UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
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The November 21, 2003 inspection report for the pretreatment performance evaluation of the Placer County, Sewer Maintenance District No.1 was issued as an attachment to the December 9, 2003 EPA administrative order.

Greg V. Arthur

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

PRETREATMENT PERFORMANCE EVALUATION INSPECTION REPORT

NPDES Permittee:	Placer County Sewer Maintenance District No.1 11476 C Avenue, Dewitt Center, Auburn, California 95603-2702 Wastewater Treatment Plant (NPDES CA0079316) WDRs Orders 97-113 and 96-087
Dates of Inspection:	May 7-8, May 14, July 22, November 19, 2003
Data Review:	effluent: Jan 2002 – Sep 2003 sludge: Jan 2002 – Jun 2003

Inspection Participants:

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Section 1

Introduction and Background

1.0 Scope and Purpose

In November 2003, EPA completed a performance evaluation of the regulatory control of non-domestic wastewaters discharged into the Placer County Sewer Maintenance District No.1 ("SMD-1") wastewater treatment plant. This performance evaluation was one of a series of reviews of small publicly-owned treatment works ("POTWs") that accept non-domestic contributions, but are not large enough to be mandated to operate EPA-approved pretreatment programs. EPA recognizes that the regulatory authority for pretreatment in small POTWs is shared with the Regional Water Quality Control Board ("RWQCB") and that the responsibilities for all aspects of the pretreatment program are not clearly delineated.

The scope of this performance evaluation comprised:

- Sampling inspection of the Placer County SMD-1 wastewater treatment plant on May 8
- Additional sampling of the wastewater treatment plant on May 14 and July 22
- A review of the 2002-2003 Placer County SMD-1 self-monitoring records
- Sampling inspections of three significant industrial users, a compliance evaluation inspection of a fourth significant industrial user, and walk-throughs of six other industries
- Interviews with representatives of Placer County on May 7-8, May 14, and November 19.

The purpose of this evaluation was to determine if non-domestic discharges into the Placer County SMD-1 sewer system are properly controlled. The evaluation findings were measured against two fundamental performance objectives. The first is the prevention of sewage treatment works pass-through, interference and sludge contamination as shown by compliance with the Federal sludge limits, the discharge permit limits, and expected future Clean Water Act requirements. The second is the consistent compliance by the industrial users with their own Clean Water Act requirements, in particular with the Federal best-available-technology standards that apply to certain industrial categories, and any national prohibitions and local limits for pollutants associated with treatment works non-compliance.

This report covers the performance of the pretreatment program as it currently exists in Placer County SMD-1 and the RWQCB. Some pertinent findings from the industrial user inspections are also incorporated. The significant industrial users received individual reports covering their own performance. Arthur collected samples on May 8, May 14, and July 22 for delivery to Sequoia Labs in Sacramento on May 8, and May 15, and to the EPA Richmond Laboratory on July 23.

Section 1 – Introduction and Background

1.1 Placer County SMD-1 Wastewater Treatment Plant

The Placer County SMD-1 wastewater treatment plant is a nitrifying rotating biological contactor and trickling filter plant followed by media filtration for discharge to Rock Creek. The wastewater treatment plant has a dry-weather design capacity limited by the tertiary filters to 2.18 million gallons per day ("mgd"). Other portions of the wastewater treatment plant have greater design capacity. The average and calculated peak flows are 1.95 and 3.25 mgd. As a result, flows are not always within design capacity, which means some wet-weather flows discharge without tertiary filtration. See Figure 1.

- Primary and Secondary Treatment - The headworks, which provide grinding and aerated grit removal, is followed by primary sedimentation. All primary basins are in service during the winter wet-season, but some are out of service in the summer for daytime storage of return flows. Magnesium hydroxide is added to the primary effluent prior to introduction into three parallel sets of rotating biological contactors ("RBCs") which are followed by secondary clarifiers. Intermediate clarifiers between the RBCs and the secondaries serve as reservoirs and solids contact basins for two recirculating trickling filters. The RBCs and trickling filters provide nitrification but not denitrification.

- Tertiary Treatment - The secondary effluent is decanted through anthracite-media gravity filtration. Filter backwash returns to the primary sedimentation basin. The tertiary-grade wastewater is chlorinated and dechlorinated prior to discharge to Rock Creek. Placer County also purchases water from the Nevada Irrigation District for release in order to comply consistently with receiving water limits for ammonia.

- Solids Handling - Primary sludge is the only solids stream hauled off-site. Sludge from the intermediate and secondary clarifiers, tertiary filtrate, grit, and grindings all return to the primary basins. The primary sludge is anaerobically digested and dewatered with the press filtrate returned to grit removal. Dewatered sludge is hauled to the county landfill.

- Sampling - The influent sampling point, located upstream of the headworks is designated as IWD-PC1 for the purposes of this report. All return flows rejoin treatment down-stream of influent sampling. The effluent compliance sample point, sited immediately after final dechlorination, is designated as IWD-PC2. The accumulation of filter cake for hauling off-site is designated as the sludge compliance sampling point, IWD-PC3.

1.2 Sewer Service Area

The Placer County SMD-1 sewer service area comprises unincorporated county lands north of Auburn along State Highway 49 including the Auburn airport and the industrial development associated with the airport. The Placer County SMD-1 wastewater treatment plant serves a service area with an overall rated population of 6,300 equivalent dwelling units, with the primary contributions coming from commercial and industrial users. Out of an as-of-yet unquantified inventory of industrial users, at least five industrial users are

considered to be significant industrial users. Total non-domestic contributions cannot be determined without a comprehensive inventory of non-domestic wastewater flow rates.

1.3 Discharge Requirements

Placer County is authorized by the June 20, 1997 RWQCB Waste Discharge Requirements, Order 97-113, ("WDRs"), to discharge treated sewage from the Placer County SMD-1 wastewater treatment plant into Rock Creek at a point just above its confluence with Dry Creek. The WDRs also function as the National Pollutant Discharge Elimination System permit CA0079316. The WDRs contain narrative prohibitions, effluent limits, receiving water limitations, monitoring requirements, pretreatment provisions, and sludge disposal requirements. They set effluent limitations for conventional pollutants, total coliform, residual chlorine, oil and grease, surfactants, pH, and acute biotoxicity, as well as receiving water limitations for un-ionized ammonia, turbidity, pH, dissolved oxygen, fecal coliform, chlorine residual, and temperature. The receiving water limitations also include narrative provisions against causing a visible film, discoloration, objectionable growths, nuisance conditions, the bioaccumulation of toxics, bad tasting fish, or in any adverse effect on the beneficial uses of the receiving waters.

The RWQCB also issued a separate Cease and Desist Order, Order 96-087, ("CDO"), that required the completion of the corrective steps necessary to meet the WDRs for receiving water ammonia by April 1998. The third set of RBCs were installed to reduce ammonia concentrations.

1.4 Legal Authorities

The WDRs impose an abbreviated set of pretreatment provisions that require implementation of the regulatory controls necessary to enact most but not all of the national prohibitions of 40 CFR 403.5(a)(b). The WDRs do not require Placer County to obtain an approved pre-treatment program because 40 CFR 403.8(a) only mandates POTWs with design capacities above 5.0 mgd to do so. However, 40 CFR 403.8(a) does allow for States or EPA to require small POTWs that accept incompatible wastewaters to obtain an approved pretreatment program. Requirements to obtain and implement an approved pretreatment program would include the following:

- The implementation of the general and specific national prohibitions in 40 CFR 403.5 for industrial users against the introduction of incompatible wastewaters;
- The requirement in 40 CFR 403.5 to develop locally-determined limits necessary to protect the treatment works from potential adverse impacts, such as operational interference, worker health and safety risks, the pass-through of pollutants to the receiving waters, and sludge contamination;

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- The performance of the program functions set forth in 40 CFR 403.8, such as identifying industrial users, issuing permits, inspecting and sampling industrial users, providing adequate funding, and enforcing against violators;
- The implementation of an industrial users self-monitoring program under 40 CFR 403.12;
- The implementation of Federal categorical standards under 40 CFR 403.6; and
- The enacting of the local legal authorities necessary to operate an approved pretreatment program under 40 CFR 403.8.

Placer County has a sewer use ordinance modeled after the City of Roseville code. This evaluation did not involve a review of the sewer use ordinance in order to determine if Placer County has the legal authority to implement all aspects of an approved pretreatment program. The RWQCB has the authority to assume the functions of the pretreatment program under 40 CFR 403.10(e,f).

Section 2

Wastewater Treatment Plant Performance

The Placer County SMD-1 wastewater treatment plant must meet permit effluent limits for conventional pollutants, metals, toxic organics, pH, residual chlorine, and biotoxicity. 40 CFR 403.5(a,b,c) and 403.6.

Non-domestic wastewaters may not result in unpermitted releases, hazardous or explosive conditions with the sewers, or operational interferences in the collection system. 40 CFR 403.5(b).

2.0 Summary

The wastewater treatment plant is expected to experience the pass-through of aluminum, manganese, and pesticides once the new NPDES permit takes effect. There are no other expected adverse impacts related to non-domestic discharges into the sewers, although non-domestic loadings contribute to the intermittent overloading of nitrification, which result in violations of the limits related to ammonia toxicity. Performance was determined through a review of the 2002-2003 discharge monitoring reports, 2002 California Toxics Rule reports, 2002-2003 sludge results, and the EPA sampling conducted in this evaluation. See Tables 1 - 4 for wastewater and sludge summaries, Tables 4 - 5 for the EPA sampling results, and Table 7 for the definitions of ‘pass-through’ and ‘interference’.

Requirements

- Sludge sampling must be reported in mg/kg dry-weight, include moisture content results, and be analyzed down to appropriate detection limits, in order to allow for the determination of compliance.

Recommendations

- Placer County should regularly inform the rate payers of the district’s compliance status, and the on-going need to fund the capital improvements, pretreatment, and operations necessary to protect and maintain its public wastewater investment.

- The wastewater treatment plant influent should be monitored for aluminum, manganese, copper, lead, zinc, selenium, and total phosphorus.

- The wastewater treatment plant effluent and the receiving waters should be monitored for total phosphorus.

Section 2 – Wastewater Treatment Plant Performance

2.1 Conventional Pollutants

The WWTP produces high-quality, low-nutrient, tertiary-treated wastewaters. As a result, it consistently complies with its permit limits for conventional pollutants. The average and calculated 99th% peaks are less than 4 and 9 mg/l BOD and 4 and 13 mg/l TSS. The oil & grease results are all below detection at 5 mg/l. There were two instances of the effluent pH below the lower 6.5 limit, each lasting approximately five minutes, and each attributed to meter malfunction. Finally, high flows during the wet season result in the occasional bypassing of the tertiary filters.

2.2 Ammonia Toxicity

The permit sets acute toxicity and maximum pH limits as well as receiving water limitations for un-ionized ammonia, in order to limit effluent ammonia toxicity. The WWTP consistently complies with the acute toxicity and maximum pH limits, with the effluent pH never exceeding 7.5. However, the receiving water limits have not always been achieved because the organic loads often exceed the capacity of the RBCs and trickling filters to biodegrade and nitrify. The average and calculated 99th% peak concentrations for un-ionized ammonia in Rock Creek were 7.8 and 40.8 µg/l, which results in a ~11% chance of violation. Consistent compliance with the ammonia toxicity limits requires the capacity to provide full nitrification and consistent pH control of peak loads. As a result, it is a function of both the organics loadings from domestic and non-domestic sources, and the capacity of the WWTP to provide enough nitrification. It is not related solely to non-domestic contributions.

The next version of the permit would be expected to either replace or supplement the receiving water limitations with sliding-scale effluent limits for ammonia which are most stringent when pH and temperature are high. As a result, in the summer, the monthly-average and sample-maximum ammonia limits would be expected to bottom out at 2.37 and 13.3 mg/l. Against these minimum sliding-scale ammonia limits, the WWTP inconsistently complies year-round, with their average and calculated 99th% peak ammonia concentrations of 5.1 and 15.3 mg/l. This results in a ~3% chance of a violation of the lowest expected maximum limit and ~68% chance of violation of the lowest expected sliding-scale monthly-average limit.

2.3 Nitrates and Nitrites

The WWTP would not comply with the expected water quality standards for nitrates without completion of upgrades for full nitrification and denitrification. The majority of samples for nitrates exceeded the expected 10 mg/l standard. The average and calculated 99th% peak nitrate concentrations were 13.3 and 30.6 mg/l which results in a ~67% chance of violation of the expected limit. The nitrate levels are unrelated to non-domestic contributions since the WWTP does not have the capacity to provide denitrification.

Section 2 – Wastewater Treatment Plant Performance

2.4 Phosphorus

The permit does not limit total phosphorus, phosphates, or organo-phosphates. However, the wastewater treatment plant intermittently receives and discharges total phosphorus concentrations well over typical levels for California sewer districts. The total phosphate as phosphorus ("phosphate-P") concentrations from the wastewater treatment plant rose from an average of 2.5 mg/l in 2002 to 15 mg/l in May 2003 during this inspection. Receiving water phosphate-P levels in California are usually below a 0.01 mg/l detection limit. Literature surveys document adverse impacts in western waterways at levels as low as 0.077 mg/l phosphorus. The principal adverse impact would be the dominant formation of filamentous green algae in the receiving water stream and its subsequent degradation of water quality through worsened aesthetics and reduced dissolved oxygen content. (*Nutrient Criteria Technical Guidance Manual: Rivers and Streams, 2002 – Ecoregion I; Fed Register: July 27, 2000, vol. 65, number 145*).

2.5 Salts

The permit does not limit salts but require monitoring for total dissolved solids, hardness, and electrical conductivity. The monitoring results for both WWTPs are all well below what could adversely impact reuse, or in the case of sulfate, impart an acute toxicity.

2.6 Toxic Pollutants

Aluminum - Aluminum appears to be one of two toxic metals potentially related to non-domestic contributions that could exceed the expected permit limits. The effluent average and calculated 99th% peaks are 101 and 391 µg/l. This results in a ~22% chance of a violation of the expected 200 µg/l maximum limit. As a result, the wastewater treatment plant is likely to periodically exceed the expected limit for aluminum unless there are reductions in influent loadings or increases in treatment plant removals. Placer County SMD-1 has significant non-domestic sources of aluminum associated with alumina-based ceramics manufacturing (*Carpenter Advanced Ceramics*) and alumina-slurry glass polishing (*Coherent*). The aluminum removal rate of ~88% is typical for secondary wastewater treatment.

Manganese - Manganese is also potentially related to non-domestic contributions and could exceed the expected permit limits. The effluent average and calculated 99th% peaks are 35 and 62 µg/l. This results in an ~9% chance of a violation of the expected 50 µg/l maximum limit. As with aluminum, the wastewater treatment plant is likely to occasionally exceed the expected limits for manganese without reductions in loadings or increases in removals. Placer County SMD-1 may have at least one non-domestic source of manganese since manganese is a decolorizing agent in clear glass (*Coherent*).

Section 2 – Wastewater Treatment Plant Performance

Other Metals - The wastewater treatment plant is likely to consistently comply with the expected standards for copper, lead, zinc, and selenium even though there are non-domestic sources of these metals. The expected four-day average and sample-maximum limits for copper, which are a function of hardness, are 5.0 and 7.0 µg/l. For lead, zinc, and selenium, the maximum limits are expected to be 2.5, 120, and 50 µg/l. The effluent average and calculated 99th% peaks for these metals were all well below their limits, with copper at 2.0 and 4.6 µg/l, lead at 0.7 and 1.6 µg/l, zinc at 27.3 and 43.4 µg/l, and selenium at 0.15 and 0.22 µg/l. The influent copper concentrations also are similar to those for other small California sewer districts (ex: *Red Bluff-26.0 µg/l, Nevada City-20.0 µg/l*), and the removal efficiencies are typical for secondary treatment.

Other Toxics - A number of other toxic pollutants were detected but most of them did not or will not exceed the limits derived from the California Toxics Rule ("CTR"). The principle exceptions were the long-term averages related to human health effects for a chlorination byproduct (*dichlorobromomethane*) and a plasticizing agent (*bis(2-ethylhexyl)phthalate*). There were also a number of pesticides and their byproducts, herbicides, and polychlorinated biphenyls ("PCBs") detected just once at levels over the expected CTR limit (*alachlor, aroclor-1016, aroclor-1221, aroclor-1260, atrazine, 4,4'-DDE, endosulfan I, endosulfan II, dioxin, and heptachlor epoxide*). There is also a slight possibility of exceeding the limits for a gasoline additive (*methyl-tert-butyl ether*). However, only bis(2-ethylhexyl)phthalate and methyl-tert-butyl ether could be considered to have non-domestic sources such as ground water clean-up sites and plastic manufacturing. The other toxic organics are likely entrained in the run-off, ground water infiltration, or sewage, from domestic activities.

2.7 Federal Sludge Limits

The wastewater treatment plant sludges are likely to consistently comply with the Federal clean sludge limits suitable for any reuse in Table 3 of 40 CFR 503.13. However, Placer County did not self-report the annual sludge samples in mg/kg dry-weight. The reports also did not include moisture content and low enough detection limits to allow the conversion of the results into mg/kg dry-weight comparable to the Federal sludge standards. As a result, Placer County's self-monitoring results for 2002 and 2003 were not usable for determining compliance. The levels of lead, selenium, and zinc found in the EPA sample collected during this inspection were higher than typical levels for small California sewer districts (*typical dry-weight mg/kg's are 15-25 Pb, 3-10 Se, 300-500 Zn*). Otherwise, the EPA sample contained typical levels of copper and the other Federally-regulated metals.

Section 3

Local Limits

Pretreatment programs are required to develop local limits to prevent pass-through, interference, sludge contamination or other adverse effects upon the treatment works. 40 CFR 403.5(c).

3.0 Summary

Placer County has an ordinance to prohibit discharges that exceed local limits or could harm the treatment works. However, the technical basis is questionable since it incorporates local limits derived for the City of Roseville and not SMD-1. The next WDRs should for the first time set effluent limits for toxic pollutants (aluminum and manganese are expected to pass-through). There is little evidence of any other non-compliance related to non-domestic sources although there are sources of other toxic pollutants in the service area that could pose a significant risk to the treatment works. See Table 7 for a definition of 'local limits'.

Requirements

- Aluminum and manganese sources, both domestic and non-domestic, into the sewer systems must be quantified.
- Placer County must determine the maximum allowable headworks loadings for aluminum and manganese and enact new local limits, prohibitions or control strategies.

Recommendations

- The maximum allowable headworks loadings should be determined for copper, lead, selenium, zinc, phosphorus, MTBE, oil & grease, and any other pollutants the district intends to regulate under a local limit.
- The effluent discharges should be resampled in order to determine whether bis(2ethylhexyl)phthalate, a number of pesticides and their byproducts, herbicides, and polychlorinated biphenyls are present at levels over their detection limits.

3.1 National Prohibitions

The national prohibitions apply to every non-domestic discharge into the sewers nationwide to prevent harm to the treatment works. They consist of the general prohibitions in 40 CFR 403.5(a) against harm and the specific prohibitions in 40 CFR 403.5(b). In practice, local limits, covering a range of pollutants, and developed in accordance with 40 CFR 403.5(c), replace most of the effective span of the national prohibitions. Placer County adopted the

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Roseville local limits as its own but will need to re-develop them for the pollutants of concern in order to be protective of its own treatment works.

3.2 Pollutants of Concern

The pollutants of concern are those related to non-domestic sources with a statistical chance of over 1% to cause a violation of the WDRs or the Federal sludge limits. The pollutants with a statistical chance over 1% are aluminum, manganese, ammonia, nitrates, alachlor, bis(2-ethylhexyl)phthalate, bromodichloromethane, 4,4'-DDE, endosulfan I, endosulfan II, dioxin, heptachlor epoxide, aroclor-1016, aroclor-1221, and aroclor-1260. Of these, the only pollutants with discernible non-domestic sources are aluminum, manganese, and possibly bis(2-ethylhexyl)phthalate.

A number of other pollutants with a statistical chance below 1% to cause a violation, nevertheless, should be pollutants of concern for the purpose of determining local limits. Copper, chromium, lead, nickel, phosphorus and zinc are entrained in solution and rinse tanks at metal finishers and powder coaters (*Sierra Plating, Advanced Metal Finishing, Custom Powder Coating*). Copper, lead, selenium, zinc and possibly phosphorus are generated by laser glass grinding (*Coherent*). Nickel and molybdenum are in solution tanks used in ceramic finishing (*Carpenter*). MTBE at aquifer clean-up sites are pollutants of site-specific concern and oil & grease is a concern in every sewer district.

Bromodichloromethane would not be a pollutant of concern because it is a chlorination by-product unrelated to influent quality. Ammonia, nitrates, and the trihalomethane precursors, also would not be pollutants of concern because their effluent concentrations are a function of the treatment plant operations. It cannot be determined without further monitoring whether the detected pesticides, herbicides, and polychlorinated biphenyls are pollutants of concern. The PCBs and 4,4'-DDE, long-banned from use, were detected in single samples at levels over the expected permit limits even though they should have no identifiable non-domestic or domestic sources. Alachlor, atrazine, endosulfans, dioxin, and heptachlor epoxide also were only detected in single samples and, along with bis(2-ethylhexyl)phthalate, would be most likely to have domestic or infiltration/inflow sources. Compliance with the acute toxicity and the chronic three-species toxicity limits using minnows, algae, and ceriodaphnia could be used to confirm that there is no non-ammonia acute toxicity from these other toxic organics.

Finally, dioxin (*2,3,7,8-TCDD*), heptachlor epoxide, and three PCBs (*aroclor-1016, aroclor-1221, aroclor-1260*), each detected once, have analytical detection limits over the expected permit limits.

3.3 Maximum Allowable Headworks Loadings

Every sewer district must determine the maximum loading of pollutants it can accept and still comply with the permit requirements and Federal sludge limits. The maximum allowable

headworks loadings ("MAHLs") form the technical basis for determining local limits. MAHLs are needed for aluminum, and manganese, as well as for copper, chromium, lead, molybde-num, nickel, phosphorus, selenium, zinc, oil & grease, and MTBE. All this requires influent, effluent, and sludge monitoring under the range of conditions expected during the year, in order to determine the WWTP removal efficiencies. EPA has a free spread sheet program called Prelim to assist in the calculations. WEF also has a fate and transport model available for purchase on its web-site.

3.4 Allocation Method

The MAHLs for each of the pollutants of concern must be allocated between uncontrollable and controllable sources. The uncontrollable sources comprise domestic sewage, and infiltration and inflow. The controllable sources are those that could be regulated under permits or best-management practices. This will require background monitoring of domestic sewage, and infiltration and inflow, in order to determine the pollutant loadings that cannot be allocated to the controllable sources. The remaining loadings can then be allocated in any fashion to the individual industrial and commercial sources. For example, Placer County could set different local limits by individual industrial discharge, or by flow-weighted average, or uniformily across the entire service area for some pollutants but differentially set for others. The allocation method does not matter as long as the total allocation out to the domestic and non-domestic users does not exceed the calculated MAHLs.

It is possible that the main sources of certain pollutants are domestic in nature and largely uncontrollable by ordinance through permitting or best-management practices. For example, significant pesticide loadings may come primarily from infiltration and inflow off of nearby fields, or household use. In these cases, Placer County would have to redetermine the MAHLs after the sources are mitigated through some other means.

3.5 Industrial User Compliance with Local Limits

The Federal regulations do not define how to determine regulatory success. Moreover, any conclusion regarding industrial user compliance with the local limits would be premature since they are not technically-based to protect the Placer County SMD-1 treatment works from adverse impacts, and the sources of the pollutants of concern are not yet identified. Once the local limits are sound and implemented through industrial user permits, however, the following performance measures determine regulatory success in achieving industrial user compliance.

- Treatment Plant Performance - EPA Region 9 bases its primary determinations on the purpose of local limits and the national prohibitions to prevent pass-through, interference, sludge con-tamination, or potential worker safety risks. As a result, the best measure of a program's effectiveness is consistent compliance with the NPDES permit and sludge

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limits. By this measure, Placer County would not be successful if the pass-through of aluminum and manganese persists.

- Cost Effective On-Site Treatment - Conventional pollutants can be treated at the sources and the sewage treatment plant. In general, primary treatment for solids and organics, pH adjust-ment, and gravity oil-water separation, are cost effective at the sources, while secondary treatment for dissolved organics, nitrification and denitrification are much more cost effective at the sewage treatment plant. On the other hand, toxics must be entirely controlled by the sources since sewage treatment plants are not designed to for toxics.

- Significant Non-Compliance - Significant non-compliance will be based on industrial user compliance rates once the local limits are re-developed and implemented into the permits.

Section 4

Industrial User Compliance with Federal Standards

Pretreatment programs are required to be administered to ensure industrial user compliance with Federal categorical pretreatment standards. 40 CFR 403.8(b).

4.0 Summary

Best-available-technology ("BAT") treatment or its equivalent was not applied and in place at all identified Federally-regulated industrial process within the Placer County SMD-1 service area.

Requirements

- Any discharge to the sewers of Federally-regulated wastewaters from Sierra Plating and any successor first must be treated through BAT treatment or its equivalent.
- Compliance sampling points and monitoring requirements must be establish-ed and implemented in order to determine whether treatment is necessary at Carpenter.
- The operational and disposal procedures to ensure compliance with the metal finishing standards through the achievement of zero-discharge must be determined and set forth for Sierra Plating and Custom Powder Coating.

4.1 Treatment In-Place

EPA Region 9 uses two performance measures that together reflect the purpose of the various Federal categorical standards to bring about the nationwide use of model BAT treatment.

The first measure is BAT treatment across the industrial inventory. The Federal standards for each Federally-regulated industrial category were based on the statistical performance of model BAT treatment as it is separately defined for each category. For metal finishing, BAT treatment is metals precipitation, settling and solids removal, and if necessary, cyanide destruction and chromium reduction. The following industries in the Placer County SMD-1 service area, identified during this evaluation by EPA as Federally-regulated users, were not all found to comply with their Federal standards either through BAT treatment or through facility configurations and practices to keep from discharging to the sewers.

- Advanced Metal Finishing - This metal finishing job-shop complies with the Federal new source metal finishing standards in 40 CFR 433 by not discharging any process-related wastewaters to the sewers. De-ionized water rinses minimize the build-up of salts. Drag-

out is captured in static rinses which are periodically wasted to an evaporator, with the evaporator sludges, spent anodizing solutions, spent dyes, and excess first-stage rinse waters hauled off-site for disposal as hazardous waste. Placer County should verify that operations do not involve any untreated discharge of metal finishing wastes to the sewer.

- Carpenter Advanced Ceramics - Bldg 1 - This specialty ceramics manufacturer qualifies as a new source metal finisher subject to the metal finishing standards in 40 CFR 433. Bldg 1 wastewaters from nickel plating, electroless nickel plating, acid etching, and hard grinding discharge without treatment to the sewers. No sample record exists as of yet so it cannot be determined if the Bldg 1 discharges comply with the Federal standards.

- Carpenter Advanced Ceramics - Bldg 2 - The Bldg 2 wastewaters from hard grinding, ultrasonic cleaning, final polishing, deburring, and dye penetrant testing discharge without treatment to the sewers. No sample record exists as of yet so it cannot be determined if the Bldg 2 discharges comply with the Federal standards.

- Coherent - Laser glass manufacturing is not regulated under any Federal rule. Coherent discharges glass polishing wash down and slurries through a solids removal treatment unit to one sewer connection and untreated cooling tower flush to another.

- Custom Powder Coating - This powder coating job-shop complies with the Federal new source metal finishing standards in 40 CFR 433 by not discharging any process waste-waters to the sewers. The phosphating and alkaline degreasing solutions and rinses evaporate in tank. The generation and disposal of spents has not been determined as of yet. Placer County must ensure that the operations do not involve any untreated discharge of metal finishing wastes to the sewer.

- Sierra Plating - This job-shop metal finishing shop discharges spent solutions and spent static rinses by pump and hose without treatment to a sink drain connection to the sewers. No sample record exists as of yet, so it cannot be determined if Sierra Plating complies with the Federal metal finishing standards for new sources in 40 CFR 433. However, it is unlikely that untreated electroplating wastewaters can comply with the Federal standards without treatment equivalent to or better than the model BAT treatment. Sierra Plating is expected to shut down and be sold. Placer County must ensure that the transference of ownership does not involve an untreated discharge of metal finishing wastes to the sewer.

- Vian Enterprises - Vibratory deburring wash down and non-destructive testing waste-waters are discharged to the sewers but these discharges are unregulated under the Federal metal finishing rule at facilities that also do not perform metal finishing on-site.

4.2 Comparison with Model IU Performance

The second measure, derived from statistical comparisons with the performance of model categorical industrial users, only applies to larger industrial user inventories.

Section 5

Industrial User Inventory

Pretreatment programs are required to develop a complete inventory of industrial users, as part of ensuring industrial user compliance. 40 CFR 403.8(b,f1iii,f2i).

5.0 Summary

Placer County has not identified for regulation its significant industrial users ("SIUs"), categorical industrial users ("CIUs"), and zero-discharging CIUs who would be subject to Federal standards if they discharged. Placer County has not established procedures to identify and maintain its inventory of industrial users. The permit application for the current NPDES permit did not list any of the major industrial users by name, SIC code, and industrial activity. See Table 6 for a list of identified SIUs. See Table 7 for a definition of SIU.

Requirement

- Placer County must field verify its industrial user inventory and institute formal documented procedures to continually identify additions, deletions and changes.
- Placer County must identify the SIUs, CIUs, and zero-discharging CIUs in its inventory and begin annual reporting on their compliance status.
- Placer County must amend it permit application to include the list of SIUs.

Recommendation

- Placer County should maintain its industrial user inventory by non-domestic wastewater discharge point, with each discharge point characterized by Federal point source category, annual average flow rate, type of wastewater, and owner or operator.

5.1 Permit Application

The WDRs that are currently in effect were based on Placer County's December 24, 1996 permit application. The permit application did not list any of the major contributing facilities, defined in the instructions as the industries that have or could have "significant impact on a municipal wastewater treatment facility or the effluent", specifically industries with large flows or toxic material in their discharges. By this definition, because of the toxics, Sierra Plating, Carpenter Advanced Ceramics, and Coherent all should have been identified.

Section 5 – Industrial User Inventory

5.2 Inventory Completeness

Placer County has not identified, visited, or permitted all of its commercial and industrial users in its sewer service area and EPA could not produce a completed inventory during this performance evaluation. The following four characteristics would be considered by EPA as good indications of a complete inventory. First, the inventory should include commercial sources, such as dentist, supermarkets, restaurants, and automobile repair shops, none of which would be expected to pose a significant risk to the treatment works. Second, the inventory should include commercial and industrial dischargers of less than 25,000 gpd designated by SIC code. Third, the inventory should include "zero-dischargers" that would be categorical if they discharged. Fourth, the industrial users with multiple non-domestic discharges to the sewers should be identified and permitted by separate discharge points. All of these modifications to the basic definition in 40 CFR 403.3(t) of an SIU are good indications of the successful identification of the potential threats to its treatment works.

5.3 Inventory Classifications

The Placer County inventory must delineate which of its industrial users qualify as SIUs. Approved pretreatment programs are required to report the compliance status of each SIU in an annual report usually due by the following February 28. EPA identified the seven SIUs listed in Table 6 during this performance evaluation but did not perform a comprehensive review of the industrial user inventory. In particular, the following types of industrial users need to be evaluated to determine whether they qualify as SIUs.

- Metal Finishing - Industrial users qualify as metal finishers subject to the Federal standards in 40 CFR 433 by performing electroplating, electroless plating, chemical coating, etching, anodizing, or printed circuit board manufacturing, irrespective of whether these six core operations discharge to the sewers. Chemical coating includes coloring, phosphating, conversion coating, and passivation. Etching includes pickling, acid preparation, descaling, desmut, and bright dipping. The standards apply to discharges from the core operations and from 40 other associated operations listed in 40 CFR 433.10(a), in particular, cleaning, deburring, painting, depainting, degreasing, and polishing. These might include fabrication shops, tool and dye, and machine shops.

- Metals Forming - Industrial users qualify under various Federal standards in 40 CFR 467, 468, 471, or 420, by rolling, drawing, extruding, forging, or atomizing metals, both ferrous and non-ferrous.

- Aluminum- or Manganese-Bearing Discharges - These might include glass polishers, metal finishers, metals formers, radiator shops, and water purification facilities.

- High Flow Discharges Over 25,000 gpd and High Loading Discharges - These might include food processing plants and industrial laundries.

Section 5 – Industrial User Inventory

5.4 Zero-Discharging Categorical Industrial Users

Placer County should institute the good practice of identifying and permitting industrial users that would qualify as CIUs if they discharged their Federally-regulated process-related wastewaters to the sewers (*Advanced Metal Finishing, Custom Powder Coating*). In essence these industrial users comply with their Federal standards by maintaining the steps necessary to prevent the discharge of process-related wastewaters to the sewers. Including zero-discharging CIUs in the inventory ensures the local regulatory control over industrial users who would violate their Clean Water Act requirements and could endanger the operations of the treatment works if they discharged to the sewers.

Section 6

Industrial User Permits

Pretreatment programs are required to issue permits with standards and limits, sampling locations, self-monitoring requirements, and a 5-year or less expiration, as part of ensuring industrial user compliance. 40 CFR 403.8(b,f1iii,f2i).

6.0 Summary

Placer County does not have a permitting program. Permits will have to be issued once the local limits are determined, the SIUs are identified, and the Federal standards are applied.

Requirements

- Each SIU must be issued a valid permit authorizing discharge to the sewers.
- Each permit issued to an SIU must explicitly state all applicable Federal standards, national prohibitions, and local limits, as well as the self-monitoring and reporting requirements, and sampling locations.
- Each permit issued to an SIU must explicitly state when the permit will expire and must not exceed five years in duration.

Recommendations

- Permits should be issued with the applicable Federal standards and national prohibitions, and then reissued to include local limits once they are re-determined.
- Each permit issued to an SIU should list all standards, limits, self-monitoring and analytical requirements on one page, and the sampling location(s) on a site map.
- The information in the permit applications as well as any other information gathered to issue the permits, such as statistical analyses of sample representativeness, should be field verified and documented in fact sheets prepared for each SIU.

6.1 Permit Accuracy

Placer County will have to issue permits with the applicable Federal standards and national prohibitions to all of its SIUs, and reissue them with local limits once they are re-determined. Fact sheets should be prepared to document the information and decisions behind the permit

provisions, such as Federal category, sample point, pollutants of concern, representative sampling, and self-certifications in lieu of self-monitoring.

- Coherent - A permit must be issued to apply the national prohibitions and, once they are re-determined, the local limits. Local limits are expected for aluminum, manganese, and phosphorus since the Placer County SMD-1 wastewater treatment plant is expected to be limited for these pollutants. Sampling protocols set in the permit should reflect the variabilities from plant operations and treatment associated with the sample point for Bldg 1 and from cooling tower blowdown schedules associated with the sample point for Bldg 2. The permit would have to be reissued with isolated sample points for each building once Coherent moves its operations out of Bldgs 1-3 into Bldg 4.

- Carpenter Advanced Ceramics - Sample boxes for Bldgs 1 and 2 must first be installed. Then a permit must be issued to apply the national prohibitions and the Federal metal finishing standards for new sources in 40 CFR 433.17, as adjusted for dilution from domestic sewage. The permit will have to be reissued once the local limits are re-determined, in particular because they are expected to include limits for aluminum.

- Zero-Discharging CIUs - "Zero-discharge permits should be issued to any industries found to comply with Federal categorical pretreatment standards by not discharging Federally-regulated process-related wastewaters. A zero-discharge permit should explicitly prohibit the discharge of the Federally-regulated wastewaters and require the industry to certify every six months to not discharging in lieu of self-monitoring. A zero-discharge permit would strengthen enforce-ment efforts against the illegal dumping to the sewer because the establishment of violation depends only on whether a discharge occurred and not on surveillance sampling and the difficult arguments surround the representativeness of sampling.

6.2 Permit Clarity

All of the permits issued to the SIUs should clearly communicate the applicable Federal standards, national prohibitions, local limits, sample type, sampling frequency, self-certifications in lieu of self-monitoring, analytical test methods and the associated detection limits, and, if necessary, the flow and production rates behind the Federal standards. All of this information can be presented in table form on a single page of the permit with one line per pollutant. The compliance sampling locations also could be clearly delineated on a site map annotated with a description of the location. Each permit should clearly state the effective duration and the procedures for re-applying.

Section 7

Monitoring, Self-Monitoring, and Inspections

Pretreatment programs, as part of ensuring industrial user compliance [40 CFR 403.8(b)], are required to:

- Cause industrial users to self-monitoring at least twice per year unless the program samples for them [40 CFR 403.8(f1iii), 403.12(e1,g10)];
- Inspect industrial users at least once per year;
- Sample industrial users at least once per year if they self-monitor or twice per year if they are not required to self-monitor [40 CFR 403.8(f2v), 403.12(i2,e1,g10)];
- Ensure that all sampling and self-monitoring is representative of the reporting period [40 CFR 403.12(g3)].

7.0 Summary

Placer County does not perform routine inspections and monitoring, and has not required the SIUs to self-monitor. The types, methods and frequencies of the SIU inspections, monitoring and self-monitoring are meant to reflect the statistical demands of representative sampling.

Requirements

- The self-monitoring records for each SIU must be complete in the number and type of samples, for all pollutants of concern. Frequencies could increase beyond twice per year through statistical determinations of the sampling schedules that would account for all sources of day-to-day variabilities in wastewater generation, treatment and discharge.

- Industrial users must be inspected annually to verify the permit conditions and to document findings. The inspection could also be used to satisfy the Federal requirement to obtain one sample per year for all of the regulated pollutants, and to make an independent determination of self-certified compliance.

- A representative sampling point must be established for each non-domestic discharge.

Recommendations

- Inspection reports should include an analysis that the sampling is representative of both the sampling day and reporting period. They should also document the findings that establish the sewer discharge permit conditions and prompt any necessary revisions or enforcement actions.

- All self-certifications in lieu of self-monitoring should be explicitly stated in the permits.

Section 8

Enforcement and Compliance Assistance

Pretreatment programs, as part of ensuring industrial user compliance are required to enforce their permits following an enforcement response plan, and to publish annual significant non-compliance lists [40 CFR 403.8(b,f1ii,f2vii,f5)].

8.0 Summary

The Federal regulations do not define how to determine a program's success in enforcing permit limits. However, an evaluation of enforcement is premature since the SIU inventory is not certain and their permits have yet to be issued.

Requirements

- Approved pretreatment programs are required to develop and follow an enforcement response plan that specifies the actions, and their time frames, that the district will take in response to each type of industrial user permit violation.

Recommendations

- None.

Figure 1

Placer County SMD-1 Wastewater Treatment Plant
Schematic of the Wastewater Treatment

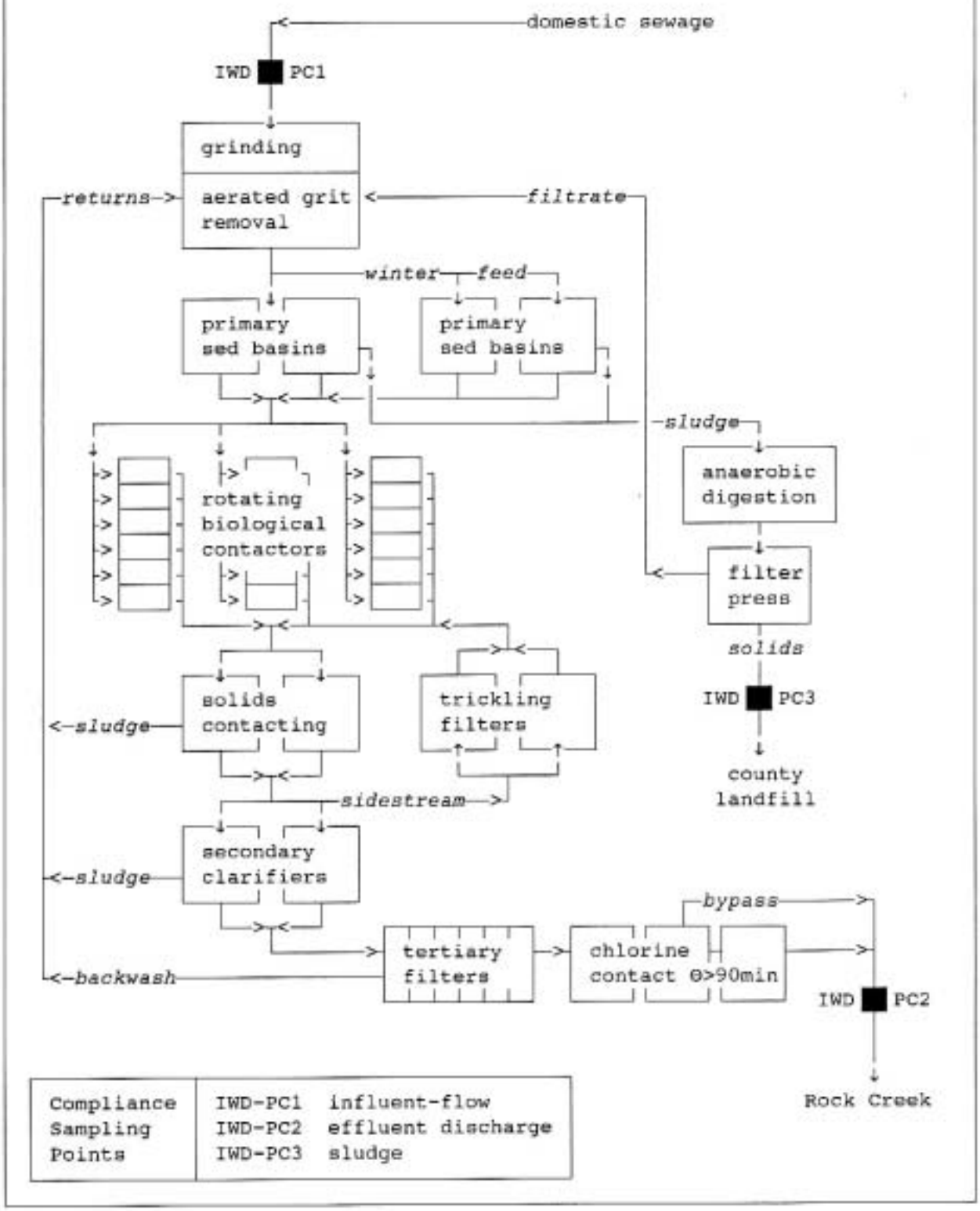

Table 1

Placer County SMD-1 Wastewater Quality - Non-Toxics

Pollutants (mg/l) Jan-2002 to Sep-2003	Influent Mean	Influent 5th%	Influent 99th%	*Effluent Mean	*Effluent 99th%	Violation Rate Sample	Violation Rate Period
Flow (mgd)	1.95	1.11	3.25	1.88		ns	0/19
Biochem Oxy Demand	299	153	505	4.03	8.46	0/394	0/19
Total Susp Solids	267	154	425	3.90	12.9	0/411	0/19
Chlorine Residual				<0.01	0.01	0/575	ns
Oil & Grease				<5.0	<5.0	0/18	ns
Ammonia-N			27	5.08	15.3	ns	ns
Ammonia-N @ R2				1.24	4.96	ns	ns
Unionized Ammonia-N				0.030	0.176	→ ns	ns
Unionized NH3-N @ R2				0.008	0.041	→4/69	ns
Nitrates-N			<1.0	13.3	30.6	→ ns	ns
Phosphates-P			16.0	5.14	15.2	ns	ns
Fluoride				0.14	0.37	ns	ns
MBAS-surfactants				0.10	0.24	0/28	0/19
Total Disslvd Solids			220	338	466	ns	ns
Hardness			79	185	289	ns	ns
Sulfates			24	40	66	ns	ns
Chlorides			41	54	68	ns	ns
Sodium			35	41	55	ns	ns
EC (µmhos/cm2)			470	638	791	ns	ns

Statistical Measures	Median	95%th	99th%	Max	Sample	Period
Acute Toxicity	pass	pass	pass	pass	0/6	0/6
Chronic (3-species)			pass		0/1	0/1
pH-minimum (s.u.)		<6.5 for 10 min		6.2	→ 2/273	ns
pH-maximum (s.u.)				7.5	0/273	ns

* Effluent results for salts/nutrients include data from 2002 CTR report

→ Computed Statistical Probability of Exceeding Limits

limits	mean	std dev	probability		percent
NO3-N (d-max)	μ = 13.32	σ = 7.416	α(10)	= 0.6725	67%
un-NH3 (d-max)	μ = 18.54	σ = 18.85	α(25)	= 0.3659	37%
un-NH3 @ R2 (d-max)	μ = 7.807	σ = 14.17	α(25)	= 0.1129	11%
ammonia (d-max)	μ = 5.08	σ = 4.39	α(13.3)	= 0.0307	3%
ammonia (mo-avg)	μ = 5.177	σ = 3.066	α(2.37)	= 0.6800	68%
pH (lower Limit)	μ = na	σ = na	α(6.5)	= 0.0073	1%

Table 2

Placer County SMD-1 WWTP Wastewater Quality - Inorganic Toxics

Pollutants (µg/l) Jan-2002 to Jan-2003	Influent Mean	*Effluent Mean	99th%	Removal Rate	→Expected WQS D-max	4d-avg
Aluminum	820.	101.4	391.4	~88	200	-
Antimony		0.31	0.53		6	*14
Arsenic	<1.0	0.43	0.70	-	50	150
Barium		4.82	8.44		-	-
Beryllium		<0.02	<0.02		-	-
Cadmium	<1.0	0.05	0.09	-	5	2.2
Chromium	<5.0	0.25	0.74	-	50	11
Copper	22.5	2.00	4.56	~91%	5.0	7.0
Cyanide-total	<5.0				22	5.2
Iron	1425.	79.2	123.6	~94%	300	-
Lead	10.4	0.73	1.64	~93%	15	2.5
Manganese	87.0	34.7	61.5	~93%	50	-
Mercury	<0.2	0.004	0.010	-	2	0.05
Nickel	5.1	2.62	4.28	~48%	100	52
Selenium	<1.0	0.15	0.22	-	50	5.0
Silver	1.3	0.07	0.33	~94%	100	-
Zinc	110.0	27.3	43.4	~75%	120	120

* Effluent results for toxics include data from 2002 CTR report
→ California Toxics Rule, 40 CFR 131.38, and Dept of Health Services MCLs
Expected metals standards based on average hardness of 50 mg/l.
* Long-term averages or medians of unspecified duration

→ Computed Statistical Probability of Exceeding Limits

limits	mean	std dev	probability		percent
aluminum	μ = 101.4	σ = 126.1	α(200)	= 0.2171	22%
copper	μ = 2.002	σ = 1.097	α(5.0)	= 0.0032	<1%
lead	μ = 0.730	σ = 0.392	α(2.5)	= 0.0000	<1%
manganese	μ = 34.74	σ = 11.49	α(50)	= 0.0921	9%
zinc	μ = 27.30	σ = 6.895	α(120)	= 0.0000	<1%

Table 3

Placer County SMD-1 WWTP Wastewater Quality - Toxic Organics and Biocides

Pollutants (µg/l) Jan-2002 to Jan-2003	EPA Results	*Effluent Mean	99th%	→Expected WQS D-max	4d-avg
alachlor		0.80	3.93	2	-
atrazine		0.56	2.44	3	-
bis(2-ethylhexyl)phthalate		2.13	3.22	4	*1.8
bromodichloromethane	<1.0	0.71	1.46	80	*0.56
chlorobenzene	<1.0	0.045	0.069	70	*680
chloroform	3.5	6.81	14.1	80	-
chloromethane	<1.0	0.054	0.154	-	-
2,4-D		0.41	0.75	70	-
4,4'-DDE		0.020	0.070	-	*0.00059
dalapon		2.79	14.5	200	-
1,4-dichlorobenzene	<1.0	0.18	0.27	5	-
diethyl phthalate		<2.00	2.84	-	*2700
dinoseb		0.27	0.86	7	-
ædioxin 2,3,7,8-TCDD (pg/l)		0.88	4.08	30	*0.013
endosulfan I		0.023	0.123	-	0.056
endosulfan II		0.24	1.49	-	0.056
æheptachlor epoxide		0.019	0.106	0.01	*0.0001
methylene chloride	<5.0	1.18	3.15	5	*4.7
methyl-tert-butyl ether	<1.0	0.71	3.08	5	-
molinate		0.78	2.76	20	-
æPCB aroclor-1016		0.13	0.30	0.5	*0.00017
æPCB aroclor-1221		1.22	7.06	0.5	*0.00017
æPCB aroclor-1260		0.096	0.119	0.5	*0.00017
pentachlorophenol		0.16	0.19	1	*0.28
silvex 2,4,5-TP		0.34	0.74	50	-
toluene	<1.0	0.18	0.51	150	*6800

* Effluent results for toxics include data from 2002 CTR report
  All samples below DLs for all other VOAs, semi-VOAs, pesticides, dioxins
→ California Toxics Rule, 40 CFR 131.38, and Dept of Health Services MCLs
* Long-term averages or medians of unspecified duration

→ Computed Statistical Probability of Exceeding Limits

limits	mean	std dev	probability		percent
alachlor	μ = 0.800	σ = 1.342	$\alpha(2)$	= 0.1857	~20%
atrazine	μ = 0.560	σ = 0.805	$\alpha(3)$	= 0.0012	<1%
bis(2-ethylhex)phtha	μ = 2.126	σ = 0.468	$\alpha(1.8)$	= 0.7571	76%
bromodichloromethane	μ = 0.714	σ = 0.319	$\alpha(0.56)$	= 0.6855	69%
4,4'-DDE	μ = 0.0196	σ = 0.0215	$\alpha(0.00059)$	= 0.8120	~20%
endosulfan I	μ = 0.0232	σ = 0.0429	$\alpha(0.056)$	= 0.2221	~20%
endosulfan II	μ = 0.242	σ = 0.536	$\alpha(0.056)$	= 0.6353	~20%
MTBE	μ = 0.714	σ = 1.014	$\alpha(5)$	= 0.0000	<1%

æ Detected at least once - unknown probability since DL exceed WQS

Table 4

Placer County SMD-1 WWTP Sludge Quality

Pollutants Jan02 to Sep03	Fed Standards Ceiling	Fed Standards Reuse	Sludge Sampling (mg/kg*) EPA	Mean	99th%	Max	Viols/ Sample
arsenic	75	41	5.9				0/1
cadmium	85	39	<6.3				0/1
chromium	-	-	<68.8				ns
copper	4300	1500	343.8				0/1
lead	840	300	93.8				0/1
mercury	57	17	-				0/1
molybdenum	75	-	-				0/1
nickel	420	420	28.8				0/1
selenium	100	100	16.3				0/1
silver	-	-	56.9				ns
zinc	7500	2800	812.5				0/1
total toxic metals			1357.9				

EPA sample number – PC006
date – 05/08/03
type – grab sludge
location – IWD-PC3
moisture – 84%

* dry-weight basis
ns no standard

All self-monitoring was unusable for determining compliance

→ Computed Statistical Probability of Exceeding Limits

limits	mean	std dev	probability	percent
As (reuse)	μ = 5.160	σ = 11.08	$\alpha(41)$ = 0.0006	<1%

Table 5

Sampling Results - Placer County SMD-1 Wastewater Treatment Plant
May 8 and 14, 2003

Sample Number	PC004	PC013	PC005	SC013	SC014
Date	05/08/03	05/14/03	05/08/03	07/22/03	07/22/03
Type	24-hr	24-hr	24-hr	24-hr	grab
Location	Influent	Influent	Effluent	Effluent	Rock Crk
Point	IWD-PC1	IWD-PC1	IWD-PC2	IWD-PC2	IWD-R2
Units	mg/l	mg/l	mg/l	mg/l	mg/l
aluminum	0.810	0.830	0.093		
arsenic	<0.0010	<0.0010	<0.0010		
cadmium	<0.0010	<0.0010	<0.0010		
chromium	<0.0050	<0.0050	<0.0050		
copper	0.0160	0.0290	0.0050		
cyanide-total		<0.0050	0.0050		
iron	2.0	0.85	0.110	0.066	0.230
lead	0.0130	0.0077	<0.0050		
manganese	0.089	0.085	0.044		
mercury	<0.00020	<0.00020	<0.00020		
nickel	0.0056	0.0046	0.0042		
selenium	<0.0010	<0.0010	<0.0010		
silver	<0.0010	0.0021	<0.0010		
zinc	0.110	0.110	0.031		
acetone	0.0840				
chloroform	0.0052		0.0035		
1,4-dichlorobenzene	0.0020				
MTBE	0.0026				
toluene	0.0012				
xylenes	0.0016				
benzoic acid		0.054			
benzyl alcohol		0.020			
bis(2-ethylhex)phth		0.045			
diethyl phthalate		0.0069			
4-methylphenol		0.017			
other tox organics	<0.0010	<0.0010	<0.0010		
ammonia-N	27	27	4.1	7.5	1.0
chloride	(44)	38	(52)	57	25
hardness	82	76	160	130	73
nitrate-N	<1.0	<1.0	(14.5)	18	7.3
total phosphate-P	16.5	<5.0	15.0	3.7 o/	1.4 o/
sodium	33	36	32	44	21
sulfate	(23)	24	(42)	32	16
TDS		220	310	410	170
EC (umohs/cm)		470	590	620	290

All samples collected, kept in custody, and delivered to the laboratory by Greg V. Arthur. Samples analyzed by Sequoia Analytical. Documentation including chain of custody and quality control results are attached.

() invalid result o/ ortho-phosphate as P

Table 6

Placer County SMD-1 Service Area 2003 Inventory
(Not complete - based solely on EPA observations)

SIGNIFICANT INDUSTRIAL USERS ("SIUs")	FLOW in gpd	PRETREATMENT-IN-PLACE	FEDERAL CATEGORY	BAT
Advanced Metal Finish	0	EVAP HAUL	433zero	BAT+
Carpenter Bldg-1	unk	/S	433psns	BAT-
Carpenter Bldg-2	unk	CENT /S	433psns	BAT-
Coherent Bldgs-1,3,4	12000	EQ FLOC COAG P/S EQ DH2O	non-cat	n/a
Coherent Bldg-2	unk	-	non-cat	n/a
Custom Powder Coating	0	HAUL	433zero	BAT+
Sierra Plating	unk	-	433psns	BAT-

Federal Category and Best Available Technology

433zero	Metal Finishing - zero discharge
433psns	Metal Finishing - new source discharger
non-cat	Non-Categorical SIU
BAT	Best-Available-Technology treatment (equivalent to the model treatment used in setting the Federal standards)
BAT+	Exceeds BAT treatment
BAT-	Falls short of BAT treatment
n/a	No applicable Fed standards that are that are based on model treatment

Treatment-In-Place

CENT	Centrifuge
COAG	Coagulation
DH2O	Dewatering
EQ	Equalization
EVAP	Evaporation
FLOC	Flocculation
HAUL	Disposal Offsite
P/	Metals Precip
/S	Gravity Settling

Table 7

Pretreatment Program Definitions

Pass-Through: A non-domestic discharge which exits the treatment works in quantities or concentrations which, alone or in conjunction with other non-domestic discharges, *is a cause of violation* of any requirement of the NPDES permit, 40 CFR 403.3(n).

Interference: A non-domestic discharge, including excessive or slug loads of conventional pollutants, which inhibits or disrupts the treatment with other non-domestic discharges, inhibits or disrupts the treatment works, its treatment processes or operations, or its sludge processes, use or disposal, *thereby causing a violation* of any requirement of the NPDES permit or any Federal, state or local sludge regulation, 40 CFR 403.3(i).

Local Limits: Specific limits developed and enacted by the local authority, designed to prevent pass-through, interference, sludge contamination, and potential threats to worker health and safety, and to ensure renewed and continued compliance with the NPDES permit or sludge use or disposal practices, 40 CFR 403.5(c).

Significant Industrial User: A non-domestic source that either (1) is subject to Federal categorical pretreatment standards, or (2) discharges an average of more than 25,000 gpd of process wastewater, or (3) makes up more than 5% of the flow or organic capacity of the treatment plant, or (4) is determined by the local authority or State to have a reasonable potential to adversely effect the treatment works, 40 CFR 403.3(t).