

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION IX

75 Hawthorne Street San Francisco, CA 94105

August 14, 2006

In Reply Refer To: WTR-7

Guy Gunion Da-Tru Company 71 Glenn Way #2 San Carlos, California 94070

Re: April 3, 2006 Clean Water Act Inspection

Dear Mr. Gunion:

Enclosed is the August 14, 2006 report for our April 3 inspection of Da-Tru Company. Please submit a short response to the findings in Sections 2 through 5 of this report, to EPA, the South Bayside System Authority, and the Regional Water Quality Control Board, by **September 30, 2006**.

The main findings are summarized below:

- ¹ Da-Tru qualifies as a job-shop metal finisher subject to the Federal job-shop electroplating standards. SBSA correctly classified and permitted Da-Tru.
- 2 Wastewaters discharge untreated. Nevertheless, Da-Tru may achieve consistent compliance with its Federal standards because (1) the limited use of the re-plating line produces small pollutant loadings and (2) the limited application of the Federal standards to small job-shop metal finishers. Lead concentrations are high enough to warrant the application of a site-specific local limit.
- 3 Sampling is useable for determining compliance, representative of all discharges over the reporting period, as long as the uncontrolled final rinse is operated only on demand.

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

Sincerely,

Original signed by: Greg V. Arthur

Greg V. Arthur CWA Compliance Office

Enclosure

cc: Norman Domingo, SBSA

Michael Chee, RWQCB-Oakland



U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User: Da-Tru Company

71 Glenn Way #2, San Carlos, California 94070 40 CFR 413 Subpart B – Job-Shop Electroplating

Treatment Works: South Bayside System Authority

Regional Water Treatment Plant (NPDES Permit CA0038369)

Date of Inspection: April 3, 2006

Inspection Participants:

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

RWQCB-Oakland: None

SBSA: Michael Li, Water Quality Specialist, (650) 594-8411 ex139

Da-Tru: Guy Gunion, Owner, (650) 592-1507

Report Prepared By: Greg V. Arthur, Environmental Engineer

August 14, 2006

1.0 Scope and Purpose

On April 3, 2006, EPA, and the South Bayside System Authority ("SBSA") conducted a compliance evaluation inspection of the Da-Tru Company in San Carlos, 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.

Da-Tru is a significant industrial user ("SIU") within the SBSA sewer service area whose compliance was assessed as part of an on-going EPA evaluation of industrial users in EPA Region 9 by sector. The inspection participants are listed on the title page. Arthur conducted the inspection on April 3.

1.1 Process Description

Da-Tru is an aircraft bearing rework job-shop. The bearings are made of silver-plated steel. The rework operations involve machining, a cleaning lathe to remove existent plating, sizing, plastic media blasting, wax masking, re-plating, and pumice wax removal. The re-plating line comprises caustic activation, alkaline electrocleaning, cyanide-copper strike, cyanide-silver strike, cyanide-silver plating, cyanide-indium plating, and fluoroboric-lead plating. Da-Tru does not own the aircraft bearings that undergo metal finishing. No changes in configuration have been made to the metal finishing line since start-up in 1968. Da-Tru discharges its non-domestic wastewaters to the San Carlos domestic sewers through a single sewer connection designated in this report by permit number as IWD-030101. Domestic sewage discharges through a separate connection downstream of the industrial connection.

1.2 Facility SIC Code

Da-Tru is assigned the SIC code for the manufacturing and rebuilding of aircraft engines and parts (SIC 3724).

1.3 Facility Wastewater Sources

<u>Spent Solutions</u> – The imparted contamination from the processing of parts and the progress-sive drop in solution strength generally results in the generation of spent solutions. However, at Da-Tru, the re-plating solutions are regenerated strictly through addition, presumably because they lose enough through the drag-out rinses into the final overflow rinse.

<u>Rinses</u> – Da-Tru follows each of the re-plating tanks with separate first-stage static drag-out rinse buckets and a second-stage common running rinse bucket installed in a work sink. The

drag-out rinses are returned to the solution tanks as make-up. The second-stage common running rinse operates while there are parts processing and with the rinsing wastewater overflowing into the work sink. The spent drag-out rinses are replaced with city water as make-up. There are no other wastewaters generated by Da-Tru. *See* Appendix 1.

<u>Residuals</u> – Da-Tru does not treat drag-out rinses or circulate solutions through canisters to extend the useful life. As a result, Da-Tru does not generate residuals such as treatment unit sludges, spent canister filters, ion exchange regenerant, or metals plate-out.

1.4 Facility Process Wastewater Composition

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

1.5 Facility Process Wastewater Treatment

Da-Tru discharges the second-stage rinse wastewaters to the sewers without treatment. The connection to the sewer from the final rinse tank is designated in this report after the SBSA permit number as IWD-030101. The November 2002 permit application indicates that Da-Tru discharges an average of 500 gallons per day ("gpd") to the sewers. *See* Appendix 1.

1.6 POTW Legal Authorities

South Bayside System Authority – SBSA is a Joint Powers Authority comprised of the Cities of San Carlos, Belmont, Redwood City, and the West Bay Sanitary District, as member agencies. SBSA operates an EPA-approved pretreatment program as required by the State of California in the San Francisco RWQCB's Waste Discharge Requirements, No. R2-2001-012, reissued to SBSA in 2001 and serving as NPDES Permit No. CA0038369. As part of this, SBSA and the member agencies have established sewer use ordinances that apply to all industrial users in its sewer system. Under this authority, SBSA issued an industrial user permit to Da-Tru, No. 03-0101 covering the sewer discharge from IWD-030101.

1.7 Photo Documentation

No photos were taken during this inspection.

1.8 Sampling Record

All compliance samples are collected by SBSA from the final rinse, designated after the permit number as IWD-030101. *See* Appendix 3 for a summary of the 2004-2006 sampling.

2.0 Sewer Discharge Standards and Limits

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

Summary

The Federal standards in 40 CFR 413 for existing source job-shop metal finishers discharging less than 10,000 gallons per day apply to all process wastewater discharges from Da-Tru through IWD-030101. The SBSA permit correctly applied the Federal standards and local limits. The application of Federal standards, national prohibitions, and local limits was determined through visual inspection. *See* Appendix 2.

Requirements

None.

Recommendations

None.

2.1 Classification by Federal Point Source Category

Da-Tru qualifies as a job-shop metal finisher subject to the Federal job-shop electroplating standards for existing sources in 40 CFR 413 (<10,000 gallons per day). SBSA correctly classified Da-Tru. Federal standards are self-implementing which means they apply to regulated waste streams whether or not they are implemented in a local permit. The Federal rules in 40 CFR 403.6 define domestic sewage and non-contact wastewaters to be dilution waters.

New or Existing Sources – Da-Tru continues to be subject solely to the Federal standards for existing sources. Under the definitions in 40 CFR 403.3(k), a process constructed at an existing source job-shop metal finisher after August 31, 1982 is a new source (1) if it entirely replaces a process which caused a discharge from an existing source or (2) if it is substantially independent of the existing sources on-site. This means new source standards apply to the original installation of the metal finishing lines, rebuilt or moved lines, or existing lines converted to do new operations. This also means that the new source standards generally do not apply to the piecemeal replacement of tanks for maintenance in otherwise intact metal finishing lines, nor do they apply to treatment upgrades without altering production. The preamble to the final 1988 Federal rule states that the new source standards apply when "an existing source undertakes major construction that legitimately provides it with the opportunity to install the best and most efficient production process and wastewater treatment technologies" (Fed Register, Vol.53, No.200, October 17, 1988, p.40601). There have been no configuration changes in the re-plating line at Da-Tru since start-up in 1968.

2.2 Local Limits and National Prohibitions

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

Numerical Limits - The SBSA local limits for a number of toxic pollutants are expressed as concentration maximums but applied as needed by pollutant as annual mass averages comparable to the calculated average daily-mass loadings for the previous 12 months. The SBSA permit for Da-Tru advances annual mass average limits for only total cyanide. The SBSA permit lists numerical concentration limits for arsenic, chromium, copper, mercury, nickel, silver, zinc, phenolics, PAHS surfactants, carbon disulfide, petroleum oil & grease, and numerical measurement limits for pH, and temperature. However, in effect through sampling, SBSA only applies the local limits for pH, chromium, copper, nickel, silver, and zinc.

2.3 Federal Categorical Pretreatment Standards Existing Source Job-Shop Electroplating <10,000 gpd - 40 CFR 413

40 CFR 413 < 10kgpd	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CNa	TTO	
daily-maximum (mg/l)	1.2	-	ı	0.6	-	-	-	5.0	4.57	
four-day average (mg/l)	0.7	-	ı	0.4	-	-	-	2.7	ı	
stat conversion to mo-avgs	0.5	-	-	0.3	-	-	-	1.5	1	

<u>Applicability</u> - The Federal job-shop electroplating standards apply to job-shop metal finishers that do not own more than 50% of the parts processed and were in operation in their present configuration before the August 31, 1982 proposal date of the Federal metal finishing rule. This means the job-shop electroplating standards in 40 CFR 413.24(b)(f) for dischargers of less than 10,000 gallons per day apply to all of the process wastewater discharges at Da-Tru to the sewers through IWD-030101.

<u>Basis of the Standards</u> – The job-shop electroplating standards were based on a model pretreatment unit that comprises metals precipitation, settling, sludge removal, source control of toxic organics, and if necessary, cyanide destruction and chromium reduction. For dischargers of less than 10,000 gallons per day, the model pretreatment unit was applied only to process wastewaters bearing cadmium, lead, amenable cyanide, or total toxic organics. The best-available-technology standards were set where printed circuit board manufacturers and other job-shop metal finishers with model treatment operated at a long-term average and variability that achieved a compliance rate of 99% (1 in 100 chance of violation).

<u>Adjustments</u> – The Federal categorical pretreatment standards at IWD-030101 do not need to be adjusted to account for dilution or for dual Federal categories because all wastewaters through this compliance sampling point qualify as Federally-regulated under 40 CFR 413.

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

2.4 Federal Prohibitions

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

2.5 Point(s) of Compliance

The permit designates the final rinse bucket in the work sink as the compliance point (designated in this report as IWD-030101).

<u>Local Limits</u> - Local limits and the national prohibitions apply end-of-pipe to all non-domestic flows from Da-Tru. The sample point designated in this report as IWD-030101 is a suitable end-of-pipe sample point representative of the day-to-day non-domestic wastewater discharges.

<u>Federal Standards</u> - Federal categorical pretreatment standards apply end-of-process-after-treatment to all Federally-regulated discharges to the sewers. The sample point IWD-030101 is also a suitable end-of-process-after-treatment sample point representative of the day-to-day discharge of Federally-regulated wastewaters.

2.6 Compliance Sampling

The national prohibitions are instantaneous-maximums and are comparable to samples of any length including single grab samples. However, the site-specific local limits, as they are applied by pollutant, are mass loadings comparable to average loadings calculated from a year's worth of representative sampling of any length. Federal categorical pretreatment standards are daily-maximums comparable to 24-hour composite samples. The 24-hour composite samples can be replaced with single grabs or manually-composited grabs that are representative of the sampling day's discharge.

3.0 Compliance with Federal Standards

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

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

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

Summary

Da-Tru does not employ wastewater treatment equivalent to the models used in originally setting the Federal standards. Nevertheless without treatment, Da-Tru still may be able to achieve the consistent compliance expected of small job-shop metal finishers because the limited use of the re-plating line produces small pollutant loadings and because of the limited application of the Federal standards to small job-shop metal finishers. Sampling is useable for determining compliance, representative of all discharges over the reporting period, as long as the uncontrolled final rinse is operated only on demand. *See* Appendix 3.

Requirements

• Da-Tru must operate the final overflowing rinse on-demand.

Recommendations

- On-demand rinsing could incorporate either conductivity probe controls or worker activated switches or timers.
- Da-Tru should explain how the company is able to keep the re-plating line solutions from fouling since all spent drag-out returns to the solution tanks as make-up.

3.1 Sampling Results

The 2004-2006 sample records for Da-Tru collected by SBSA from the final rinse bucket consists of quarterly sampling. All metals and cyanide samples were manually composited grabs. It is understood but was not observed during this inspection that the final rinse is operated on-demand. If it is not on-demand, no determination can be made with certainty that the sample results are usable for determining compliance with the Federal standards since they may be diluted from excessive rinsing. Da-Tru is exempted from total toxic organics sampling because it operates under an approved solvent organics management plan, as set forth in 40 CFR 413. *See* item 5.0 of this report.

3.2 Best-Available-Technology Treatment

The sampling results indicate that Da-Tru, without treatment, nevertheless may be able to comply with its Federal standards for cadmium, lead, amenable cyanide, and toxic organics. All samples easily met all Federal standards at IWD-030101, with average and calculated 99th% peak concentrations of <0.010 and <0.020 mg/l cadmium, 0.085 and 0.390 mg/l lead, and 0.006 and 0.035 mg/l amenable cyanide. The levels were well above the detection limits in selected samples, especially for lead. Concentrations would be expected to rise if ondemand rinsing practices need to be implemented. So without verification of on-demand rinsing, it cannot be determined whether concentrations might increase enough to warrant treatment. Moreover, the return of drag-out as make-up means spent solutions are not generated for disposal nor regenerated for reuse. This will result in the build-up of salts and other contaminants in the solutions and eventually render the solutions unusable.

3.3 Dilution as a Substitute for Treatment

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

Da-Tru may meet both conditions of non-compliance since all Federally-regulated waters discharge untreated and the final rinse may discharge whether there are parts undergoing processing or not. It cannot be determined if BAT-equivalent treatment is necessary to consistently comply with the standards without ensuring the final rinse operates on-demand. Typical on-demand controls include make-up water values opened through conductivity-controlled probes or kick or knee plate switches.

3.4 Bypass Provision

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

There cannot be bypassing at Da-Tru since the Federally-regulated wastewater do not undergo BAT-equivalent treatment.

4.0 Compliance with Local Limits and National Prohibitions

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

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

Summary

The sample record indicates that Da-Tru, without pollutant controls, complies with all of its local limits for metals, cyanide, and pH. Future compliance is not a certainty because the concentrations could rise in response to any new implementation of on-demand rinsing. *See* Appendix 3. Also *see* Sections 3.0 and 5.0 of this report.

Requirements

• The SBSA permit must advance a site-specific local limit for lead.

Recommendations

None.

4.1 National Objectives

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

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

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

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

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

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

<u>Metals and Cyanide</u> – There were no violations of the site-specific mass loading local limits for cyanide. There were also no sample results exceeding the general unadjusted local limits for cadmium, chromium, copper, nickel, silver, and zinc. However, one sample exceeded the unadjusted local limit for lead, which means SBSA needs to establish a site-specific limit in its permit. *See* section 3.2 of this report.

Organics – There were no sample results for surfactants, methylene chloride, chloroform, perchloroethylene, benzene, carbon tetrachloride, carbon disulfide, toxic organics, or petroleum oil and grease because the SBSA permit did not apply site-specific or unadjusted local limits for these pollutants to the discharge from Da-Tru. Concentrations much over the detection limits of the toxic organics would not be expected to be generated by Da-Tru. These locally-regulated pollutants are effectively addressed through the continued certification authorized in 40 CFR 413 of a solvent management plan in lieu of the required self-monitoring for toxic organics.

4.4 Flammability

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

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

Sewer collection system interferences related to the formation of hydrogen sulfide and the resulting acidic disintegration of the sewers are not expected because the wastewaters discharged to the sewers are not high-strength in biodegradable organics, nor highly acidic. Sample results indicate the final rinse wastewaters are usually alkaline in nature.

5.0 Compliance with Federal Monitoring Requirements

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

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

Summary

The sample record for Da-Tru does not involve self-monitoring but rather consists only of monitoring conducted by SBSA. All of the SBSA monitoring is representative of the overall discharge of untreated wastewater from Da-Tru over the sampling day as well as over the six-month reporting period.

Requirements

• None.

Recommendations

• None.

Appendix 1 Da-Tru Company Schematic of the Wastewater Collection and Treatment no spent solutions caustic activation returns for make-up alk electroclean CN-copper strike CN-silver strike CN-silver plating CN-indium plating HF-lead plating city water make-up 1°drag-out rinses city water make-up. 2° overflow rinse work sink IWD # 050701 SBSA sewers ~500 gpd

Appendix 2 Sewer Discharge Standards and Limits Da-Tru Company @ IWD-030101

pollutants of concern (mg/l)	Fed categorian standards (d-max)		local limits Sconcentra (instant) (si	monitoring frequency IWD-030101		
arsenic	-	-	0.1	-	-	3
cadmium	1.2	0.7	0.04	-	-	quarterly
chromium	-	-	0.2	-	-	quarterly
copper	-	-	0.2	-	-	quarterly
lead	0.6	0.4	0.2	-	-	quarterly
mercury	-	-	0.002	-	-	3
nickel	-	-	0.06	-	-	quarterly
silver	-	-	0.1	-	-	quarterly
zinc	-	-	1.0	-	-	quarterly
phenolics	-	-	2.6	-	-	3
amenable cyanide	5.0	2.7	-	-	-	3
total cyanide	-	-	0.06	0.038	0.008	quarterly
PAHs surfactants	-	-	0.2	-	-	3
methylene chloride	-	-	0.07	-	-	4
chloroform	-	-	0.03	-	-	4
perchloroethylene	-	-	0.03	-	-	4
benzene	-	-	0.002	-	-	4
carbon tetrachloride	-	-	0.001	-	-	4
carbon disulfide	-	-	0.008	-	-	4
total toxic organics	4.57	-	-	-	-	4
oil and grease – petro	-	-	100	-	-	3
flow (gpd)	-	-	-	-	-	-
pH (s.u.)	-	-	6.0-12.5①	-	-	quarterly
explosivity	-	-	1 2	-	-	3
temperature (°F)	-	-	_	-	-	3

- ① National-prohibitions Closed-cup flash point <140°F and pH <5.0 su.
- ② Narrative prohibition against the introduction of flammable or explosive substances
- 3 As part of periodic priority pollutant scans in order to identify changes in discharge quality
- ① Twice per year solvent management plan self-certifications in lieu of self-monitoring
- ⑤ Site-specific concentration limits based on historical peak month concentrations
- © Loading limits based on historical average flow rates and highest local limit concentration

Appendix 3Da-Tru Company @ IWD-030101

January 2004 – February 2006

pollutants ②	effluent s	sampling re	esults	violation	n rate ①	sample	loading	
(µg/l)	mean	99th%	max	sample	4-day3 12-mo4		count	(lbs/yr)
cadmium	<10	<20	<20	0/9	0/21/4	-	9	_
chromium	30	180	200	0/9	-	-	9	-
copper	10	23	20	0/9	-	-	9	-
lead	85	390	400	6	0/21/4	-	9	-
nickel	10	54	60	0/9	-	-	9	-
silver	6	15	6	0/9	-	-	9	-
zinc	6	9	5	0/9	-	-	9	-
amenable cyanide	6	35	38	-	0/21/4	0/2	9	-
flow (gpd)	-	-	-	-	-	-	0	-
pH (s.u.)	9.1 ⑤	-	8.7-min 9.4 max	0/9			9	

- ① Violation rates cannot be determined with certainty unless the final rinse is operated on-demand.
- ② No sample results for the following pollutants of concern: arsenic, mercury, phenolics, surfactants, TTOs, oil & grease, explosivity, temperature
- 3 Four day-averages calculated by the rolling averaging of four consecutive samples
- ① Twelve-month average calculated by the rolling average of all samples from previous 12 months
- ⑤ pH median
- © Unknown compliance status since one sample exceeded the local limits but the permit does not set site-specific limits.