipitation, and settling
- reaction end-point metering,
- the segregated batch treatment of high-strength spent solutions,
- diversion of non-compatible and low-strength wastewaters around treatment, and
- well controlled delivery methods.



3.3 Dilution as a Substitute for Treatment

The Federal standards in 40 CFR 403.6(d) prohibit "dilution as a substitute for treatment" in order to prevent compromising BAT model treatment with dilute waste streams. In particular, this prohibition applies when sample results for a diluted waste stream are below the Federal standards and the apparent compliance is used to justify discharge without treatment. There are two conditions that need to be established in order to make a determination of non-compliance with this prohibition. First, some or all of the Federally-regulated wastewaters must discharge without undergoing BAT model treatment or its equivalent. Second, there must be some form of excess water usage within a Federally-regulated process.

Technical Metal Finishing may not meet the first condition since all running rinses would not be expected to entrain any of the Federally-regulated pollutants and thus would not require BAT model treatment for metals and cyanide. Technical Metal Finishing meets the second condition when any of these rinses are among those that do not in fact operate on-demand.

3.4 Bypass Provision

The Federal standards in 40 CFR 403.17 prohibit the bypassing of any on-site treatment necessary to comply with standards unless the bypass was unavoidable to prevent the loss of life, injury, or property damage, and there were no feasible alternatives. This provision explicitly prohibits bypasses that are the result of a short-sighted lack of back-up equipment for normal downtimes or preventive maintenance. It also explicitly prohibits bypasses that could be prevented through wastewater retention or the procurement of auxiliary equipment. It specifically allows bypasses that do not result in violations of the standards as long as there is prior notice and approval from the sewerage agency or State.

There is no possibility of unauthorized bypassing at Technical Metal Finishing since there is no treatment on-site to bypass.



4.0 Compliance with Local Limits and National Prohibitions

All non-domestic wastewater discharges to the sewers must comply with local limits and the national prohibitions. 40 CFR 403.5(a,b,d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

Summary

The processes at Technical Metal Finishing would be expected to generate wastewaters containing acids, caustics, hexavalent chromium and complexed cyanide from chromium conversion coating, solvent and dissolved wax, copper and zinc from the etching of aluminum alloys, and nickel from nickel acetate sealing. Technical Metal Finishing does not provide treatment beyond pH adjustment. There have been no violations of the local limits. However, retrofitting to on-demand rinsing would result in proportionally higher pollutant concentrations with potential values over the local limits for hexavalent chromium and amenable cyanide. Both of these pollutants are associated strictly with chromic-acid anodizing and chromium conversion coating, currently segregated to the surge tank. *See* Appendix 3. Also *see* Sections 3.0 and 5.0 of this report.

Requirements

- None.

Recommendations

- The surge tank contents could be reclaimed through ion exchange columns as de-ionized make-up water, with spent columns hauled off-site for regeneration by the vendor.

4.1 National Objectives

The general pretreatment regulations were promulgated in order to fulfill the national objectives to prevent the introduction of pollutants that:

- (1) cause operational interference with sewage treatment or sludge disposal,
- (2) pass-through sewage treatment into the receiving waters or sludge,
- (3) are in any way incompatible with the sewerage works, or
- (4) do not improve the opportunities to recycle municipal wastewaters and sludge.

This inspection did not include an evaluation of whether achievement of the national objectives in 40 CFR 403.2 have been demonstrated by the Burbank wastewater treatment plant through consistent compliance with their sludge and discharge limits.



5.0 Compliance with Federal Monitoring Requirements

Significant industrial users must self-monitor for all regulated parameters at least twice per year unless the sewerage agency monitors in place of self-monitoring. 40 CFR 403.12(e) & 403.12(g).

Each sample must be representative of the sampling day's operations. Sampling must be representative of the conditions occurring during the reporting period. 40 CFR 403.12(g) and 403.12(h).

Summary

The sample record for Technical Metal Finishing does not involve self-monitoring for toxics but rather consists of only monitoring conducted by Burbank. All of the monitoring results are representative of the overall discharge of treated and untreated wastewater over the sampling day but not over the six-month reporting period. In particular, there should be separate monitoring events representative of the presence or absence of wastewater contributions from the surge tank. Monitoring should encompass the pollutants of concern comprising the Federally-regulated pollutants (*cadmium, lead, amenable cyanide, total toxic organics*) and the other pollutants generated in significant amounts (*hexavalent chromium, zinc, copper, nickel, and pH*). Technical Metal Finishing appropriately conducts continuous self-monitoring for pH and flow. A recommended monitoring schedule is included as part of Appendix 2.

Requirements

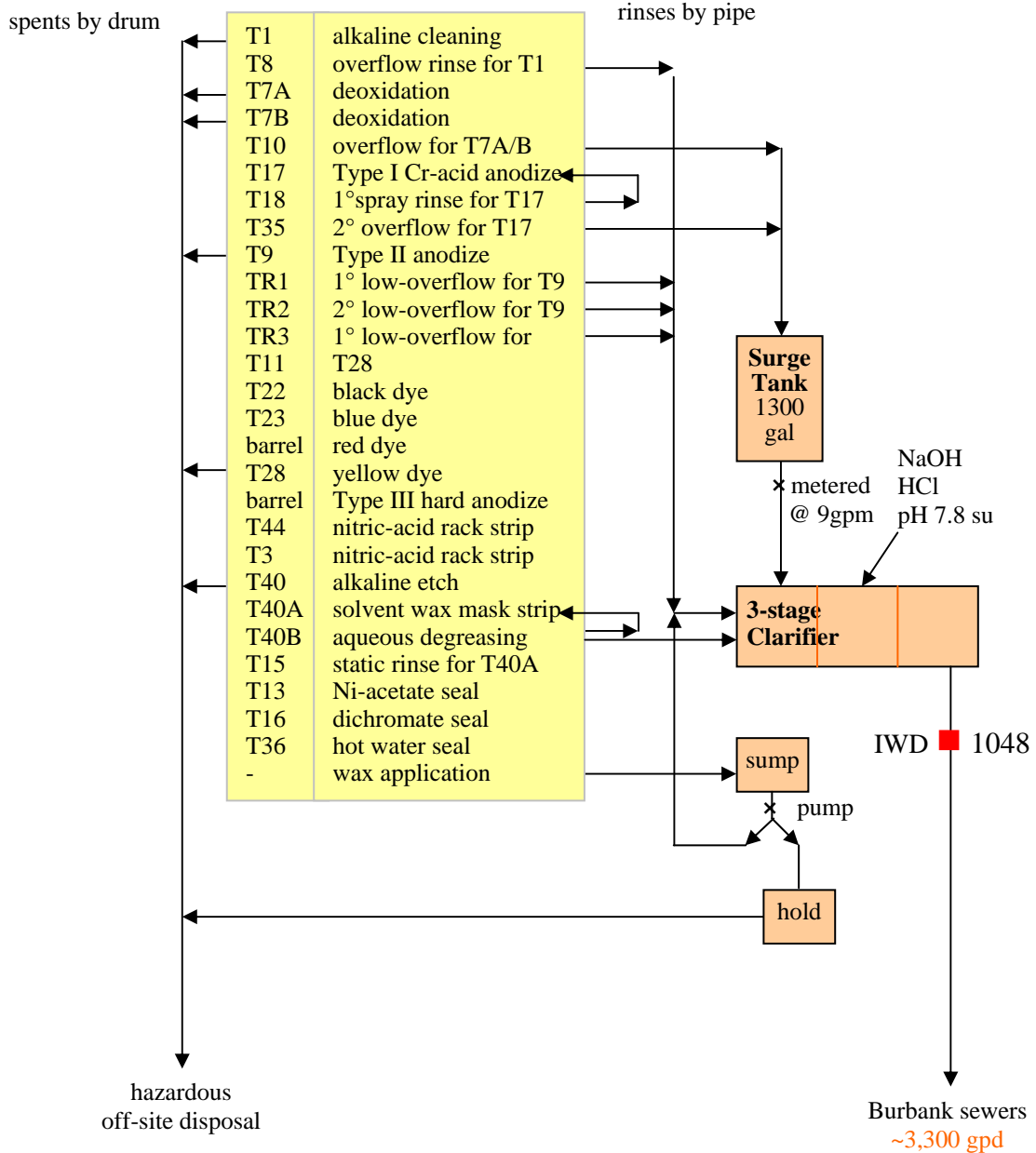
- The wastewater discharges through IWD-1048 must be sampled to account for two conditions: (1) with contributions from the surge tank, and (2) without contributions.
- The process-related wastewater discharges must be sampled for total toxic organics as long as the operations include solvent wax stripping.

Recommendations

- Self-monitoring results for continuous pH and flow should be summarized and reported each month. The pH each day should be summarized by the number of minutes below 2.0, between 2.5 and 5.5, between 5.5 and 9.5, between 9.5 and 12.0, and above 12.5.



Appendix 1
 Technical Metal Finishing
 Schematic of the Wastewater Collection and Treatment





Appendix 2

Sewer Discharge Standards and Limits
Technical Metal Finishing @ IWD-1048

pollutants of concern (mg/l)	Fed categorical stds		local limits	monitoring
	40 CFR 413 (d-max)	<10 kgpd (mo-av)	nat'l prohib (instant)	frequency IWD-1048
arsenic	-	-	3.0	③
cadmium	1.2	0.7	15.0	2 / 6-months ⑤
total chromium	-	-	10.0	1 / 6-months
hex chromium	-	-	3.0	2 / 6-months ⑤
copper	-	-	15.0	1 / 6-months
lead	0.6	0.4	5.0	2 / 6-months ⑤
mercury	-	-	0.005	③
nickel	-	-	12.0	1 / 6-months
silver	-	-	3.0	③
zinc	-	-	25.0	1 / 6-months
total cyanide	-	-	10.0	2 / 6-months ⑤
amenable cyanide	5.0	2.7	2.0	2 / 6-months ⑤
total metals ④	-	-	30.0	1 / 6-months
total toxic organics	4.57	-	5.0	2 / 6-months ⑤
oil & grease-total	-	-	300.	1 / 6-months
oil & grease-free	-	-	none visible	1 / 6-months
phenol	-	-	1.5	③
selenium	-	-	1.0	③
volatile organic compounds	-	-	4.0	③
biochem oxygen demand	-	-	1000.	③
chem oxygen demand	-	-	1000.	③
total suspended solids	-	-	1000.	③
phosphates	-	-	50.0	③
sulfates	-	-	420.	③
chlorides	-	-	275.	③
dissolved sulfides	-	-	0.1	③
flow (gpd)	-	-	9500 d-max	continuous
pH min and max (s.u.)	-	-	5.5-9.5 s.u.	continuous
explosivity	-	-	① ②	③
temperature (°F)	-	-	104°F	③

- ① National-prohibitions – Closed-cup flash point <140°F and pH <5.0 su.
- ② Narrative prohibition against the introduction of flammable or explosive substances
- ③ As part of periodic priority pollutant scans in order to identify changes in discharge quality
- ④ Total metals comprise chromium, copper, nickel, and zinc
- ⑤ Separate samples of the discharge with and without contributions from the surge tank.

red – proposed increase black – unchanged green – proposed decrease



Appendix 3

Technical Metal Finishing Sampling Results @ IWD-1048
January 2004 – November 2006

pollutant (µg/l)	Jan03-Nov06			Dec05-Sep06			violation rates ① ②			sample count
	mean	99th%	max	mean	99th%	max	d-max	4-day	local	
aluminum	-	-	1750	-	-	-	-	-	0/1	1
arsenic	1.1	1.8	1.7	-	-	-	-	-	0/6	6
cadmium	3.7	16.9	20	-	-	-	0/18	0/4½	0/18	18
chromium	346.2	1137	1410	-	-	-	-	-	0/15	15
copper	113.3	218.3	184	-	-	-	-	-	0/15	15
lead	2.5	6.7	5.9	-	-	-	0/18	0/4½	0/18	18
mercury	-	-	-	-	-	-	-	-	-	0
nickel	29.0	70.4	60	-	-	-	-	-	0/16	16
selenium	2.0	3.7	3.0	-	-	-	-	-	0/8	8
silver	0.7	2.8	2.5	-	-	-	-	-	0/15	15
zinc	90.4	185.3	190	-	-	-	-	-	0/16	16
cyanide-amenable	<5	-	<5	-	-	-	0/18	0/4½	0/18	18
cyanide-total	-	-	-	-	-	-	-	-	-	0
total toxic organics	20.4	48.6	42.8	-	-	-	0/10	-	0/10	10
total metals ④	577.3	1478	1718	-	-	-	-	-	0/15	15
TDS (mg/l)	429	575	554	-	-	-	-	-	0/15	15
TSS (mg/l)	16	49	46	-	-	-	-	-	0/15	15
chloride (mg/l)	58	86	83	-	-	-	-	-	0/15	15
sulfates (mg/l)	117	274	339	-	-	-	-	-	0/15	15
oil & grease (mg/l)	2.0	7.2	8.9	-	-	-	-	-	0/14	14
flow (gpd)	-	-	-	3269	7911	11153	-	-	3/182	182
pH min (s.u.)	6.5 ③	-	6.1	-	-	-	-	-	0/6	6
pH max (s.u.)	-	-	7.2	-	-	-	-	-	-	-

- ① Daily-maximums and four-day averages comparable to Federal categorical standards
- ② Four-day average standards based on rolling averages of four consecutive sampling results.
- ③ pH median
- ④ Total metals comprise chromium, copper, nickel, and zinc