



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

November 25, 2011

In Reply Refer To: WTR-7

Kevin Kuhn, President
Sunbank Co., LLC
1740 Commerce Way
Paso Robles, California 93446

Re: August 10, 2011 Clean Water Act Inspection

Dear Mr. Kuhn:

Enclosed is the November 25th report for our August 10, 2011 inspection of Sunbank. Please submit a short response to the findings in Sections 2 through 5, to EPA, the City of Paso Robles, and the California Regional Water Quality Control Board, by **January 30, 2012**. The main findings are summarized below:

- 1** Sunbank qualifies as a new and existing source metal finisher under 40 CFR 433 with one main non-domestic sewer discharge. The Paso Robles permit is largely correct.
- 2** The control methods for the collection, delivery, treatment and disposal of industrial wastewaters are well-designed and well-run, equivalent to the models used in setting the Federal standards, sufficient in capacity, and enhanced by precise control of reaction end points and by the excellent segregation by strength and treatability. The sample record verifies consistent compliance with all limits except ammonia and salinity, both of which are to be addressed city-wide by Paso Robles. Along with installing RO, a few upgrades could further decrease salinity, reduce hazardous wastes, and reduce self-monitoring.
- 3** The self-monitoring required by the Paso Robles permit is representative of the discharge. Some pollutants present at low levels could be self-monitored less frequently.

I appreciate your helpfulness extended to me during this inspection. I remain available to the City of Paso Robles, 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
CWA Compliance Office

Enclosure

cc: Patti Gwathmey, Industrial Waste Manager, City of Paso Robles
Sorrel Marks, Central Coast RWQCB



U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User: Sunbank Company, LLC
1740 Commerce Way, Paso Robles, California 93446
Existing Source Metal Finishing (40 CFR 433)

Treatment Works: City of Paso Robles Wastewater Treatment Plant
NPDES Permit No. CA0047953

Pretreatment Program: City of Paso Robles

Date of Inspection: August 10, 2011

Inspection Participants:

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

Central Coast RWQCB: None.

City of Paso Robles: Patti Gwathmey, Industrial Waste Manager, (805) 227-1654

Sunbank: Patricia Harris, Envr Health and Safety Manager, (805) 238-2840
Daniel Luzi, Director of Operations, (805) 226-3564
Bob Galt, Plating Shop Supervisor, (805) 238-2840 ex 2195

Report Prepared By: Greg V. Arthur, Environmental Engineer
November 25, 2011



1.0 Scope and Purpose

On August 10, 2011, EPA and the City of Paso Robles conducted a compliance evaluation inspection of Sunbank Company, LLC., in Paso Robles, 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.

Sunbank is a significant industrial user ("SIU") within sewer service areas administered by the City of Paso Robles whose compliance was assessed as part of the 2011 EPA audit of the Paso Robles pretreatment program. The inspection participants are listed on the title page. Arthur conducted the inspection.

See Appendix 1(a) on page 19 for a schematic of the layout and configuration of wastewater handling. Also see Appendix 2 on page 21 for a process inventory. Photo documentation of this inspection follows in Section 1.7 on pages 5 and 6.

1.1 Process Description

Sunbank manufactures electrical cable accessories, connectors, flexible unwired conduit, and wiring, primarily for military and aerospace applications. Sunbank also rebuilds submarine air drying units. Operations are in the following three buildings.

- Bldg 1730 – plating shop
- Bldg 1740 – machine shop, vibratory deburring.
- Bldg 1750 – cable manufacturing shop

Sunbank fabricates parts and products from stainless steel, aluminum, and a small amount of brass. The metal finishing operations involve the surface finishing of aluminum through alkaline soap cleaning, caustic etch, nitric-acid desmut, zincate coating, electroless nickel plating, acid-nickel strike, cyanide-cadmium plating, iridite chromium conversion coating, alodine clear and gold chromium conversion coating, black dye, nitric-acid stripping, and nickel acetate dichromate sealer. The metal finishing operations also involve the passivation of stainless steel through nitric-acid passivation and hydrochloric-acid activation, and the vibratory deburring of machined parts.

Sunbank manufactures to customer specification but owns the parts manufactured on-site. Sunbank moved its operations from Burbank to the Paso Robles site in 1981-1982. Sunbank was purchased by Joslyn Corporation in 1988 and then by Danaher Corporation in 1995. Since April 2011, Sunbank is now a subsidiary of Meggitt LLC.



Sunbank discharges non-domestic wastewaters to the Paso Robles domestic sewers primarily through a single permitted sewer connection. Domestic sewage discharges through separate connections downstream of the industrial wastewater connection.

1.2 Facility SIC Code

Sunbank is assigned the SIC codes for connectors and terminals for electrical devices and solderless connectors (SIC 3643), woven wire products (SIC 3496), and metals coating (SIC 3479).

1.3 Facility Wastewater Sources

The Bldg 1730 plating shop generates most of the wastewaters discharged by Sunbank to the Paso Robles sewers. The Bldg 1740 machine shop and the Bldg 1750 cable manufacturing shop have no floor drains. There are two non-domestic connections into the sewers. The main connection receives ~6,000 gallons per day from the industrial wastewater treatment plant ("IWTP") in Bldg 1730 as its only source. A secondary connection in Bldg 1740 receives vibratory deburring tail water. The October 25, 2010 Paso Robles permit identifies both sewer connections. These compliance sampling points are designated in this report after the permit number as IWD-457.01 and IWD-457-02.

Bldg 1730 Plating Shop - The metal finishing lines involves alkaline cleaning, caustic etch, nitric-acid deoxidation, zincate coating, electroless nickel plating, acid-nickel strike, cyanide-cadmium plating, chromium conversion coating, nitric-acid passivation, acid activation, black dye, and nickel dichromate sealing.

- Spents - The imparted contamination from the processing of parts and the progressive drop in solution strength results in the generation of spents. Spent generation rates depend on bath usage, effectiveness of bath contamination control, and the amount of drag-out lost into the rinses or onto the floor. All except two steps generate spents, which are handled through delivery to on-site holding tanks and totes for off-site disposal. The cadmium plating baths and an iridite chromium conversion bath do not generate spents but rather are regenerated strictly through solution additions. Losses from the "adds-only" steps therefore must be through drag-out since baths without outlets would foul through contamination or fail through use.
- Rinses - There are twelve countercurrent and two low-overflow rinse tanks. Most metal finishing steps each employ single first-stage countercurrent rinses or first-stage overflow rinses. The cadmium plating steps employ first-stage static rinses and second-stage countercurrent rinses. All rinses except the statics drain through dedicated in-plant sewer lines to the industrial wastewater treatment plant for discharge to the sewers.
- Fume Scrubber Blowdown - The plating shop fume hoods draw past a wet fume-scrubber that generates a blowdown.



Bldg 1740 Machine Shop - The machine shop involves standard machining steps and vibratory deburring. There are no floor drains in Bldg 1740. The machining generates spent oily coolants and oily drainage captured on floor drip pans. The oily coolants and drainages are collected for storage in oily water accumulation tanks for off-site disposal. The vibratory deburring step uses alkaline surfactants with the tail water drainage discharged to sewer. See Photos #1 and #2 in Section 1.7 of this report on page 5.

Bldg 1750 Cable Manufacturing Shop - There are no floor drains in Bldg 1750 and no identified generated wastewaters.

1.4 Facility Process Wastewater Handling

Delivery - The rinses and fume scrubber blowdown are delivered to the IWTP by dedicated in-plant sewer lines. Acidic and alkaline spents are delivered by portable pump through standpipes into separate dedicated lines that drain to an acid holding tank and an alkaline holding tank for off-site disposal. All other spents and tail waters are collected into totes for off-site disposal. Oily wastes are collected into totes for manual delivery to accumulation tanks for off-site disposal. Deburring tail waters discharge by pipe to the sewers. See Photos #3 and #4 in Section 1.7 of this report on page 6.

Composition - The process-related wastewaters discharged through IWD-457.01 would be expected to contain iron, aluminum, copper, chromium, nickel, zinc, cadmium, free cyanide and ferrocyanide, as well as acidity, salinity, phosphates, sulfates, nitrates, chlorides, surfactants, machining oils, pollutants cleaned off of parts, and the minerals entrained in the water supply. The vibratory deburring discharge through IWD-457.02 would be expected to contain suspended solids, iron, aluminum, zinc, copper, surfactants, and machining oils.

Treatment - Spent solutions are segregated by type for off-site disposal. Sunbank treats only rinses and fume scrubber blowdown through the IWTP for discharge to the sewers. The cyanide-bearing rinses and scrubber blowdown undergo two-stage cyanide destruction through alkaline chlorination. The pH/ORP reaction end points are set at 11.0 s.u. and 375 mV in the first stage, and 8.6 s.u. and 715 mV in the second stage. The other rinses all undergo chromium reduction with the pH/ORP reaction end points set at 2.0 s.u. and 257 mV. All flows then combine for metals removal through for two-stage metals hydroxide precipitation, Lamella clarification, sand filtration, and polishing through granulated activated carbon. The metals precipitation pH reaction end points are set at 8.8 s.u. The removed slurries pass through a filter press with the filtrate returned to the cyanide treatment train. The cyanide treatment train includes 2,000 gallons of holding capacity prior to the cyanide destruction steps. The general treatment train includes 3,000 gallons of holding prior to the chromium reduction step. The IWTP also employs 500 gallon surge tanks before the clarification and the sand filtration steps. The vibratory deburring tail waters discharge through a bucket decanter to capture some slurry solids. See Photos #5, #6, and #7 in Section 1.7 of this report on page 6.



Discharge – The process wastewaters from Sunbank drain through a single sewer connection into the Paso Robles domestic sewers. Discharge from the IWTP is identified in the Paso Robles permit as the final compliance sample point, designated in this report, after the permit number as IWD-457.01. The specific location of the compliance sampling point is a drain line from the granulated activated carbon filters to a sewer drain connection. The second discharge from the vibratory deburring unit to the sewers is identified by the permit and designated here in this report as IWD-457.02. There is no flow rate metering. See Photos #1 and #8 in Section 1.7 on pages 5 and 6.

Residuals - Sunbank has the IWTP filter press cake off-hauled for disposal by U.S. Filter as hazardous. The spent solutions and vibratory deburring tail waters are also hauled off-site for disposal.

1.5 Sampling Record

Sunbank self-monitors monthly as required by the City of Paso Robles October 25, 2010 permit. The self-monitoring results start in September 2010. The City of Paso Robles does not collect its own samples.

1.6 POTW Legal Authorities

The City of Paso Robles has enacted an ordinance to implement a pretreatment program in the areas serviced by the City's wastewater treatment plants. Under this authority, the City issued City permit No.457 authorizing discharge of non-domestic wastewater to the sewers.

1.7 Photo Documentation

Eight of the nine photographs taken during this inspection are depicted below and saved as *sunbank-01-081011.jpg through sunbank-09-081011.jpg*.

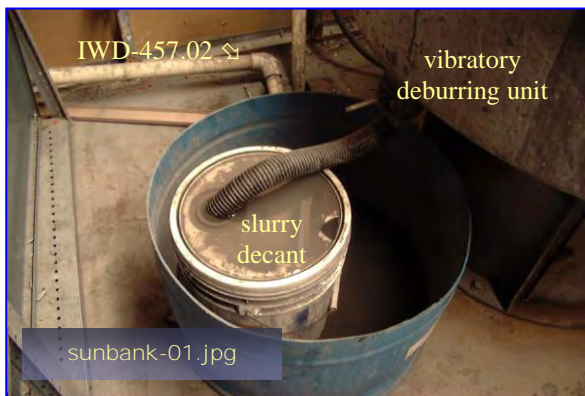


Photo #1: Bldg 1740 - Discharge (IWD-457.02)
Taken By: Greg V. Arthur
Date: 08/10/11



Photo #2: Bldg 1740 - Oily Accumulation Tanks
Taken By: Greg V. Arthur
Date: 08/10/11



Additional photographs taken during this inspection are depicted below.



Photo #3: Bldg 1730 – Plating Spents Standpipe
Taken By: Greg V. Arthur
Date: 08/10/11

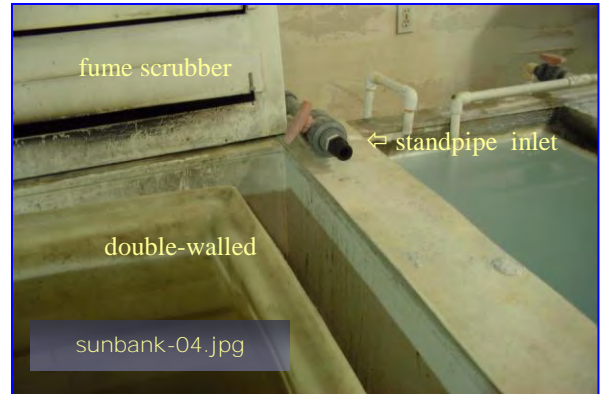


Photo #4: Bldg 1730 – Cadmium Plating Line
Taken By: Greg V. Arthur
Date: 08/10/11



Photo #5: Bldg. 1730 - IWTP Reaction End Points
Taken By: Greg V. Arthur
Date: 08/10/11

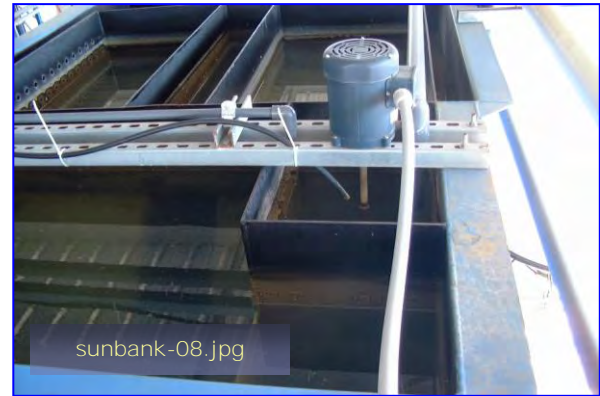


Photo #6: Bldg 1730 - IWTP Lamella Clarifier
Taken By: Greg V. Arthur
Date: 08/10/11



Photo #7: Bldg 1730 - IWTP Lamella clarifier
Taken By: Greg V. Arthur
Date: 08/10/11



Photo #8: Bldg 1730 - Discharge (IWD-457.01)
Taken By: Greg V. Arthur
Date: 08/10/11



2.0 Sewer Discharge Standards and Limits

Federal categorical pretreatment standards (where they exist), national prohibitions, State groundwater, 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 in 40 CFR 433 for both existing and new source metal finishing apply to the process wastewater discharges from Sunbank. The 2010 Paso Robles permit applied the local limits and the Federal standards for new but not existing sources. The permit also did not apply the Federal bypass provision against the bypassing treatment necessary to comply. The application of Federal categorical standards, national prohibitions, and local limits was determined through visual inspection. See Appendix 3 on page 22 of this report for the permit limits.

Requirements

- The Federal standards for IWD-457.01 must be adjusted to account for combined flows from existing and new sources using the combined wastestream formula.
- The Federal standards at IWD-457.01 for total or amenable cyanide must be adjusted to account for dilution from non-cyanide bearing wastestreams.
- The permit must apply the Federal bypass provision which prohibits the bypassing of any treatment necessary to comply with Federal standards and local limits.

Recommendations

- The permit should require self-monitoring for the discharge flow rates.
- The flow rate estimates for new versus existing sources and cyanide-bearing versus non-cyanide bearing wastestreams should be verified.
- The absence should be verified of the wastewaters defined as dilution (water preconditioning, cooling water, boiler blowdown, domestic sewage).

2.1 Classification by Federal Point Source Category

Sunbank qualifies as a metal finisher subject to the Federal standards for both new and existing sources in 40 CFR 433. The 2010 Paso Robles permit appropriately applied Federal standards for metal finishing but did not recognize that both the new source and existing source standards apply. Federal standards are self-implementing which means they apply to regulated wastestreams whether or not they are implemented in a local permit. The Federal rules in 40 CFR 403.6 define domestic sewage and non-contact waters as dilution waters.



New or Existing Sources – In 40 CFR 403.3(k), a metal finishing process constructed 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. The preamble to the 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*). So after the 1982 deadline, the new source standards apply to the new installation of metal finishing lines, rebuilt or moved lines, lines temporarily removed to install secondary containment, or existing lines converted to do new operations. New source standards generally do not apply to the piecemeal replacement of tanks for maintenance in otherwise intact metal finishing lines.

Sunbank does not entirely qualify as an existing or new source metal finisher. Sunbank moved operations to Paso Robles in 1981-1982. According to the electroplating shop manager, the metal finishing lines were installed in their current configuration over the existing secondary containment upon start-up. The shop manager also said a shop fire in 1983 resulted in the relocation of chromium-bearing tanks. A settlement in 2007 with the California Department of Toxic Substances resulted in the installation of additional rinses and upgraded secondary containment, but not the installation of new lines or the rebuilding or relocation of existing lines. As a result, the chromium conversion coating lines generate wastewaters regulated under the new source metal finishing standards, while the rest of the facility remains regulated under the existing source standards.

Job-Shop Electroplating – Sunbank does not qualify as an existing source job-shop metal finisher subject to the Federal job-shop electroplating standards in 40 CFR 413 since Sunbank owns all materials undergoing metal finishing on-site. The job-shop electroplating standards only apply to existing source job-shops with lines installed in 1982 or before, and who own less than 50% of the metal finished materials.

Dilution Waters – The Federal standards define domestic and certain non-domestic wastewaters as dilution waters under 40 CFR 403.6. These dilution waters are unregulated under all Federal categories but can be regulated by local limits. In addition to domestic sewage, the defined dilution waters include brines, blowdowns, and reject from water supply preconditioning units, cooling tower blowdown, single-pass cooling waters, boiler blowdown, pump seal waters, and condensate, storm water run-off and ground water from uncontaminated sources.

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 Paso Robles local limits apply to non-domestic discharges in the service areas of the City wastewater treatment plant.

**2.3 Federal Categorical Pretreatment Standards
New and Existing Source Metal Finishing - 40 CFR 433.17 and 433.15**

40 CFR 433.15/17	Cd _{PSNS}	Cd _{PSES}	Cr	Cu	Pb	Ni	Ag	Zn	CNt	CNa	TTO
daily-max (mg/l)	0.11	0.69	2.77	3.38	0.69	3.98	0.43	2.61	1.20	0.86	2.13
month-avg (mg/l)	0.07	0.26	1.71	2.07	0.43	2.38	0.24	1.48	0.65	0.32	-
Cd _{PSNS} – Cadmium new source standards			Cd _{PSES} – Cadmium existing source standards								

Applicability – Under 40 CFR 433.10(a), the metal finishing standards apply to all process wastewaters (including fume scrubber blowdown) from the metal finishing lines **because the facility’s operations involve** electroplating, chemical coating, and etching. The metal finishing standards "... apply to plants that perform ..." the core operations of electroplating, electroless plating, etching, anodizing, chemical coating (passivation, conversion coating), or printed circuit board manufacturing and they extend to other on-site operations, such as cleaning, machining, shearing, tumbling (vibratory deburring), and painting, associated with metal finishing and specifically listed in 40 CFR 433.10(a). If any of the core operations are performed, the metal finishing standards apply to discharges from any of the core or associated operations. As a result, the metal finishing standards apply to all discharges to IWD-457.01 and IWD-457.02.

Basis of the Standards – The existing source metal finishing 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. The new source metal finishing standards were based on the same model pretreatment unit, however with an added injunction against the discharge of cadmium-bearing wastewaters. As a result, the new source and existing source metal finishing standards differ only for cadmium with the remaining standards identical. The 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 – See Section 2.4 on below for the adjustments in the standards for multiple categories, dilution, cyanide, and toxic organics monitoring.

Compliance Deadline – New sources are required to comply on the first day of discharge. Existing source were required to comply by the July 15, 1986 deadline.

2.4 Combined Federal Standards and Adjustments

The Federal categorical pretreatment standards must be adjusted using the combined wastestream formula in 40 CFR 403.6, to account for dilution, if it exists, and for



multiple Federal categories, if more than one applies. See Appendix 3 on page 22 of this report for the permit limits.

$$C_{433total} = \frac{(C_{433PSES} Q_{433PSES}) + (C_{433PSNS} Q_{433PSNS})}{Q_{433PSES} + Q_{433PSNS}} \times \frac{(Q_{total} - Q_{dilution})}{Q_{total}}$$

$C_{433PSNS}$ = Fed new source stds
 $C_{433PSES}$ = Fed existing source stds
 Q_{total} = Total Flow
 $Q_{433PSNS}$ = New Source Flow
 $Q_{433PSES}$ = Existing source Flow
 $Q_{dilution}$ = Dilution Flow

40 CFR 403.6 - Combined Wastestream Formula at Sunbank

Multiple Categories – Two sets of standards, for new and existing sources, from one Federal category for metal finishing apply to the discharges from Sunbank. The two sets of standards differ only for cadmium. Therefore, the cadmium standards as they apply to a facility like Sunbank that qualifies as both an existing and new source depends on the amount of flow generated by the new and existing portions of the facility. As an estimate of the new/existing flow partition at Sunbank, EPA used the number of discharging rinses assigned to the new sources (4) and the existing sources (10) to determine the rough percentage of total flow between each. The resulting flow estimates are 30% new source and 70% existing. These estimates did not factor in the number of spents since Sunbank hauls nearly all spents for off-site disposal.

Dilution – Under 40 CFR 403.6(d)(e), Federal categorical pretreatment standards must be adjusted using the combined wastestream formula to account for any dilution from non-contact cooling waters, boiler blowdown, water preconditioning, and domestic sewage. None of these flows, which are specifically listed as dilution waters in 40 CFR 403.6(e), were identified in the permit, nor during this inspection. Therefore, the Federal standards do not need to be adjusted for dilution.

Total Cyanide Standards – Under 40 CFR 433.12(c), the total cyanide standards as applied to metal finishing wastewater discharges also must be adjusted to account for dilution from non-cyanide bearing waste streams. As an estimate of the cyanide/non-cyanide flow partition from Sunbank at IWD-457.01, EPA used the number of discharging rinses from cyanide-bearing steps (6) and from non-cyanide bearing steps (8) to determine the rough percentage of total flow between each. The resulting flow estimates for total cyanide at IWD-457.01 are 40% cyanide-bearing and 60% non-cyanide bearing. For IWD-457.02, since there are no cyanide-bearing sources, the cyanide standards apply by default without adjustment.

Amenable Cyanide Standards – Under 40 CFR 433.15(b) and 433.17(b), the amenable cyanide standards may replace total cyanide standards at facilities like Sunbank with cyanide wastewater treatment. This allows the release of inert and untreatable cyanides such as ferrocyanides from chromium conversion coating steps. The same estimates of 40% cyanide-bearing and 60% non-cyanide bearing would for amenable cyanide at IWD-457.01. For IWD-457.02, the cyanide standards apply by default without adjustment.



Toxic Organics Standards – The Federal standards in 40 CFR 433.12 allow facilities with an approved toxic organics management plan to certify instead of sample for toxic organics. Sunbank self-monitors for total toxic organics at IWD-457.01 and IWD-457.02 just once each.

2.5 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 2010 Paso Robles permit establishes the prohibition against the dilution as a substitute for treatment (Part II.7), but does not prohibit the bypassing of any treatment necessary to comply.

2.6 Compliance Sampling and Point(s) of Compliance

The permit identifies the IWTP discharge and the vibratory deburring inside the facility as the compliance sampling points, designated in this report as IWD-457.01 and IWD-457.02. The permit does not identify the specific locations of the compliance sampling points but an October 2010 Paso Robles administrative compliance order requires establishment of a sampling station before a December 16, 2011 compliance deadline.

Federal Standards - Federal categorical pretreatment standards apply end-of-process-after-treatment to all Federally-regulated discharges to the sewers. The sampling station to be established as IWD-457.01 and the vibratory deburring outlet as IWD-457.02 are suitable end-of-process-after-treatment sample point representative of the day-to-day discharge of Federally-regulated wastewaters from Sunbank. These compliance sampling points also are suitable end-of-process-after-treatment sample point for cyanide. See Section 5.0 on page 18 of this report for findings pertaining sampling.

Local Limits - Local limits and the national prohibitions apply end-of-pipe to non-domestic flows. The sampling station to be established as IWD-457.01 and the vibratory deburring outlet as IWD-457.02 are a suitable end-of-pipe sample points representative of the day-to-day non-domestic wastewater discharges from Sunbank.

Sampling Protocols – National prohibitions are instantaneous-maximums comparable to samples of any length. Federal categorical pretreatment standards are daily-maximums comparable to 24-hour composites. The 24-hour composites can be replaced with single grabs or manually **composited grabs representative of the sampling day's discharge**. The 2010 Paso Robles permit specifies these sampling protocols by parameter (page 2). See Section 5.0 on page 18 and Appendix 3 on page 22.



3.0 Compliance with Federal Categorical 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).

Sunbank employs industrial wastewater treatment equivalent to the models used in originally setting the Federal standards for almost all of its wastewater discharges to the sewers. Performance benefits from good segregation by strength and treatability, and from real-time reaction end point controls. The vibratory deburring tail waters are largely untreated but could be rerouted through treatment. Sampling results indicate that the IWTP discharge through IWD-457.01 has consistently complied with the Federal standards, but that the vibratory deburring tail water can exceed standards at times. See Appendices 1(a) and 1(b) on pages 18 and 19 of this report for schematics of the treatment in-place and the recommended upgrades. Also see Appendices 4(a) and 4(b) on pages 23-26 for a summary of the compliance sampling.

Requirements

- None.

Recommendations

- Vibratory deburring tail waters should be collected to tote and delivered for treatment into the IWTP filter press.

3.1 Sampling Results

The sample record consists of only self-monitoring results for IWD-457.01 and IWD-457.02. There are no samples collected by the City of Paso Robles from either point.

3.2 Best-Available-Technology Treatment for IWD-457.01

Nearly all process-related wastewaters generated by Sunbank discharge from the industrial wastewater treatment plant ("IWTP") at IWD-457.01 into a Bldg 1730 sewer connection. The treatment in-place is designed and operated to be equivalent to the best-available-technology ("BAT") model treatment for metal finishing. The sample record confirms equivalence in performance to the model best-available-technology



("BAT") treatment units used in originally setting the Federal standards for metal finishing. The nine composite samples for metals and eleven manually composited grab samples for cyanide all were at concentrations well below the Federal standards. The average and peak concentrations were 0.018 and 0.040 mg/l cadmium, 0.054 and 0.161 mg/l chromium, 0.004 and 0.011 mg/l copper, <0.010 mg/l lead, 0.045 and 0.169 mg/l nickel, <0.010 silver, 0.014 and 0.047 mg/l zinc, 0.021 and 0.106 mg/l cyanide, 0.109 total toxic organics.

As a result, consistent compliance with the Federal standards is expected, not only because the treatment in-place is equivalent in design to the model BAT treatment, but also because of excellent segregation, excellent source controls, and close attention to the reaction end points. No significant deficiencies in the design and operation were observed during this inspection. The numerous improvements to (+) and a single deficiency in (-) performance are listed below.

- + Segregated handling of high strength and oily wastewaters with plating shop spents and machine shop wastes diverted from treatment to off-site disposal.
- + Standpipe inlets and hard-piping for the pumped delivery of spents to holding tanks.
- + Segregated handling of amenable cyanide-bearing wastewaters through dedicated lines and into a dedicated cyanide treatment train.
- + Sand filter and granulated activated carbon polishing steps following BAT treatment.
- + Real-time SCADA monitoring and telemetry of all treatment reaction end points.
- + Excellent internal surge capacity prior to the chromium reduction, cyanide destruction, clarification, and sand filtration steps.
- + Excellent chemically-aided Lamella clarifier capacity.
- + Clarifier solids recycling loop that improves removals through solids contact.
- + Clear labeling of tankage and knowledge of wastewater generation and treatment.
- + Hard-piped delivery of all Bldg 1730 wastewaters to the IWTP inlet sumps.
- + Secondary containment around all treatment unit processes and holding tanks.
- + No built-in bypass lines.
- High alkaline non-chromium bearing flows are treated through the low pH chromium reduction step which thereby generates excess TDS.

3.3 Best-Available-Technology Treatment for IWD-457.02

The vibratory deburring tail water would not be expected to require model treatment to comply with Federal standards because the regulated pollutants are either not present (cyanide) or are not dissolved into solution but rather are present as abraded solid particles in suspension. Nevertheless, the jury-rigged bucket decanter for the deburring tail waters has not captured slurry solids efficiently enough to result in consistent compliance with the Federal standards. Two samples out of seven exceeded Federal standards for copper, lead, or zinc. The average and peak concentrations were 0.033 and 0.166 mg/l cadmium, 0.094 and 0.594 mg/l chromium, 0.093 and 5.54 mg/l copper, 1.3 mg/l lead, 0.168 and 0.552 mg/l nickel, 0.011 silver, 1.62 and 6.87 mg/l zinc, 0.039 and 0.276 mg/l cyanide, 0.008 total toxic organics.



The capture and delivery of deburring tail waters to the IWTP, preferably introduced into the filter press, would eliminate discharge and self-monitoring at IWD-457.02, thereby ensuring compliance. See Section 5.0 on page 16 for self-monitoring requirements.

3.4 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.

There is no evidence of "dilution as a substitute for treatment" since all Federally-regulated waters except the vibratory deburring tail waters discharge through BAT model treatment to the sewers at IWD-457.01.

3.5 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 are no built-in methods of bypassing at Sunbank.



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).

The sample record indicates that for IWD-457.01, Sunbank can comply with its local limits for metals, organics, pH, and usually for total cyanide, but not for salinity. Salinity issues in San Luis Obispo County stem from the widespread use of water softeners. As a result, Paso Robles and other communities in the county, under a RWQCB Time Schedule Order, are constructing a surface water treatment plant and delivery pipeline for low-hardness water from Lake Nacimiento. The new water supply, expected on-line in 2015, should result in relaxed local limits for salinity. In the meantime, a Paso Robles administrative compliance order as modified in July 2011 requires Sunbank to install a reverse osmosis unit. See Appendices 4(a) and 4(b) on pages 23-26 of this report.

Requirements

- None.

Recommendations

- Vibratory deburring tail waters should be collected to tote and delivered for treatment into the IWTP filter press.
- High alkaline non-chromium bearing flows should bypass the low pH chromium reduction step and enter into the first-stage of pH adjustment.
- With a final reverse osmosis step, most spents (non-cadmium/non-electroless nickel) could be batch treated and then metered into the IWTP filter press.
- Reverse osmosis permeate could be reused as a low-TDS, low-hardness source water for the metal finishing rinses.

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 Paso Robles 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

Metals and Cyanide – For the main discharge at IWD-457.01, there were no violations of the local limits for cadmium, chromium, copper, cobalt, lead, molybdenum, nickel, selenium, silver, and zinc, but there three violations for total cyanide in early 2011 that have since not been repeated. For the deburring discharge at IWD-457.02, two of the seven samples violated local limits for certain metals, total cyanide or pH. Nevertheless, given the small volume of these discharges, there is no evidence that they resulted in the operational interference of the Paso Robles collection systems and wastewater treatment plant.

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

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

Metals and Cyanide – For the main discharge at IWD-457.01, there were no violations of the local limits for cadmium, chromium, copper, cobalt, lead, molybdenum, nickel, selenium, silver, and zinc, but there were violations three violations for total cyanide in early 2011 that have since not been repeated. For the deburring discharge at IWD-457.02, two of the seven samples violated local limits for certain metals, total cyanide or pH. Nevertheless, given the small volume of these discharges, there is no evidence that they resulted in a pass-through of pollutants from the Paso Robles wastewater treatment plant to the receiving waters.

Nutrients – For the main discharge at IWD-457.01, the average concentration exceeds the local limit for ammonia with five of nine samples exceeding the local limit. For the deburring discharge at IWD-457.02, the average concentration is well under the local limit with one of seven samples exceeding the local limits. Nutrient loads through the sewers and sewage treatment into the receiving waters are a system-wide issue. As a result, in May 2011, the RWQCB issued a time schedule order for the construction of new treatment to control nutrients at the Paso Roble wastewater treatment plant in order to comply with the nutrient limits in the May 2011 RWQCB permit.

Toxic Organics and Oils – For the main discharges at IWD-457.01, there were no violations in just two samples of the local limits for toxic organics or oil and grease. For the deburring discharge, IWD-457.02, both samples entrained significant levels of oil and grease with one in violation. Nevertheless, given the small volume of these discharges,



there is no evidence that they resulted in a pass-through of oil and grease or toxic organics from the Paso Robles wastewater treatment plant to the receiving waters.

Salinity and Minerals – For the main discharges at IWD-457.01, all samples exceeded the local limits for total dissolved solids, sulfates, chlorides, and sodium. For the deburring discharge at IWD-457.02, three of seven samples exceeded these limits for salinity. There are two principal sources of salinity, water softener brines, and the IWTP neutralization of acids and alkalines. Low-TDS treatment usually involves either the off-hauling of high-TDS spent solutions or regeneration through physical processes, such as low-temperature caustic desaturation, acid ultrafiltration, or reverse osmosis polishing. Salinity from softeners should no longer be a water quality issue upon start-up of the low-hardness municipal water supply.

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

Corrosion - Sewer collection system interferences related to the formation of hydrogen sulfide and the resulting acidic disintegration of the sewers are not expected. The wastewaters discharged to the sewers are not high-strength in biodegradable organics. The main discharge through IWD-457.01 is not expected to exceed pH limits since it is composed of treated acidic and alkaline wastewaters. The second discharge through IWD-457.02 is insignificant in volume to affect the pH in the sewers.

Flammability - Flammability would not be expected because sampling shows that the discharges to the sewer entrain negligible amounts of volatile organics.



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).

Permit Requirements – Sunbank has successfully fulfilled the self-monitoring requirements set forth in the city permit. The sample records for the main discharge at IWD-457.01 and the deburring discharge at IWD-457.02, shows that Sunbank (1) submitted sample results for all permit-listed parameters at the frequencies set forth in the permit, (2) collected all samples from the designated compliance sampling points, and (3) correctly obtained 24-hour composites for metals, as well as grabs and manual composited grabs for the other pollutants. It was not determined in this inspection whether appropriate chain-of-custody procedures were followed. Some of the parameters for pollutants that are not generated could be self-monitored less frequently.

Representativeness – The sample record appears to be representative of the discharges to the sewers over both the sampling day and the six-month reporting period.

Requirements

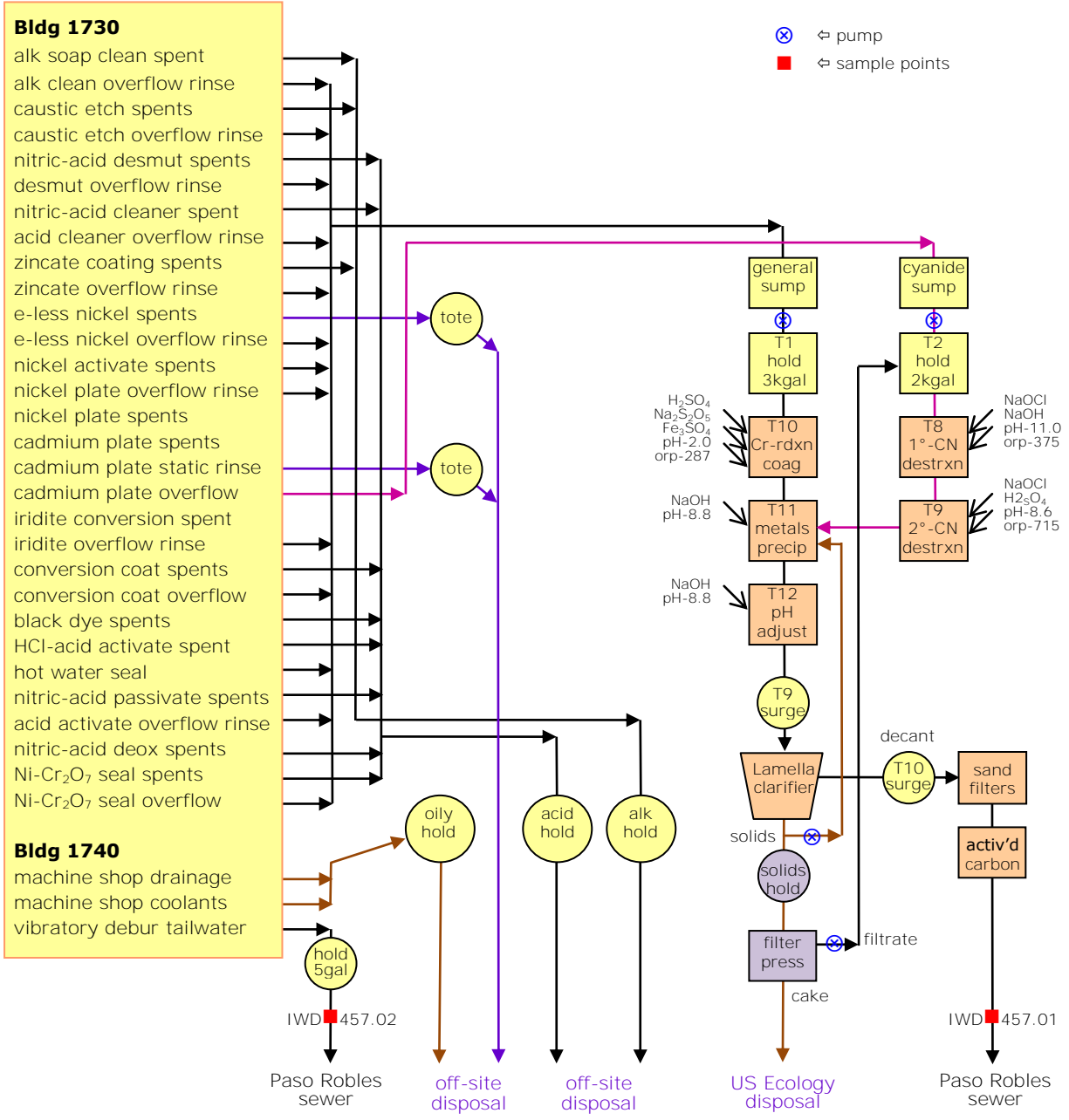
- See Appendix 3 on page 22 of this report for the self-monitoring and city monitoring requirements for that would be considered to be representative of the discharges.
- The permit must require sampling for all Federally-regulated pollutants including silver and lead.

Recommendations

- The deburring discharges should be captured and delivered by tote into the IWTP filter press inlet, thereby eliminating the required self-monitoring for IWD-457.02.
- Self-certification statements should include copies of the hazardous waste manifests documenting the off-hauling of spents, and residuals.
- See Section 3.0 and 3.5 on pages 12 and 14 of this report for findings regarding the prohibitions against bypassing treatment.



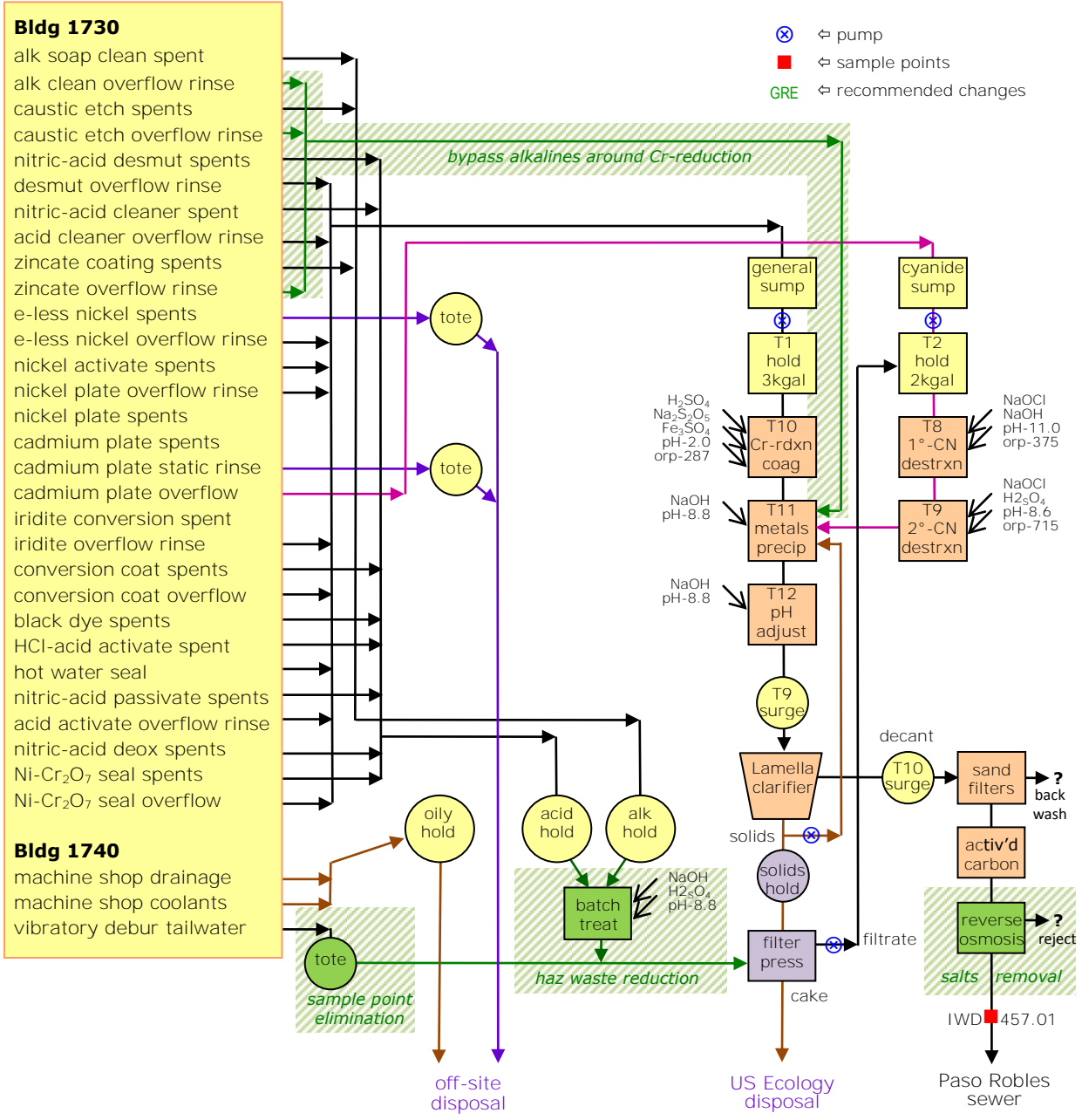
Appendix 1(a)
 Sunbank – Current Configuration and Layout





Appendix 1(b)

Sunbank - Recommended Configuration and Layout





Appendix 2
Sunbank - Tank Inventory, Tank Number, Volume, and Delivery Method

Delivery ✓	Tank Designations and Contents	Gals	Delivery ✓	Tank Designations and Contents	Gals
Bldg 1730 - Aluminum Preparation					
H-ALK	T1 alkaline soap cleaner	380	IWTP	T2 1° counterflow rinse for T1	220
H-ALK	T3 caustic etch	220	IWTP	T4 1° counterflow rinse for T3	220
H-ACID	T5 nitric-acid desmut	80	IWTP	T6 1° counterflow rinse for T5	220
H-ACID	T7 nitric-acid cleaner	80	IWTP	T8 1° counterflow rinse for T7	220
H-ALK	T9 zincate coating	380	IWTP	T10 1° counterflow rinse for T9	100
Bldg 1730 - Nickel/Cadmium Plating					
H-TOTE	T11 electroless nickel plating	220	IWTP-G	T12 1° counterflow rinse for T11/T13	220
H-TOTE	T13 electroless nickel plating	220			
IWTP-G	T14 nickel activation	100	IWTP-G	T15 1° overflow rinse for T14/T16	220
ADDS	T16 Woods nickel strike	220			
ADDS	T19 ♦ cadmium plating	680	H-TOTE	T20 ♦ 1° static rinse for T19	180
			IWTP-CN	T48 ♦ 2° counterflow rinse for T19	300
ADDS	T21 ♦ cadmium plating	680	H-TOTE	T22 ♦ 1° static rinse for T21	180
			IWTP-CN	T25 ♦ 2° counterflow rinse for T21	300
ADDS	T23 ♦ cadmium plating	680	H-TOTE	T24 ♦ 1° static rinse for T23	180
			IWTP-CN	T40 ♦ 2° counterflow rinse for T23	300
Bldg 1730 - Chromium Conversion Coating and Steel Passivation					
ADDS	T32 ♦ iridite conversion coat	220	IWTP-G	T33 ♦ 1° counterflow for T32	220
H-ACID	T35 ♦ alodine chem film	100			
H-ACID	T36 ♦ clear conversion coat	100	IWTP-G	T37 ♦ 1° counterflow rinse for T35/T36/T38/T39	100
H-ACID	T38 ♦ alodine chem film	100			
H-ACID	T39 black dye	100			
H-ACID	T31 hydrochloric-acid activation	40	IWTP-G	T44 ♦ 1° overflow rinse for T31/T42/T45/T46	100
H-ACID	T42 nitric-acid passivation	40			
H-ACID	T45 nitric-acid deoxidation	100			
H-ACID	T46 ♦ alodine chem film	100			
H-ACID	T47 ♦ nickel dichromate seal	220	IWTP-G	T30 ♦ 1° counterflow rinse for T47	220
			IWTP-G	T34 hot water seal	220
Bldg 1740 - Machine Shop					
H-OILY	n/a machining spent coolants	n/a	H-OILY	n/a drip pan drainage	n/a
H-TOTE	n/a vibratory debur tailwater	n/a			
♦	amenable cyanide-bearing	✓ IWTP-G	dedicated line to IWTP general treatment train		
♦	ferrocyanide-bearing	✓ IWTP-CN	dedicated line to IWTP cyanide-bearing treatment train		
◇	chromium-bearing	✓ H-ACID	dedicated line to acid spent holding for off-site disposal		
		✓ H-ALK	dedicated line to alkaline spent holding for off-site disposal		
		✓ H-OILY	totes to oily water accumulation tanks for off-site disposal		
		✓ ADDS	bath regeneration through solution additions only		
		✓ DCANT	solids decant to sewer		
All tank volume are estimates made by observation during this inspection					



Appendix 3

Sewer Discharge Standards and Limits for Sunbank @ IWD-457.01 and 457.02

Pollutants of Concern	Fed stds (d-max)	Fed stds (mo-avg)	nat'l pro (instant)	local lim (inst/dmax)	monitoring frequency ①		
					IWD-457.01	IWD-457-02	Paso Robles
cadmium (mg/l)	0.52 ⑥	0.21 ⑥	-	0.10	1/quarter	2/year	1/year ⑤
chromium (mg/l)	2.77	1.71	-	3.70	1/quarter	2/year	1/year ⑤
cobalt (mg/l)	-	-	-	0.075	③	-	-
copper (mg/l)	3.38	2.07	-	0.30	1/quarter	2/year	1/year ⑤
lead (mg/l)	0.69	0.43	-	-	1/quarter	2/year	1/year ⑤
molybdenum (mg/l)	-	-	-	1.10	③	-	-
nickel (mg/l)	3.98	2.38	-	1.90	1/quarter	2/year	1/year ⑤
selenium (mg/l)	-	-	-	0.27	③	-	-
silver (mg/l)	0.43	0.24	-	-	1/quarter	2/year	1/year ⑤
zinc (mg/l)	2.61	1.48	-	4.00	1/quarter	2/year	1/year ⑤
total cyanide (mg/l)	0.51 ⑥	0.26 ⑥	-	0.01	1/quarter	2/year	1/year ⑤
amenable cyanide (mg/l)	0.37 ⑥	0.14 ⑥	-	0.01	-	-	-
total toxic organics (mg/l)	-	2.13	-	-	2/year ②	2/year ②	1/year ⑤②
ammonia (mg/l)	-	-	-	20.0	1/month	-	1/year ⑤
boron (mg/l)	-	-	-	5.0	③	-	-
oil and grease (mg/l)	-	-	-	100	2/year	2/year	1/year ⑤
sulfate (mg/l)	-	-	-	200	1/month	-	1/year ⑤
total suspended solids (mg/l)	-	-	-	360	③	-	-
total dissolved solids (mg/l)	-	-	-	1000	1/month	-	1/year ⑤
sodium (mg/l)	-	-	-	200	1/month	-	1/year ⑤
chloride (mg/l)	-	-	-	150	1/month	-	1/year ⑤
biochem oxy demand (mg/l)	-	-	-	360	③	-	-
temperature (°F)	-	-	-	150°F	③	-	-
pH (s.u.)	-	-	<5.0	6.0-9.0	1/month	2/year	1/year ⑤
explosivity	-	-	<140°F ④	<140°F ④	③	-	-

- ① Recommended **reductions in green**. Recommended **increases in RED**.
- ② Self-certification to following an approved toxic organics management plan is allowed in lieu of sampling. A City inspection could then qualify as an independent determination.
- ③ As part of periodic priority pollutant scans in order to identify changes in discharge quality.
- ④ Closed-cup flashpoint.
- ⑤ Twice -per year city monitoring could replace two self-monitoring samples per year.
- ⑥ Combined new and existing source Federal metal finishing standards. See Section 2.4 on page 9 of this report.

$$C_{433Cd} = \frac{(C_{433PSES} Q_{433PSES}) + (C_{433PSNS} Q_{433PSNS})}{Q_{433PSES} + Q_{433PSNS}} \times \frac{(Q_{total} - Q_{dilution})}{Q_{total}}$$

$$C_{433Cd} = \frac{(0.69 \cdot 71\%) + (0.11 \cdot 29\%)}{71\% + 29\%} \times \frac{(100\% - 0\%)}{0\%} = 0.52 \text{ mg/l}$$

Example Calculations for Cd d-max
 C_{433PSNS} = Fed new source stds
 C_{433PSES} = Fed existing source stds
 Q_{total} = Total Flow
 Q_{433PSNS} = New Source Flow
 Q_{433PSES} = Existing source Flow
 Q_{dilution} = Dilution Flow



Appendix 4(a)

Wastewater Discharge Quality for Sunbank IWTP Discharge (IWD-457.01)

Sample Record Summary (Sep 2010 – Sep 2011)

pollutants	IWD-457.01 sampling results				IWD-457.01 violation rate			sample count
	mean	99th%	min	max	Fed d-max	Fed mo-av	Loc d-max	
cadmium (mg/l)	0.018	0.040	0.006	0.033	0/9	0/9	0/9	9
chromium (mg/l)	0.054	0.161	<0.010	0.110	0/9	0/9	n/a	9
cobalt (mg/l)	<0.010	0.003	<0.010	<0.010	n/a	n/a	0/9	9
copper (mg/)	0.004	0.011	<0.010	<0.010	0/9	0/9	0/9	9
lead (mg/l)	<0.010	<0.010	<0.010	<0.010	0/3	0/3	n/a	3
molybdenum (mg/l)	0.015	0.026	0.011	0.018	n/a	n/a	0/3	3
nickel (mg/l)	0.045	0.169	<0.010	0.140	0/9	0/9	n/a	9
selenium (mg/l)	0.009	0.02	<0.020	<0.020	n/a	n/a	0/3	3
silver (mg/l)	<0.010	<0.010	<0.010	<0.010	0/3	0/3	n/a	3
zinc (mg/l)	0.014	0.047	<0.020	0.046	0/9	0/9	0/9	9
amenable cyanide (mg/l)	-	-	-	-	n/a	n/a	n/a	-
total cyanide (mg/l)	0.021	0.106	<0.004	0.112	0/11	0/9	3/11	11
total toxic organics (mg/l)	0.109	n/a	0.109	0.109	0/1	n/a	n/a	1
pH (s.u.)	8.86	n/a	8.48	9.00	n/a	n/a	0/9	9
temperature (°C)	23.8	31.9	18.8	27.4	n/a	n/a	0/7	7
biochem oxy demand (mg/l)	2.9	n/a	2.9	2.9	n/a	n/a	0/1	1
total suspended solids (mg/l)	1.4	3.5	<1.0	3	n/a	n/a	0/9	9
ammonia (mg/l)	28.6	63.4	9.2	50.0	n/a	n/a	5/9	9
oil and grease (mg/)	<5	<5	<5	<5	n/a	n/a	0/2	2
total dissolved solids (mg/l)	6060	11810	3500	12000	n/a	n/a	9/9	9
boron (mg/l)	1.18	2.53	0.65	1.80	n/a	n/a	0/3	3
chloride (mg/l)	640	1070	490	1000	n/a	n/a	9/9	9
sodium (mg/l)	2220	4760	1300	4300	n/a	n/a	9/9	9
sulfate (mg/l)	1300	n/a	1300	1300	n/a	n/a	1/1	1
explosivity	-	-	-	-	-	-	-	-

Violations (Sep 2010 – Sep 2011)

sample dates	type	sampler	point	Fed standards / local limits	viols	days
09/30/11	24-h	Sunbank	457.01	TDS - local d-max 1000 mg/l	5630	1
09/30/11	24-h	Sunbank	457.01	chloride - local d-max 150 mg/l	510	1
09/30/11	24-h	Sunbank	457.01	sodium - local d-max 200 mg/l	1850	1
08/26/11	24-h	Sunbank	457.01	TDS - local d-max 1000 mg/l	5660	1
08/26/11	24-h	Sunbank	457.01	chloride - local d-max 150 mg/l	830	1
08/26/11	24-h	Sunbank	457.01	sodium - local d-max 200 mg/l	2040	1
07/26/11	24-h	Sunbank	457.01	ammonia - local d-max 20 mg/l	36.6	1
07/26/11	24-h	Sunbank	457.01	TDS - local d-max 1000 mg/l	4860	1
07/26/11	24-h	Sunbank	457.01	chloride - local d-max 150 mg/l	580	1
07/26/11	24-h	Sunbank	457.01	sodium - local d-max 200 mg/l	1500	1
06/23/11	24-h	Sunbank	457.01	ammonia - local d-max 20 mg/l	39.5	1
06/23/11	24-h	Sunbank	457.01	TDS - local d-max 1000 mg/l	7550	1



Appendix 4(a) – continued

Wastewater Discharge Quality for Sunbank IWTP Discharge (IWD-457.01)

Violations - continued (Sep 2010 – Sep 2011)

sample dates	type	sampler	point	Fed standards / local limits	violations	days
06/23/11	24-h	Sunbank	457.01	chloride - local d-max 150 mg/l	770	1
06/23/11	24-h	Sunbank	457.01	sodium - local d-max 200 mg/l	2270	1
06/02/11	grab	Sunbank	457.01	total cyanide - local d-max 0.010 mg/l	0.051	1
05/25/11	24-h	Sunbank	457.01	TDS - local d-max 1000 mg/l	5400	1
05/25/11	24-h	Sunbank	457.01	chloride - local d-max 150 mg/l	500	1
05/25/11	24-h	Sunbank	457.01	sodium - local d-max 200 mg/l	4300	1
05/25/11	24-h	Sunbank	457.01	ammonia - local d-max 20 mg/l	50.0	1
05/25/11	grab	Sunbank	457.01	total cyanide - local d-max 0.010 mg/l	0.112	1
02/28/11	24-h	Sunbank	457.01	TDS - local d-max 1000 mg/l	4700	1
02/28/11	24-h	Sunbank	457.01	chloride - local d-max 150 mg/l	510	1
02/28/11	24-h	Sunbank	457.01	sodium - local d-max 200 mg/l	1500	1
02/28/11	24-h	Sunbank	457.01	ammonia - local d-max 20 mg/l	37.0	1
02/28/11	grab	Sunbank	457.01	total cyanide - local d-max 0.010 mg/l	0.054	1
11/18/10	24-h	Sunbank	457.01	TDS - local d-max 1000 mg/l	3500	1
11/18/10	24-h	Sunbank	457.01	chloride - local d-max 150 mg/l	560	1
11/18/10	24-h	Sunbank	457.01	sodium - local d-max 200 mg/l	1300	1
10/20/10	24-h	Sunbank	457.01	TDS - local d-max 1000 mg/l	5200	1
10/20/10	24-h	Sunbank	457.01	chloride - local d-max 150 mg/l	490	1
10/20/10	24-h	Sunbank	457.01	sodium - local d-max 200 mg/l	1400	1
10/20/10	24-h	Sunbank	457.01	sulfates - local d-max 200 mg/l	1300	1
09/30/10	24-h	Sunbank	457.01	TDS - local d-max 1000 mg/l	12000	1
09/30/10	24-h	Sunbank	457.01	chloride - local d-max 150 mg/l	1000	1
09/30/10	24-h	Sunbank	457.01	sodium - local d-max 200 mg/l	1000	1
09/30/10	24-h	Sunbank	457.01	ammonia - local d-max 20 mg/l	40.0	1
total days of violation						36



Appendix 4(b)

Wastewater Discharge Quality for Sunbank Deburring Discharge (IWD-457.02)

Sample Record Summary (Sep 2010 – Sep 2011)

pollutants	IWD-457.02 sampling results				IWD-457.02 violation rate			sample count
	mean	99th%	min	max	Fed d-max	Fed mo-av	Loc d-max	
cadmium (mg/l)	0.033	0.166	<0.005	0.160	0/7	0/7	1/7	7
chromium (mg/l)	0.094	0.594	<0.010	0.580	0/7	0/7	n/a	7
cobalt (mg/l)	0.004	0.019	<0.010	0.019	n/a	n/a	0/7	7
copper (mg/)	0.93	5.54	0.05	5.40	1/7	1/7	1/7	7
lead (mg/l)	1.3	n/a	1.3	1.3	1/1	1/1	n/a	1
molybdenum (mg/l)	0.061	n/a	0.061	0.061	n/a	n/a	0/1	1
nickel (mg/l)	0.168	0.552	0.050	0.50	0/7	0/7	n/a	7
selenium (mg/l)	0.016	n/a	0.016	0.016	n/a	n/a	0/1	1
silver (mg/l)	0.011	n/a	0.011	0.011	0/1	0/1	n/a	1
zinc (mg/l)	1.62	6.87	0.23	6.50	2/7	2/7	0/7	7
amenable cyanide (mg/l)	-	-	-	-	n/a	n/a	n/a	-
total cyanide (mg/l)	0.039	0.276	<0.004	0.270	0/7	0/7	1/7	7
total toxic organics (mg/l)	0.008	n/a	0.008	0.008	0/1	n/a	n/a	1
pH (s.u.)	8.72	n/a	8.40	9.02	n/a	n/a	1/7	7
temperature (°C)	22.3	24.4	20.9	23.4	n/a	n/a	0/7	5
biochem oxy demand (mg/l)	1400	n/a	1400	1400	n/a	n/a	1/1	1
total suspended solids (mg/l)	390	2070	22	2000	n/a	n/a	2/7	7
ammonia (mg/l)	11.7	39.7	2.0	37.0	n/a	n/a	1/7	7
oil and grease (mg/)	260	820	89.0	430.0	n/a	n/a	1/2	2
total dissolved solids (mg/l)	1080	2210	740	2100	n/a	n/a	3/7	7
boron (mg/l)	1.30	n/a	1.3	1.3	n/a	n/a	0/1	1
chloride (mg/l)	72	96	52	85	n/a	n/a	0/7	7
sodium (mg/l)	223	486	153	460	n/a	n/a	3/7	7
sulfate (mg/l)	150	n/a	150	150	n/a	n/a	0/1	1
explosivity	-	-	-	-	-	-	-	-

Violations (Sep 2010 – Sep 2011)

sample dates	type	sampler	point	Fed standards / local limits	viols	days
09/30/11	grab	Sunbank	457.02	TDS - local d-max 1000 mg/l	1160	1
09/30/11	grab	Sunbank	457.02	sodium - local d-max 200 mg/l	241	1
Aug 2011	grab	Sunbank	457.02	zinc - Fed mo-avg 1.48 mg/l	2.19	31
08/26/11	grab	Sunbank	457.02	pH - local max 9.0 s.u.	9.02	1
08/26/11	grab	Sunbank	457.02	TDS - local d-max 1000 mg/l	1160	1
08/26/11	grab	Sunbank	457.02	sodium - local d-max 200 mg/l	245	1
05/25/11	grab	Sunbank	457.02	TSS - local d-max 360 mg/l	400	1
02/28/11	grab	Sunbank	457.02	ammonia - local d-max 20.0 mg/l	37.0	1
11/18/10	grab	Sunbank	457.02	cadmium – local d-max 0.10 mg/l	0.16	1
11/18/10	grab	Sunbank	457.02	copper - Fed d-max 3.38 mg/l	5.4	28
Nov 2010	grab	Sunbank	457.02	copper - Fed mo-avg 2.07 mg/l	5.4	
11/18/10	grab	Sunbank	457.02	copper - local d-max 0.30 mg/l	5.4	1



Appendix 4(b) – continued

Wastewater Discharge Quality for Sunbank Deburring Discharge (IWD-457.02)

Violations - continued (Sep 2010 – Sep 2011)

sample dates	type	sampler	point	Fed standards / local limits	viols	days
11/18/10	grab	Sunbank	457.02	lead - Fed d-max 0.69 mg/l	1.3	30
Nov 2010	grab	Sunbank	457.02	lead - Fed mo-avg 0.26 mg/l	1.3	
11/18/10	grab	Sunbank	457.02	zinc - Fed d-max 2.61 mg/l	6.5	30
Nov 2010	grab	Sunbank	457.02	zinc - Fed mo-avg 1.48 mg/l	6.5	
11/18/10	grab	Sunbank	457.02	zinc - local d-max 4.0 mg/l	6.5	1
11/18/10	grab	Sunbank	457.02	total cyanide - local d-max 0.010 mg/l	0.270	1
11/18/10	grab	Sunbank	457.02	BOD - local d-max 360 mg/l	1400	1
11/18/10	grab	Sunbank	457.02	TSS – local d-max 360 mg/l	2000	1
11/18/10	grab	Sunbank	457.02	oil and grease – local d-max 100 mg/l	430	1
11/18/10	grab	Sunbank	457.02	TDS - local d-max 1000 mg/l	1160	1
11/18/10	grab	Sunbank	457.02	sodium - local d-max 200 mg/l	241	1
total days of violation						135