



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

September 20, 2006

In Reply Refer To: WTR-7

Jose Sandoval
Sanford Metal Processing
990 O'Brien Drive
Menlo Park, California 94025

Re: April 4, 2006 Clean Water Act Inspection

Dear Mr. Sandoval:

Enclosed is the September 20, 2006 report for our April 4 inspection of Sanford Metal Processing. Please submit a short response to the findings in Sections 2 through 5 of this report, to EPA, the South Bayside System Authority, and the Regional Water Quality Control Board, by **November 28, 2006**.

The main findings are summarized below:

- 1 Sanford Metal Processing qualifies as a metal finisher subject to the Federal new source standards. SBSA incorrectly classified it as an existing source job-shop electroplater.
- 2 There is no treatment on-site for metals removal or cyanide destruction. As a result, Sanford Metal Processing violates the Federal new source standards that now apply (nearly always for cadmium and on occasion for amenable cyanide). Segregation and treatment of the cadmium- and amenable cyanide-bearing waste streams should result in overall compliance with the Federal standards and respective local limits. The discharge will also require continuous pH metering as long as it remains uncontrolled.
- 3 A drainage line leading from a barrel filling area should be extended into the shop in order to eliminate the need for long hoses, thereby minimizing treatment bypass potential.

I certainly appreciate your helpfulness extended to me during this inspection. I remain available to SBSA and to you to assist in any way. Please do not hesitate to call me at (415) 972-3504 or e-mail at arthur.greg@epa.gov.

Sincerely,

Original signed by:

Greg V. Arthur

Greg V. Arthur

CWA Compliance Office

Enclosure

cc: Norman Domingo, SBSA
Michael Chee, RWQCB-Oakland



U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User: Sanford Metal Processing
990 O'Brien Street, Menlo Park, California 94025
40 CFR 433 Subpart A – New Source Metal Finishing

Treatment Works: South Bayside System Authority
Regional Water Treatment Plant
(NPDES Permit CA0038369)

Date of Inspection: April 4, 2006

Inspection Participants:

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

RWQCB-Oakland: None

SBSA: Robert Chapman, Water Quality Specialist, (650) 594-8411 ex141

Sanford Metal Processing: Jose Sandoval, Owner, (650) 327-5172

Report Prepared By: Greg V. Arthur, Environmental Engineer
September 20, 2006



1.0 Scope and Purpose

On April 4, 2006, EPA, and the South Bayside System Authority (“SBSA”) conducted a compliance evaluation inspection of Sanford Metal Processing in Menlo Park, 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.

Sanford Metal Processing is a significant industrial user (“SIU”) within the SBSA 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 on April 4.

1.1 Process Description

Sanford Metal Processing is a metal finishing job-shop that provides aluminum anodizing and general plating of brass, copper, stainless steel. The aluminum anodizing line involves alkaline cleaning, nitric-acid desmut, alkaline caustic etch, sulfuric-acid Type II anodizing, sulfuric-acid Type III hard anodizing, dyeing, chromium conversion coating, and dichromate and nickel acetate sealing. The other steel/stainless/copper processing lines involve alkaline cleaning, hydrochloric-acid derust, cyanide-copper plating, cyanide-cadmium plating, electroless nickel plating, sulfamate-nickel strike, acid bright dipping, chromium conversion coating, zinc phosphating, nitric-acid passivation, nitric-acid cleaning, hydrochloric-acid activation, nickel strip, and cadmium strip. Other operations include sand blast abrasion, dry-booth painting, and parts drying. Sanford Metal Processing does not perform bright nickel or chromium electroplating.

Sanford Metal Processing does not own parts that undergo metal finishing on-site. No changes in configuration have been made to the metal finishing lines since start-up in 1979. However, according to Sandoval, the owner of Sanford Metal Processing, all of the metal finishing lines were removed in sections in 1994 in order to install secondary containment liners underneath the entire metal finishing area. Sanford Metal Processing discharges its non-domestic wastewaters to the Menlo Park domestic sewers through a single sewer connection designated in this report by permit number as IWD-050215. Domestic sewage discharges through separate connections downstream of the industrial wastewater connection.

1.2 Facility SIC Code

Sanford Metal Processing is assigned the SIC code for electroplating (SIC 3471).



1.3 Facility Wastewater Sources

The metal finishing lines generate spents, rinses, and scrap plate-out. For the purposes of this report, the tank designations are essentially the same as published in the December 2004 Sanford Metal Processing permit application to SBSA. *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. According to Sandoval, Sanford Metal Processing hauls off-site for disposal just the deoxidation, alodine, and a few other chromium conversion coating spents. Sandoval asserts that all other solutions are regenerated strictly through additions and that no spents are discharged directly to the sewers. The list of spent solutions and the asserted disposal methods follows below.

| Hauled Off-site to Haz | Tanks Regenerated By Additions | |
|---|--|---|
| A4 – nitric-acid deox A6 - alodining A13 - nickel acetate seal D3 - acid derust P3 - acid activation N6 - electroless nickel ✓ | A1 - alkaline cleaning A3 - Alkaline etching A7 - Type II anodizing A9 - Type III anodizing A10 - black dye A15 - color dye A16 - color dye A17 - color dye A18 - color dye Z1 - chromium conversion Z2 - chromium conversion A12 - hot water seal A20 - dichromate seal | P1 - alkaline cleaning N4 - cyanide-copper plate N7 - cyanide activation P5 - cyanide-cadmium plate unk - cadmium strip B1 - zinc phosphate N1 - nitric-acid passivation N2 - nitric-acid descale N3 - acid activation N11 - nickel strip N13 - nickel strike N9 - nickel acetate seal B7 - dichromate seal |
| ✓ w/ in-tank plate-out | | |
| Hauled Off-site | Additions Only - No Discharge | |

Rinses – Sanford Metal Processing generally employs first-stage on-demand low-overflows on timers and drag-out static rinses either returned to the solution tanks as make-up or hauled off-site as hazardous. There is very little use of first- and second-stage rinsing. The list of rinses follows below.

| On-demand | Drag-Out Rinses | |
|--|--|---|
| A2 - alk clean/etch 1°ovrflw A5 - acid/alodine 1°ovrflow A8 - anodize 1°overflow A11 - dye/seal 1°overflow D2 - alk clean 1°overflow P2 - acid/activate 1°ovrflow S4 - acid/passivate 1°ovrflw - electroless-Ni 2°ovrflw Z6 - Cr-conversion 2°static | Z1 - Cr-conversion 1°static Z2 - Cr-conversion 1°static A20 - dichrome seal 1°static N9 - Ni acetate seal 1°static B7 - dichrome seal 1°static Z8 - Cr-conversion 1°static unk - Zn-phosphate 1°static unk - electroless-Ni 1°static N6.5 - nickel strike 1°static | C1 - CN-cadmium 1°static C2 - CN-cadmium 1°static C3 - CN-cadmium 1°static C5 - Cr-conversion 1°static |
| Discharged to IWD-050215 | Additions Only | Spents Hauled Off-site |



Residuals – Sanford Metal Processing does not employ any methods to extend the useful life of the metal finishing solutions beyond the use of three activation steps (one cyanide and two acidic) that neutralize the surface chemistry of the previous steps. Sanford Metal Processing does plate-out electroless nickel spents through steel wool cementation prior to off-site hauling. Otherwise, Sanford Metal Processing generates no residuals because it provides no treatment or preconditioning of any spent solutions, spent static rinses, or overflow rinses.

1.4 Facility Process Wastewater Composition

The process wastewaters listed in section 1.3 above would be expected to contain cadmium, copper, chromium, lead, nickel, silver, zinc, amenable 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

Untreated process wastewaters discharge to the sewers through a single connection designated in this report after the SBSA permit number as IWD-050215. The 2004-2005 sampling data indicates that discharge averages ~1,500 gallons per day (“gpd”). *See* Appendix 1.

Delivery – Overflow rinses discharge by hard-pipeline from the secondary containment areas to a final sewer discharge sump into the sewers. There is one portable sump pump on-site with ~30 feet of hosing presumably used to transfer spent solutions and spent static rinses to barrels for off-site hauling or to return drag-out static rinses to their solutions as make-up.

Treatment – Treatment consists solely of uncontrolled final pH adjustment the small final sewer discharge sump. Caustic is bled into the sump without mixing or pH metered control. There is no other treatment in use although an unused flow-through metals precipitation and settling treatment unit that was decommissioned in 1990 is still on-site.



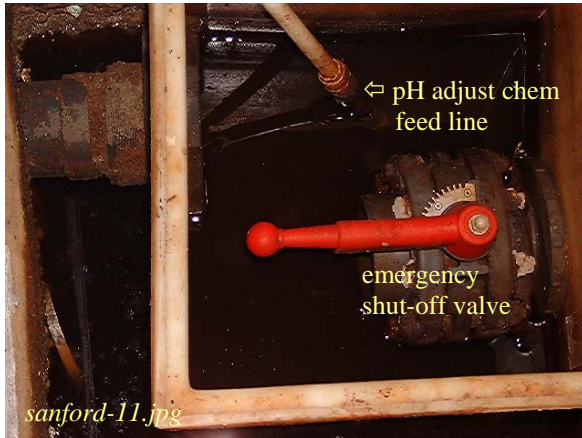
Photo: Shop Floor Showing 2° Containment
Taken By: Greg V. Arthur
Date: 04/04/06



Photo: Decommissioned Treatment Unit
Taken By: Greg V. Arthur
Date: 04/04/06



Sewer Discharge – The final sewer discharge sump drains to the sewers through a non-domestic in-plant sewer line connection and the permitted compliance sampling point, which is designated in this report after the SBSA permit number as IWD-050215. Sanford Metal Processing has the capability of shutting off discharge in an emergency.



*Photo: Final Sump Discharge
Taken By: Greg V. Arthur
Date: 04/04/06*

1.6 POTW Legal Authorities

South Bayside System Authority – SBSA is a Joint Powers Authority comprised of the Cities of San Carlos, Belmont, Redwood City, and the West Bay Sanitary District, as member agencies. SBSA operates an EPA-approved pretreatment program as required by the State of California in the San Francisco RWQCB's Waste Discharge Requirements, No. R2-2001-012, reissued to SBSA in 2001 and serving as NPDES Permit No. CA0038369. As part of this, SBSA and the member agencies have established sewer use ordinances that applies to all industrial users in its sewer system. Under this authority, SBSA issued an industrial user permit to Sanford Metal Finishing, No. 05-0215 covering the sewer discharge from IWD-050215.

1.7 Photo Documentation

Arthur took 10 digital photos during this inspection, recorded as the jpeg files named *sanford-1.jpg* through *sanford-11.jpg*. Those not published in this report are duplicates or depicted the wastewater delivery through hard-piping installed in floor trenches.

1.8 Sampling Record

All compliance samples are collected by SBSA from a monitoring box located in front of 990 O'Brien Drive, just outside of the front door, and designated in this report after the permit number as IWD-050215. *See* Appendix 3 for a summary of the 2004-2006 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 categorical pretreatment standards for new source metal finishing in 40 CFR 433 apply to the process wastewater discharges from Sanford Metal Processing through IWD-050215. The SBSA permit applied the local limits and misapplied the Federal standards for existing source job-shop metal finishers in 40 CFR 413. As a result, the SBSA permit does not accurately state the discharge requirements for Sanford Metal Processing. The application of Federal categorical standards, national prohibitions, and local limits was determined through visual inspection. See Appendices 2, 3, and 4 for the sewer discharge standards and limits.

Requirements

- The Federal standards for new source metal finishing must be applied to the discharges through IWD-050215.
- The permit must prohibit dilution as a substitute for any treatment necessary to comply with Federal standards and prohibit the bypassing of any treatment necessary to comply with either Federal standards or local limits.

Recommendations

- None.

2.1 Classification by Federal Point Source Category

Sanford Metal Processing qualifies as a job-shop metal finisher subject to the Federal metal finishing standards for new sources in 40 CFR 433. SBSA misclassified Sanford Metal Processing as subject to the job-shop electroplating standards for existing sources discharging less than 10,000 gallons per day. 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 waste-waters to be dilution waters.

New or Existing Sources – Sanford Metal Processing no longer is subject to the Federal standards for existing sources but rather is now required to comply with Federal new source standards. 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*).

Sanford Metal Processing removed and rebuilt all metal finishing lines in order to install secondary containment in 1994. This qualifies as major construction that provided the opportunity to install the best and most efficient production process and wastewater treatment technologies.

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 SBSA local limits apply to non-domestic discharges in the Menlo Park service area.

Numerical Limits - The SBSA local limits for a number of toxic pollutants are annual mass averages to be compared to the average of the calculated daily-mass loadings for the previous 12 months. The SBSA permit for Sanford Metal Processing advances annual mass average limits for arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, zinc, phenols, total cyanide, amenable cyanide, and total toxic organics. The SBSA permit also advances numerical concentration limits for petroleum oil & grease, and numerical measurement limits for pH, and temperature.

2.3 Federal Categorical Pretreatment Standards New Source Metal Finishing - 40 CFR 433.17

| 40 CFR 433.17 | Cd | Cr | Cu | Pb | Ni | Ag | Zn | CNt | CNa | TTO |
|----------------------|------|------|------|------|------|------|------|------|------|------|
| daily-maximum (mg/l) | 0.11 | 2.77 | 3.38 | 0.69 | 3.98 | 0.43 | 2.61 | 1.20 | 0.86 | 2.13 |
| month-average (mg/l) | 0.07 | 1.71 | 2.07 | 0.43 | 2.38 | 0.24 | 1.48 | 0.65 | 0.32 | - |

Applicability - Under 40 CFR 433.10(a), the metal finishing standards apply to the process wastewaters from the new source metal finishing lines because the facility’s operations involve electroplating, electroless plating, anodizing, chemical coating, and etching. The metal finishing standards “... apply to plants that perform ...” the core operations of electro-



plating, electroless plating, etching, anodizing, chemical coating, or printed circuit board manufacturing and they extend to other on-site operations, such as cleaning, associated with metal finishing and specifically listed in 40 CFR 433.10(a). If any of the core operations are performed, the new source metal finishing standards apply to discharges from any of the new source core or associated operations. As a result, the metal finishing standards apply to the process wastewater discharges through IWD-050215.

Basis of the Standards - The new source metal finishing standards were based on a model pretreatment unit that comprises metals precipitation, settling, sludge removal, source control of toxic organics, no discharge of cadmium-bearing wastewaters, and if necessary, cyanide destruction and chromium reduction. The best-available-technology standards were set where 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 – Under 40 CFR 433.12(c), the cyanide standards as applied to metal finishing wastewater discharges must be adjusted to account for dilution from non-cyanide bearing waste streams (Federally-regulated and unregulated). At Sanford Metal Processing, cyanide-bearing wastewaters are generated by cyanide-copper plating, cyanide-cadmium plating, cyanide stripping and activation, and chromium conversion coating. As a result, the cyanide standards as applied to the discharges through IWD-050215 first must be adjusted proportionally downward to account for dilution from the non-cyanide bearing new source waste streams. EPA estimates the dilution at IWD-050215 to be ~2½:1 simply based on the number of tanks with cyanide-bearing wastewaters. As a result, the metal finishing standards for total and amenable cyanide adjust downward to 0.33 and 0.24 mg/l daily-maximum and 0.18 and 0.09 mg/l monthly-average, respectively. A more sophisticated analysis might yield different lower results in all likelihood.

Under 40 CFR 403.6(d) and (e), the Federal standards do not need to be adjusted to account for the application of multiple Federal categories or for dilution from non-contact wastewaters such as cooling tower blowdown, water preconditioning brines, or domestic sewage.

Compliance Deadline - New sources were required to comply on the first day of discharge.

2.4 Federal Prohibitions

The Federal standards in 40 CFR 403.6(d) and 403.17(d) prohibit dilution as a substitute for treatment, and the bypassing of any on-site treatment necessary to comply with standards, respectively. The SBSA permit advances a provision prohibiting dilution as a substitute for treatment. The permit does not include a provision against the bypassing treatment necessary to comply.



2.5 Point(s) of Compliance

The permit designates the SBSA monitoring box outside of the facility, downstream from the final sampling sump, and upstream of the facility domestic contributions, as the compliance point (designated in this report as IWD-050215).

Local Limits - Local limits and the national prohibitions apply end-of-pipe to all non-domestic flows from Sanford Metal Processing. The sample point designated in this report as IWD-050215 is a suitable end-of-pipe sample point representative of the day-to-day non-domestic wastewater discharges.

Federal Standards - Federal categorical pretreatment standards apply end-of-process-after-treatment to all Federally-regulated discharges to the sewers. The sample point IWD-050215 is also a suitable end-of-process-after-treatment sample point representative of the day-to-day discharge of Federally-regulated wastewaters.

2.6 Compliance Sampling

The national prohibitions are instantaneous-maximums and are comparable to samples of any length including single grab samples. However, the local limits are mass loadings comparable to average loadings calculated from a year's worth of representative sampling of any length. 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

Sanford Metal Processing does not provide any treatment for metals removal or cyanide destruction. As a result, without treatment equivalent to the models used in originally setting the Federal standards, Sanford Metal Processing does not consistently comply with the new source metal finishing standards, in particular for cadmium and amenable cyanide. Both of these pollutants reside in a limited number of solution tanks and rinses. New installation of treatment equivalent to the models used in setting the standards could successfully be limited to just the cadmium-bearing wastewaters. There is no evidence of dilution as a substitute for treatment even though there is no treatment in-place. Instead Sanford Metal Processing employs only good on-demand rinsing methods, specifically either low-overflow on timers or static drag-outs. As a result, all sampling results are useable for determining compliance. A potential shortcoming of note is the use of a portable pump and long hose for the delivery of spent solutions. This would provide the opportunity to bypass future treatment once installed. *See* Appendix 3.

Requirements

- All cadmium-bearing and amenable cyanide-bearing wastewaters that discharge to the sewer must be identified, and then either treated or captured for off-site disposal.

Recommendations

- BAT treatment for the cadmium- and amenable cyanide-bearing wastewaters would improve with batch treatment and reaction end-point monitoring for pH and ORP.
- A hard plumbed delivery system for spents should be installed to link stand-pipe inlets in the shop to a designated barrel filling area in order to eliminate the use of long hoses.

3.1 Sampling Results

The 2004-2006 sample records for Sanford Metal Processing collected by SBSA from the monitoring box outside of the facility consist of quarterly sampling, with four samples for metals collected in two of the quarters. All metals samples were 24-hour composites. All



cyanide samples were grabs. All sample results are usable for determining compliance with the Federal standards because they account for all rinses and spents discharged. Sanford Metal Processing is exempted from total toxic organics sampling because it operates under an approved toxic organics management plan, as set forth in 40 CFR 433. *See* item 5.0 of this report.

3.2 Best-Available-Technology Treatment

All wastewater discharges to the sewer are untreated for metals removal or cyanide destruction. Sanford Metal Processing is expected to continue to violate Federal standards until treatment is installed or the sources of cadmium and cyanide no longer contribute to the discharge. As a result, the 2004-2006 samples exceeded the Federal cadmium standards in nearly every instance, with average and calculated 99th% peak concentrations of 0.35 and 1.39 mg/l cadmium. The samples also intermittently exceed the adjusted Federal cyanide standards, with average and calculated 99th% peak concentrations of 0.03 and 0.22 mg/l amenable cyanide. The samples easily met the other Federal standards, with average and calculated 99th% peak concentrations of 0.42 and 1.06 mg/l chromium, 0.24 and 0.51 mg/l copper, 0.03 and 0.08 mg/l lead, 0.30 and 0.82 mg/l nickel, <0.03 mg/l silver, and 0.24 and 0.54 mg/l zinc.

In the past, Sanford Metal Processing complied with the Federal standards primarily because the permit inappropriately applied job-shop electroplating standards in 40 CFR 413 for small existing sources. These Federal standards were meant to apply to small and old job-shops operating unchanged since the 1970's and as such they advanced less stringent standards. The key differences between the job-shop electroplating standards and the new source metal finishing standards derive from the model treatment technologies used in originally setting the standards. In particular, the new source metal finishing standards were based on the best-available-technology (BAT) treatment of wastewaters from which cadmium-bearing flows are first eliminated, and the cyanide treatment is specifically applied just to the cyanide-bearing flows. As a result, the Federal standards for cadmium and cyanide (amenable to alkaline chlorination) are significantly lower and more stringently applied to new source metal finishers, who by definition had the opportunity after 1983 to apply targeted treatment for cadmium and cyanide upon the installation (or re-installation) of the metal finishing lines.

At Sanford Metal Processing, it is likely that the BAT treatment involving alkaline chlorination, metals precipitation, and chemical-aided settling of just the cadmium- and cyanide-bearing waste streams would result in compliance with the entire range of Federal standards. The overall discharge does not appear to need BAT treatment since the past sample results show consistent compliance with all other Federal-regulated pollutants. Batch treatment for cadmium and cyanide would provide the best control over the variability inherent in the operation of metal finishing lines and in wastewater treatment. Reaction end-point metering for pH and ORP would further improve treatment performance. *See* Appendix 1.



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.

Sanford Metal Processing meets the first condition since all process-related wastewater discharges are untreated, but does not meet the second condition since all rinses are operated 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 a future possibility of bypassing any treatment installed at Sanford Metal Processing. Spents are delivered from the tanks to barrels by portable pump and a long extension hose. The hose outlet can be directed to any location on-site including disposal points that bypass treatment. It would be better to have hard-plumbed lines to a barrel filling area, with stand-pipe inlets in the metal finishing area. This would not preclude the use of portable pumps to deliver the spents but it would eliminate the need for long hose lengths. Maintaining only short hose lengths prevents the delivery of spent solution to improper disposal points bypassing the treatment necessary to comply.



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

Sanford Metal Processing does not have the treatment capacity and capability to consistently comply with the local limits, especially for cadmium. Nevertheless, a string of local limits violations are unlikely because the limits can incrementally increase based on the historic peak month concentrations and historical annual average flow rate. Any corrective actions to consistently comply with the Federal standards would further lessen the chance of a local limit violation. *See* Appendix 3. Also *see* Sections 3.0 and 5.0 of this report.

Requirements

- None.

Recommendations

- The SBSA permit should apply the local limits for oil and grease and surfactants.
- Sanford Metal Processing should install continuous final pH metering.

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 SBSA wastewater treatment plant through consistent compliance with their sludge and discharge limits.



4.2 Local Limits for Oxygen Demanding Pollutants and The National Prohibition Against Interference

The process-related wastewaters discharged to the sewers are not expected to be high enough in organics strength to pose a risk of interference, with wastewater strengths significantly less than domestic sewage.

4.3 Local Limits for Toxic Metals, Cyanide, and Other Pollutants and The National Prohibition Against Pass-Through

Metals and Cyanide – There were possible violations of the site-specific mass loading local limits for cadmium but not for any other locally-limited pollutants. Whether the cadmium annual rolling averages would remain violations is questionable since the SBSA local limits can increase based on the historic peak month concentrations and historical annual average flow rate. Installation of treatment or the elimination of cadmium-bearing waste streams should further ensure compliance with the local limits. See section 3.2 of this report.

Organics – There were no sample results for surfactants, methylene chloride, chloroform, perchloroethylene, benzene, carbon tetrachloride, carbon disulfide, toxic organics, or petroleum oil and grease because the SBSA permit did not apply site-specific or unadjusted local limits for these pollutants to the discharge from Sanford Metal Processing. Concentrations much over the detection limits of the toxic organics would not be expected to be generated by Sanford Metal Processing. These locally-regulated pollutants are effectively addressed through the continued certification authorized in 40 CFR 433 of a toxic organics management plan in lieu of the required self-monitoring for toxic organics. Sanford Metal Processing can generate surfactants and oil and grease.

4.4 Flammability

Flammability would not be expected because the discharges to the sewer are expected to entrain only negligible amounts of volatile organics.

4.5 Local Limits for pH and Sulfides, and The National Prohibitions Against Safety Hazards and Corrosive Structural Damage

Sewer collection system interferences related to the formation of hydrogen sulfide and the resulting acidic disintegration of the sewers are not expected because the wastewaters discharged to the sewers are not high-strength in biodegradable organics, and adjusted through the treatment to not be acidic in nature. However, continuous final pH metering should be installed because the neutralized discharges are initially composed of treated acidic and alkaline process wastewaters and the pH adjustment is uncontrolled by metering.



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 Sanford Metal Processing does not involve self-monitoring but rather consists of only monitoring conducted by SBSA. All of the SBSA monitoring is representative of the overall discharge of treated wastewater from Sanford Metal Processing over the sampling day as well as over the six-month reporting period.

Requirements

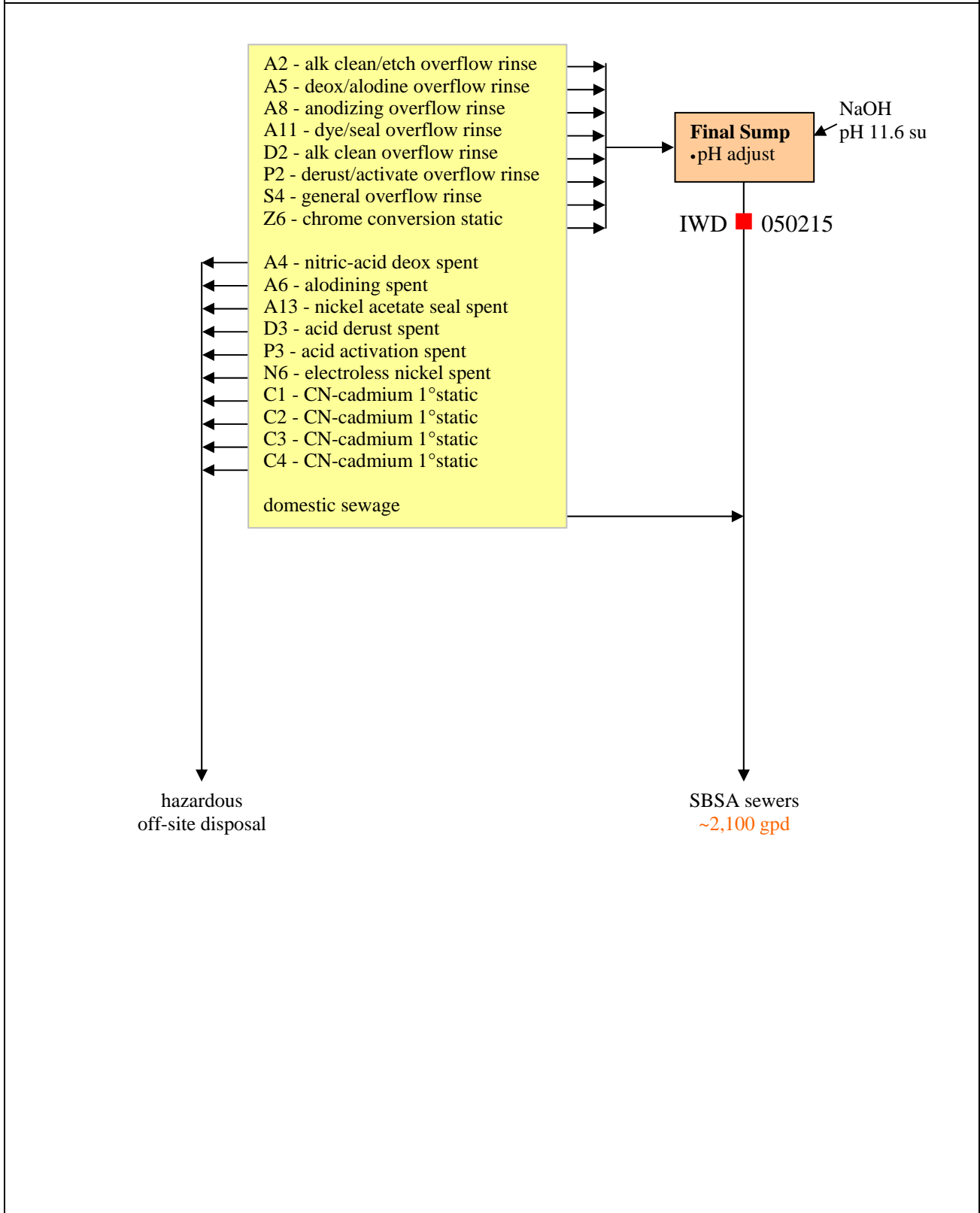
- None.

Recommendations

- None.



Appendix 1
Sanford Metal Processing
Schematic of the Wastewater Collection and Treatment





| Appendix 2 Sewer Discharge Standards and Limits Sanford Metal Processing @ IWD-050215 | | | | | | |
|--|---------------------------|----------|-----------------------------------|-----------------------------|-----------|---------------------------------|
| pollutants of concern (mg/l) | Fed categorical standards | | local limits / nat'l prohibitions | | | monitoring frequency IWD-050215 |
| | (d-max) | (4d-avg) | ⑤concentration-mg/l (instant) | ⑥load-lbs/d (site-specific) | (12mo-av) | |
| arsenic | - | - | 0.1 | - | 0.0029 | ③ |
| cadmium | 0.11 | 0.07 | 0.04 | - | 0.0210 | quarterly |
| chromium | 2.77 | 1.71 | 0.2 | - | 0.0850 | quarterly |
| copper | 3.38 | 2.07 | 0.2 | - | 0.0180 | quarterly |
| lead | 0.69 | 0.43 | 0.2 | - | 0.0120 | quarterly |
| mercury | - | - | 0.002 | - | 0.000059 | ③ |
| nickel | 3.98 | 2.38 | 0.06 | - | 0.0430 | quarterly |
| silver | 0.43 | 0.24 | 0.1 | - | 0.0029 | quarterly |
| zinc | 2.61 | 1.48 | 1.0 | - | 0.2600 | quarterly |
| phenolics | - | - | 2.3 | - | 0.0970 | ③ |
| amenable cyanide | 0.24 | 0.09 | 0.06 | - | 0.0240 | quarterly |
| PAHs surfactants | - | - | 0.2 | - | 0.0059 | ③ |
| methylene chloride | - | - | 0.07 | - | 0.0021 | ④ |
| chloroform | - | - | 0.03 | - | 0.00088 | ④ |
| perchloroethylene | - | - | 0.03 | - | 0.00088 | ④ |
| benzene | - | - | 0.002 | - | 0.000059 | ④ |
| carbon tetrachloride | - | - | 0.001 | - | 0.000029 | ④ |
| carbon disulfide | - | - | 0.008 | - | 0.00023 | ④ |
| toxic organics | 2.13 | - | - | - | - | ④ |
| oil and grease – petro | - | - | 100 | - | - | ③ |
| flow (gpd) | - | - | - | - | - | quarterly |
| pH (s.u.) | - | - | 6.0-9.5 ① | - | - | quarterly |
| explosivity | - | - | ① ② | - | - | ③ |
| temperature (°F) | - | - | 150°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 Twice per year solvent management plan self-certifications in lieu of self-monitoring
 ⑤ Site-specific concentration limits based on historical peak month concentrations
 ⑥ Loading limits based on historical average flow rates and highest local limit concentration



Appendix 3

Sanford Metal Processing @ IWD-050215

January 2004 – January 2006

| pollutants ② (µg/l) | effluent sampling results | | | violation rate ① | | | sample count | loading (lbs/yr) |
|------------------------|---------------------------|-------|--------------------|------------------|--------|--------|-----------------|---------------------|
| | mean | 99th% | max | sample | mo-av③ | 12-mo④ | | |
| cadmium | 347 | 1392 | 1800 | 10/15 | 10/11 | 2/2 | 15 | 1.080 |
| chromium | 422 | 1061 | 990 | 0/15 | 0/11 | 0/2 | 15 | 1.313 |
| copper | 241 | 512 | 500 | 0/15 | 0/11 | 0/2 | 15 | 0.750 |
| lead | 32 | 82 | 86 | 0/15 | 0/11 | 0/2 | 15 | 0.100 |
| nickel | 302 | 816 | 830 | 0/15 | 0/11 | 0/2 | 15 | 0.940 |
| silver | <32 | <32 | 5 | 0/15 | 0/11 | 0/2 | 15 | 0.013 |
| zinc | 241 | 544 | 478 | 0/15 | 0/11 | 0/2 | 15 | 0.750 |
| amenable cyanide | 34 | 220 | 245 | 1/9 | 0/9 | 0/2 | 9 | 0.106 |
| flow (gpd) | 1495 | 3244 | 2930 | 0/15 | - | - | 15 | - |
| pH (s.u.) | 10.1 ⑤ | - | 7.0 min 10.7max | 0/15 | - | | 15 | - |

① There were no violations during this period identified against the current SBSA permit

② No sample results for the following pollutants of concern:

arsenic, mercury, phenolics, surfactants, TTOs, oil & grease, explosivity, temperature

③ Monthly-averages calculated by calendar month

④ Twelve-month average calculated by the rolling average of all samples from previous 12 months

⑤ pH median