



City of Prescott
Pretreatment Program

Chapter 6: Compliance Monitoring

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Acronyms

| | |
|-------|---|
| ADEQ | Arizona Department of Environmental Quality |
| APP | Aquifer Protection Permit |
| CFR | Code of Federal Regulations |
| City | City of Prescott |
| kg | kilograms |
| IWDP | Industrial Wastewater Discharge Permit |
| MSDS | Material Data Safety Sheets |
| POC | Pollutants of Concern |
| POTW | Publicly Owned Treatment Works |
| USEPA | U.S. Environmental Protection Agency |
| VOCs | Volatile Organic Compounds |



6. Compliance Monitoring

As part of the General Pretreatment Regulations, Title 40 Code of Federal Regulations (CFR) Part 403.8(f)(2) requires that the City of Prescott (City) develop a compliance monitoring program that contains procedures to:

- Conduct site inspections at least once a year to independently verify information supplied by Industrial Users
- Sample and analyze effluent from Industrial Users at least once a year
- Receive and analyze self-monitoring reports and other notifications submitted by Industrial Users

The objective of the City's compliance monitoring program is to demonstrate Industrial Users compliance with pretreatment regulations and standards. Authority to conduct site inspections, surveillance, and monitoring is described in 40 CFR Part 403.8(f) and the City Code, Title II, Chapters 2-1-58 and 2-1-68. Analytical and sample collection procedures required to obtain accurate flow measurements and representative wastewater samples are described in City Code, Title II, Chapter 2-1-48.

6.1 Site Inspections

Site inspections allow the City's pretreatment staff to become familiar with businesses located within the sewer service area, provide a means of educating businesses about the pretreatment program, and establish an open dialog between business owners and the City. Site inspections are used to verify information provided by Industrial Users in self-monitoring reports and can also identify changes in the industrial processes that may affect the quality of wastewater discharges and associated Industrial Wastewater Discharge Permit (IWDP). A variety of items and activities may be observed during the site inspections: pretreatment equipment and procedures, operational processes, sampling equipment and procedures, and good housekeeping practices. An example of a Site Inspection Checklist is included in Appendix A.

Site inspections typically begin with an interview meeting with the facility manager, or authorized representative, to explain the purpose of the site inspection and learn of any changes in process or operations that could impact wastewater characteristics or discharge volume. The meeting is followed by a facility tour to observe operations, wastewater streams, sampling procedures, and chemical storage practices. Records reviewed as part of the site inspection may include: pretreatment equipment maintenance, employee training, hazardous waste disposal, required documents (e.g., spill prevention and control plan, slug control plans, material safety data sheets, MSDS), and compliance sampling field notes.

Items checked during site inspections may include the following:

- Sampling locations specified in the IWDP are adequate for the collection of a representative sample of the wastewater
- Sampling locations include all discharge from process and/or non-process wastewater streams
- Industrial User's sampling techniques meet requirements specified in the IWDP and yields representative samples
- Parameters specified in the IWDP are adequate to cover all pollutants of concern (POC) that may be discharged by the Industrial User
- Appropriate effluent limits are applied at the sampling location specified in the IWDP
- Pretreatment facilities are appropriately constructed, operated, and maintained
- Floor drains are protected from potential spill paths from operations or chemical storage areas
- Compliance records are complete and accurate

Industrial Users should be inspected at least once a year by the City's pretreatment staff. An increased frequency of oversight monitoring may be warranted depending on:

- Past performance and compliance by the Industrial User
- Flow and constituents of the Industrial User's discharge
- Extent and number of problems in the City's sanitary sewer treatment facilities which are the result of the Industrial User's discharge
- New or additional pretreatment standards and requirements
- Seasonal production schedules at the Industrial User's facility.

The City may choose to conduct site inspections with or without prior notification. Unscheduled inspections are typically performed in response to a complaint, emergency situation, or violation. It is recommended that prior to the site inspection, City staff review the Industrial User's files, including the facility's IWDP and permit application, previous enforcement actions, compliance history, plant layout, process and flow diagrams, and water/sewer usage records. Staff performing a pretreatment site inspection should present the facility staff with appropriate credentials showing that they are lawful

representatives of the City and authorized to perform monitoring activities. If entry to the facility is denied, the inspector should consult with the Public Works Director to assess if obtaining a search warrant is appropriate.

6.2 Wastewater Sampling

Sampling is performed to characterize wastewater discharged by Industrial Users and to verify results reported in Industrial Users' self-monitoring reports. Wastewater sampling will be primarily performed by Industrial Users; however, City staff may collect split samples at an Industrial User's discharge or perform sampling during non-routine monitoring. Sampling may be performed in conjunction with site inspections or as a separate activity.

The purpose of sampling is to evaluate compliance with applicable IWDP discharge limits. The frequency of sampling depends on the Industrial User's compliance record and potential to impact the Publicly Owned Treatment Works (POTW). At a minimum, sampling should be performed at least once per year. The wastewater samples must be analyzed for the parameters identified in the IWDP by an environmental laboratory licensed by the State of Arizona.

To conduct wastewater sampling of an Industrial User's discharge, City staff will:

- Obtain pre-cleaned sample containers from an analytical laboratory
- Follow specific method requirements for sample volumes, containers types, and preservations (listed in Table 1)
- Identify samples with the outfall identification listed on the IWDP, on sample container labels as well as on Chain-of-Custody forms
- Collect wastewater samples according to requirements listed in the IWDP (e.g., grab versus composite sample)
- Place sample containers for chemical analysis in ice-filled coolers immediately following collection, and keep samples between 2 to 6 degrees Celsius prior to and during transport to the analytical laboratory
- Package sample containers to avoid breakage during transport
- Maintain possession of the samples until the samples are submitted to the courier or laboratory under Chain-of-Custody forms, which document sample identification, date and time of sample collection, requested analytical parameters, and sampler's contact information and signature.

Upon receiving the sample cooler, the analytical laboratory will verify custody and the condition of the samples. The laboratory will notify the City's pretreatment program staff of any sample non-conformances (e.g., broken sample containers or improper preservation). Table 1 presents the required sample containers and preservatives for frequently requested wastewater parameters. The analytical laboratory should be contacted to verify container and preservation requirements.

Different types of samples collected during wastewater monitoring include: individual grab, laboratory-composited grab, field-composited grab, and time or flow-proportional composites. Sampling should follow the requirements listed in the IWDP. The most common sample type is the flow-proportional composite, which requires the use of an automatic sampler (i.e., ISCO sampler) and flow meter. Accurate flow measurements should be performed in association with all sample collection. Flow measurements will depend on the sampling location and can be obtained by ultrasonic water level sensors, flumes, or area/velocity probes. Field meters can be used to perform measurements such as pH or temperature, and should be calibrated per manufacture specifications.

Sampling equipment should be decontaminated between monitoring events using the following procedure:

- Rinse equipment immediately after sampling with potable water to remove particulates and gross contamination
- Wash equipment using a non-phosphate detergent solution, such as Alconox, with a scrub brush for five minutes
- Rinse equipment with distilled and/or deionized water for five minutes as a final rinse and allow to air dry.

Quality control samples can include trip blanks for volatile organic compounds (VOCs) analysis, field duplicates, and equipment rinsate blanks. Field duplicates are samples collected from the same location at the same time. One field duplicate should be collected for every 10 wastewater samples collected. Equipment rinsate blanks are collected by rinsing distilled and/or deionized water through sampling equipment after completion of equipment decontamination procedures. It is recommended that equipment rinsate blanks be collected at a frequency of one per every 10 field samples.

Personal protective equipment required during wastewater sampling may include:

- Nitrile and work gloves
- Safety glasses
- Reflective vest (if sampling manholes in street)

- Hearing protection (if required inside facility)
- Steel-toe work boots
- Hard hat (if working in street or if required inside facility)

Sampling equipment will depend on the sampling location and required parameters and may include:

- Confined space entry equipment, such as air monitor, ventilation blower, safety harness, retrieval tripod, and self-retracting shock absorbing lanyard
- Traffic safety equipment, such as signs, barricades, lighting, and traffic cones
- Flow meter
- pH or temperature meter
- Autosampler, batteries, tubing
- Sample coolers
- Safety cones and traffic barriers (if sampling in street)
- Manhole hook and mallet or sledgehammer (if sampling in manholes)
- Phosphate-free detergent (Alconox or equivalent)
- Deionized or distilled water
- Sample containers, labels, and chain-of-custody forms
- Paper towels, garbage, and ziplock bags
- Field log book

6.3 Industrial User Self-Monitoring Reports and Notifications

Wastewater monitoring results are described in reports prepared by the Industrial User and submitted to the City's pretreatment staff. The reports and notifications required are described in the City Code, Title II, Chapter 2-1-67 and include the following:

- **Baseline Monitoring Report:** Report by new Industrial Users and Industrial Users who fall under new Categorical Standards created or updated by the USEPA to document characteristics and flow of the wastewater to be discharged

- Compliance Schedule Progress Report: Report by Industrial Users operating under a compliance schedule, to document progress in meeting milestones set forth in the compliance schedule
- 90-Day Compliance Report: Report submitted 90-days after final compliance with pretreatment standards (or for new Industrial Users, starting to discharge to sewer system) to document characteristics and flow of the wastewater to be discharged
- Periodic Compliance Report: Reports (i.e., Self-Monitoring Reports) submitted at least semiannually describing wastewater sampling results and average/maximum daily flows for the reporting period.
- Report of Changed Conditions: Report submitted to document any significant condition (e.g., flow increase of 20 percent or discharge of previously unreported pollutants) that may impact characteristic or volume of wastewater
- Report of Potential Problems: Report submitted to document accidental discharges, slug discharges or non-routine discharges that may pose potential problem for treatment facilities
- Notification of Violation/Repeat Sampling: Notification submitted to document resampled results when original wastewater sampling result violated an IWDP condition and triggered resampling requirement
- Notification of Discharge of Hazardous Waste: Notification submitted by Industrial Users that discharge more than 50 kilograms (kg) of hazardous waste to the sewer system to document the hazardous material and the mass expected to be discharged over the next 12 months
- Upset Notification: Notification submitted to document discharge and cause of noncompliance, length of noncompliance, and corrective actions taken to prevent future upsets
- Bypass Notification: Notification submitted by Industrial Users that know in advance of a need for a bypass

All reports and notifications will include the certification statement found in City Code, Title II, Chapter 2-1-67-12 stating that the authorized representative of the Industrial User attests that the information presented in the report or notification is true. Many of the reports and notifications are required to be submitted within a specific timeframe, as listed in the City Code, Title II, Chapter 2-1-67. Reports and notifications are deemed to have been submitted to the City on the date postmarked. Scanned pdf files of reports may also be sent to the City via e-mail in addition to mailing the hard copy report.

6.4 Data Management

The City's Pretreatment Program is responsible for organizing and maintaining data, reports, notifications, correspondence, permits, and other information pertaining to the pretreatment program. Due to the potential volume of information, it is essential that data management procedures are established. Information included in the general Pretreatment Program files may consist of:

- Aquifer Protection Permit (APP)
- Pretreatment Program Deliverable submitted to ADEQ
- Industrial Wastewater Survey (e.g., Master Industrial User List, copies of the survey forms, and summary of survey results)
- Legal authority (i.e., City Code, Title II, Chapter 2-1)
- Template for site inspections
- Sampling information (e.g., standard operating procedures, laboratory contracts, chain-of-custodies)
- ADEQ correspondence
- Miscellaneous information

Information and data stored for each individual Industrial User may include:

- IWDP application and final, signed IWDP
- Self-monitoring compliance reports
- Oversight monitoring reports (e.g., Site Inspection Reports and analytical results from sampling events)
- Documentation of enforcement activities (e.g., Warning Notices and Notice of Violations)
- Administrative orders
- Correspondence between Industrial User and City

**Table 1
Sample Container and Preservation Requirements**

| Parameter | Analytical Methods* | Sample Container | Preservation | Holding Time |
|---------------------------|---------------------|------------------|--|---|
| Inorganics | | | | |
| Metals | USEPA 6020 | 500 ml poly | 4±2°C and HNO ₃ to pH<2 | 6 months |
| Mercury | USEPA 7470 | 500 ml poly | 4±2°C and HNO ₃ to pH<2 | 28 days |
| Fluoride | USEPA 340.2 | 500 ml poly | 4±2°C | 28 days |
| Cyanide | SM4500-CN | 500 ml poly | 4±2°C and NaOH to pH>12 | 14 days |
| Nitrate/nitrite | USEPA 353.2 | 500 ml poly | 4±2°C and HNO ₃ to pH<2 | 28 days |
| Ammonia | USEPA 350.1 | 500 ml poly | 4±2°C and HNO ₃ to pH<2 | 28 days |
| Total Kjeldahl Nitrogen | USEPA 351.4 | 500 ml poly | 4±2°C and HNO ₃ to pH<2 | 28 days |
| Biochemical Oxygen Demand | USEPA 405.1 | 1 L poly | 4±2°C | 48 hours |
| Chemical Oxygen Demand | USEPA 410.1 | 500 ml poly | 4±2°C and H ₂ SO ₄ to pH<2 | 28 days |
| Total Dissolved Solids | USEPA 160.1 | 500 ml poly | 4±2°C | 7 days |
| Total Suspended Solids | USEPA 160.2 | 500 ml poly | 4±2°C | 7 days |
| Alkalinity | USEPA 350.1 | 500 ml poly | 4±2°C | 14 days |
| pH | USEPA 9040 | 250 ml | 4±2°C | Immediately |
| Flashpoint | USEPA 1010 | 250 ml | 4±2°C | 28 days |
| Organics | | | | |
| Oil and Grease | USEPA 1664 | 1 L | 4±2°C and HCl to pH<2 | 28 days |
| Volatile Organics | USEPA 8260 | 3 x 40 ml VOAs | 4±2°C and HCl to pH<2 | 14 days |
| Semivolatile Organics | USEPA 8270 | 2 x 1 L glass | 4±2°C | 7 days to extraction; 40 days to analysis |

Notes:

* = Or equivalent analytical method

HCl = hydrochloric acid

H₂SO₄ = Sulfuric Acid

NaOH = sodium hydroxide

USEPA = U.S. Environmental Protection Agency

HNO₃ = Nitric Acid

poly = polyethylene container

SM = Standard Methods for Examination of Water and Wastewater

Appendix A

Example Site Inspection Report Form



**City of Prescott
Public Works Department
Industrial User Inspection Checklist**

Date: _____

Inspector: _____

Type of Inspection: _____

INDUSTRY INFORMATION

| | |
|-----------------------------------|--|
| Business Name: | |
| Mailing Address: | |
| Facility Address: | |
| Facility Contact/Title: | |
| Contact Telephone No. | |
| Contact E-mail: | |
| Signatory Authority*/Title: | |
| Signatory Authority Telephone No: | |
| Signatory Authority E-Mail: | |

* Signatory Authority is the authorized representative of industrial discharger per City Code, Title II, Chapter 2-1-9.

INTERVIEW MEETING

| Observations | Comments |
|--|-----------------|
| Water flow/process schematic available | |
| Plumbing/process flow schematic follows current operations | |
| Description of each process or product line | |
| Description of each process discharge | |
| Total number of employees per shift: | |
| Is operation continuous throughout the year? | |
| Anticipated changes in process or production rates? | |

FACILITIES

| Observations | Yes | No | Comments |
|--|-----|----|----------|
| General housekeeping evident | | | |
| Plumbing/process flow schematic follows current operations | | | |
| Process water isolated from domestic discharges | | | |
| Batch or continuous wastewater discharge? | | | |
| Discharge sampling point(s) adequate and accessible | | | |
| Adequate sampling equipment available | | | |
| Adequate flow metering device present and operating | | | |
| Floor drains identified (and isolated from potential spills) | | | |
| Storm sewer system identified | | | |
| Pretreatment facilities present | | | |
| Grease traps/interceptors present | | | |
| Grit traps, sand/oil separators, solids interceptors present | | | |
| Chemical/fluid storage areas present and identified | | | |
| Waste oil and/or waste solvent storage facilities on-site | | | |
| Any pending or proposed plans affecting facilities | | | |
| Additional Notes | | | |

OPERATIONS

| Observations | Yes | No | Comments |
|---|-----|----|----------|
| Appropriate sampling procedures in place and staff trained | | | |
| Pretreatment facilities operating properly and efficiently | | | |
| Grease trap/interceptor functional and cleaned regularly | | | |
| Grit traps functional and utilized properly | | | |
| Sand/oil separators, solids interceptors functional and maintained | | | |
| Chemical/fluid storage with secondary containment, floor drains in vicinity plugged | | | |
| Floor drains protected/covered from leaks | | | |
| Slug Control Plan existing and in effect | | | |
| SPCC plan existing and in effect | | | |
| Adequate solids handling procedures utilized | | | |
| Waste oil/solvents disposal methods acceptable | | | |
| Stormwater system utilized appropriately | | | |
| Pollution Prevention Activities in place | | | |
| Does facility generate any hazardous waste? | | | |
| Operational problems reported to the City | | | |
| Additional Notes | | | |

MISCELLANEOUS

| Observations | Yes | No | Comments |
|--|------------|-----------|-----------------|
| Inventory of chemicals utilized available | | | |
| Pollutants in direct contact with wastewater discharge identified | | | |
| Pollutants not in direct contact with wastewater discharge identified | | | |
| Compliant with self-monitoring requirements | | | |
| TTO/TTOMP requirements | | | |
| Correct sampling procedures performed | | | |
| Hazard Communications Program implemented | | | |
| Pretreatment equipment maintenance records existing and available | | | |
| Pretreatment records (self-monitoring reports, analytical results) available and organized | | | |
| Best Management Practices (BMPs) in place | | | |
| Additional Notes | | | |