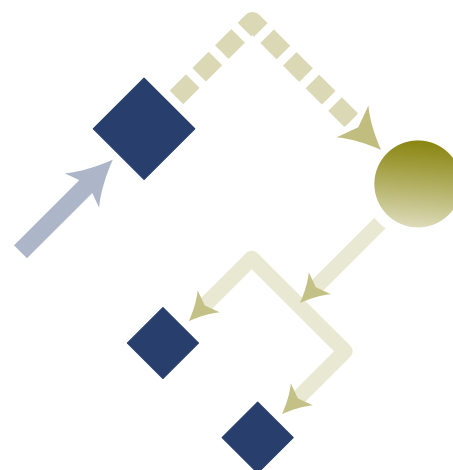


# Guidelines for Industrial Wastewater Reuse

*Planning & Implementing an Onsite Industrial Wastewater Reuse System in the City of San José*



For owners, operators, and environmental managers of facilities in San José





## **Guidelines for Industrial Wastewater Reuse**

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*Environmental Services Department  
and  
Planning, Building & Code Enforcement Department*

It should be noted that the ideas presented in these Guidelines are not intended as an endorsement by the City of San José or San Jose/Santa Clara Water Pollution Control Plant of any particular method, process or product. They are suggestions for your consideration.



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## Abbreviations

### BAAQMD

Bay Area Air Quality Management  
District

### BMP

Best Management Practice

### Building Division

Building Division of the City of  
San José's Department of  
Planning, Building and Code  
Enforcement

### CCR

California Code of Regulations

### CFR

Code of Federal Regulations

### City

City of San José

### ESD

City of San José's Environmental  
Services Department

### IAPMO

International Association of  
Plumbing & Mechanical Officials

### NPDES permit

National Pollutant Discharge  
Elimination System permit,  
issued by the San Francisco Bay  
Regional Water Quality Control  
Board

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## Abbreviations (cont'd)

### **O&M**

Operation & Maintenance

### **OSHA**

Occupational Safety and Health Administration

### **PBCE**

City of San José's Department of Planning, Building and Code Enforcement

### **PFD**

Process Flow Diagram

### **Plant**

San José/Santa Clara Water Pollution Control Plant

### **POTW**

Publicly Owned Treatment Works

### **RO**

Reverse Osmosis

### **STP fee**

Sewage Treatment Plant connection fee

### **SBWR**

South Bay Water Recycling

### **SMR**

Self Monitoring Report

### **TDS**

Total Dissolved Solids

### **TOC**

Total Organic Carbon

### **UPC**

Uniform Plumbing Code

### **WET**

Water Efficient Technologies

## Units of Measure

### **gpd**

gallons per day

### **mgd**

million gallons per day

### **mg/l**

milligrams per liter

## Definitions

### **Domestic Sewage**

The liquid and water-borne wastes derived from the ordinary living processes, free from industrial wastes. (Uniform Plumbing Code (UPC) Section 206.0. 1997 edition)

### **Effluent**

Water, reused water, recycled water or wastewater exiting a process.

### **Environmental Services Department (ESD) Supplemental Information**

Project documentation assembled for submittal to ESD to support application for an Industrial Wastewater Discharge Permit or permit amendment.

### **Industrial Reuse**

The reuse of industrial process wastewater or other previously used water, excluding domestic wastewater, in an industrial process.

### **Industrial Waste**

Any and all liquid or waterborne waste from industrial or commercial processes, except domestic sewage (UPC Section 211.0. 1997 edition).

### **Influent**

Water, reused water, recycled water or wastewater entering a process.

### **Monitoring**

Self-monitoring, sampling, reporting, notification and record-keeping requirements, including an identification of the pollutants to be monitored, sampling location, sampling frequency, and sample type, based on the applicable general pretreatment standards in part 403 of 40 CFR, categorical pretreatment standards, local limits, and State and local law.

### **Onsite Reuse**

The use of any wastewater or previously used water on the site where it is generated.

### **Pre-treatment**

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works (POTW). The reduction or alteration may be obtained by physical, chemical or biological processes, process changes or by other means, except as prohibited by 40 CFR 403.6(d). Appropriate pretreatment technology includes control equipment, such as equalization tanks or facilities, for protection against surges or slug loadings that might interfere with or otherwise be incompatible with the POTW. However, where wastewater from a regulated process is mixed in an equalization facility with unregulated wastewater or with wastewater from another regulated process, the effluent from the equalization facility must meet an adjusted pretreatment limit calculated in accordance with 40 CFR 403.6(e).

### **Process Reuse**

Same as Industrial Reuse.

### **Recycle**

The beneficial use of municipal wastewater after treatment at a central POTW. The term "recycled water" has the same meaning as "reclaimed water" as defined in Appendix J of the Uniform Plumbing Code (UPC) 1997 edition.

### **Reuse**

The use of any wastewater or previously used water not including domestic waste, without discharge to a sewer or treatment at a POTW.

# Background

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**T**he purpose of this document is to offer guidance to industries on how to plan and implement an onsite industrial wastewater reduction and reuse project within the City of San José. This document provides information on the City's requirements, permitting and approval process from the conceptual planning phase to the post construction phase. These requirements are necessary to protect public health, safety, air and water supplies. Companies interested in designing and implementing an onsite industrial wastewater reuse system must consider the requirements specified herein, as well as any local, state, and federal regulations. The requirements in this document are derived from references listed in Appendix A, as well as specific references listed in footnotes.

The City of San José (City) is the lead agency for ensuring compliance with the San José/Santa Clara Water Pollution Control Plant's (Plant's) National Pollutant Discharge Elimination System (NPDES) permit requirements for wastewater discharges. The Plant discharges at the southern end of the South San Francisco Bay into a salt-water marsh habitat that supports two endangered species. Due to concerns over the environmental impact of the Plant's discharge to the salt-water marsh habitat, the permit includes requirements to regulate the Plant's discharge flow rate.

To reduce discharge to the South San Francisco Bay, the City employs several strategies:

- The City recycles treated wastewater from the Plant via the South Bay Water Recycling (SBWR) program. The City mandates<sup>1</sup> new developments in San José to plumb for use of SBWR water for landscape irrigation.
- The City works with residential customers through indoor water conservation programs, including incentives to install water conservation devices like ultra low-flush toilets.
- The City may<sup>2</sup> require industries to investigate onsite industrial wastewater reduction and reuse.

The City encourages onsite industrial wastewater reuse in the high-tech industry because companies such as semiconductor, computer disk, disk drive, and printed circuit board manufacturers account for approximately 85% of the permitted industrial wastewater discharged into the Bay. Reuse of industrial wastewater onsite has numerous benefits, including but not limited to:

- Lower sanitary discharge fees and lower Sewage Treatment Plant (STP) connection fees due to reduced discharge volume to the Plant
- Lower utility cost due to reduced water usage
- Allows for onsite expansion without the need to increase existing water supply line
- Allows for onsite expansion without the need for expanding existing wastewater treatment systems
- Conservation of potable water supplies
- Enhanced public image
- Receive financial rebates for implementing Water Efficient Technologies (WET)

<sup>1</sup> In accordance with the San José Municipal Code, Chapter 15.10 and Chapter 15.11

<sup>2</sup> In accordance with the San José Municipal Code, Chapter 15.14.

# 1 Project Planning and Pre-Approval

## Reuse Options

---

The first step in planning your project is to determine how and where process water can be reused at your facility.

**T**ypical opportunities for reuse of process water at an industrial facility might include makeup water for cooling towers and pump seals; feedwater for boilers, scrubbers, and ultra-pure water treatment systems; process rinsewater; manufacturing process water; landscape irrigation; and other non-potable uses.

The process flow diagram in Figure 1 is an example of a feasible pattern of water supply and reuse in the high-tech industry. Included in this example are several possible reuse alternatives:

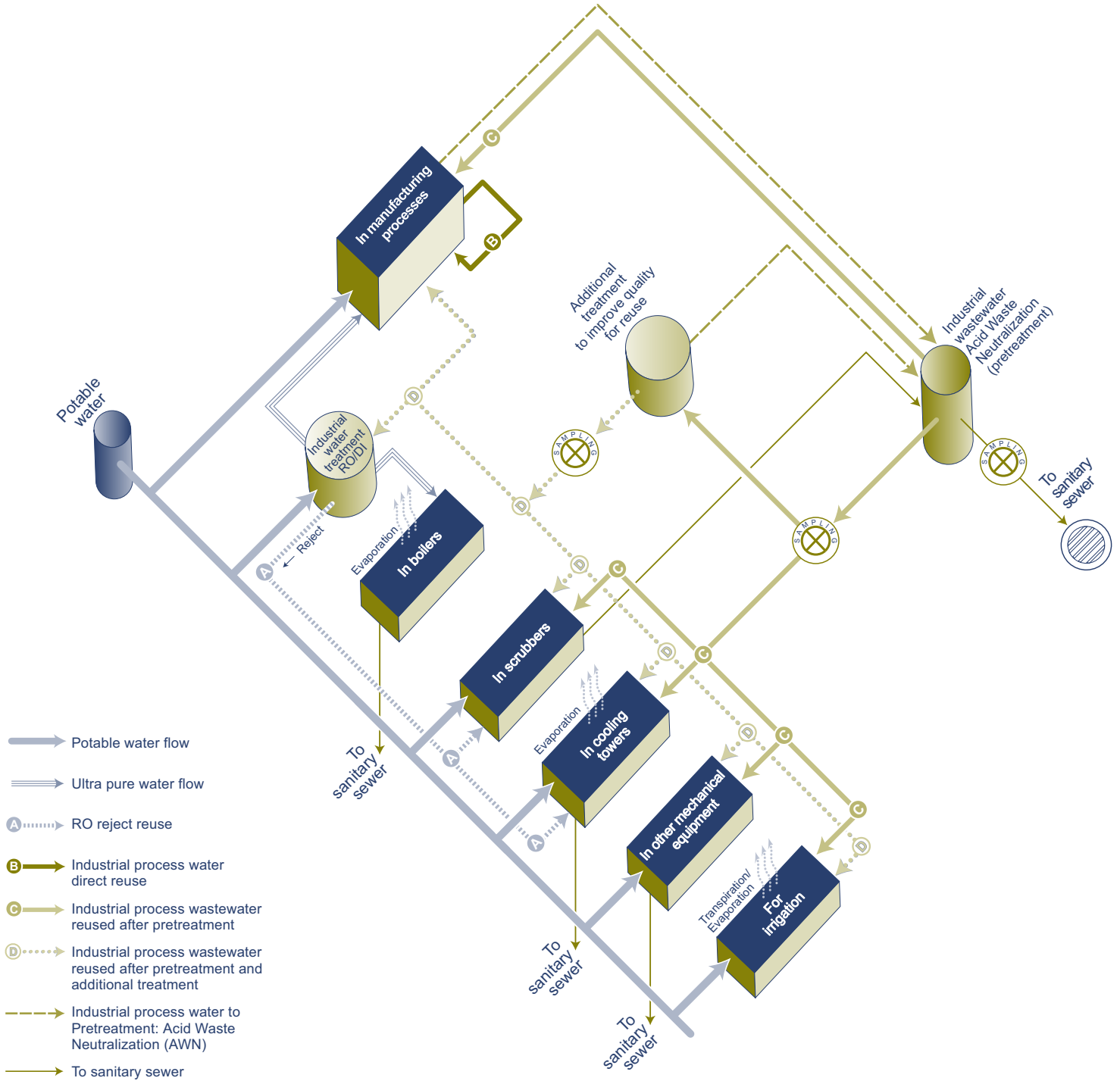
- A Reverse osmosis (RO) reject reuse.** For example, RO reject could be used in scrubbers or cooling towers.
- B Industrial wastewater direct reuse.** For example, final metal cleaning rinsewater could be used for initial rinses in a metal cleaning process.
- C Industrial wastewater reuse after pretreatment and monitoring but prior to being discharged to the sanitary sewer.** For example, metal cleaning rinsewater could be used as scrubber feedwater after pretreatment and monitoring.
- D Industrial wastewater reuse after pretreatment and additional treatment to improve quality.** For example, pretreated wastewater could be used as cooling tower makeup after additional treatment such as activated carbon adsorption.

You are responsible for determining the appropriate reuse option for your facility and evaluating the feasibility of your project. In evaluating your onsite reuse alternatives, consider all possibilities throughout your facility as well as the use of recycled water.



# Figure 1: Onsite Industrial Wastewater Reuse Options

An example of a feasible pattern of water supply and typical reuse at an industrial facility.



## Reuse Feasibility

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The following criteria can be used to determine the acceptability of an industrial wastewater for onsite reuse:

### Reusing Industrial Wastewater

#### Back into the originating process

Industrial process wastewater may be reused in the manufacturing process where it originated without treatment, assuming that it meets your process requirements.

#### In cooling towers and scrubbers

Industrial process wastewater may be reused in cooling towers, scrubbers, and other production processes if it meets the water quality requirements imposed for discharge to the municipal sewer as specified in the Industrial Waste Discharge Regulations, San José Municipal Code, Chapter 15.14. For scrubbers and cooling tower reuse projects, a sample point must be installed immediately prior to introduction into the scrubbers and cooling towers. The City's Environmental Services Department (ESD) will determine a wastewater sampling program to monitor compliance of the reuse water.

For reuse in cooling towers and scrubbers, you must submit a certification statement that air emissions will not exceed air permit requirements due to industrial wastewater reuse.<sup>3</sup>

#### For irrigation

Industrial process wastewater may be reused for irrigation only if that wastewater meets Safe Drinking Water Standards<sup>4</sup> in accordance with CCR Title 17.

### Reusing reverse osmosis (RO) reject

Reverse osmosis (RO) reject may be reused without treatment assuming it meets your process requirements.

## Pre-Approval

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After you have identified a reuse option and developed a preliminary design concept for your industrial wastewater reuse system, ESD staff can meet with you to provide an initial review and guide you through the formal review process. If you are an existing facility, ESD will also work with you to identify potential financial incentive rebates for your project under our Water Efficient Technologies (WET) program. Reuse projects are typically good candidates for this program, which offers up to \$50,000 per project based upon flow reduction and project costs. However, it is important that you apply for the WET program and receive pre-approval before starting construction on your reuse project. There is no charge for the ESD review. Upon completion of the initial consultation with ESD, you can begin the formal process of submitting plans for review and approval, and obtaining any required permits.

<sup>3</sup> Although ESD does not have the authority to enforce air regulations, ESD will verify that you have included air emissions-related information in your application package.

<sup>4</sup> California Code of Regulations (CCR), Title 17, *State Water Code Requirements for Protection of Potable Water Supplies*; 40 Code of Federal Regulations (CFR), Part 141, *National Primary Drinking Water Regulations*.

# 2

## Plan Submittal & Review, Permitting & Approval Process

All required permits and approvals must be obtained from PBCE prior to the start of construction.

Implementation of any onsite industrial wastewater reuse system is subject to approvals by the City's ESD and Planning, Building and Code Enforcement (PBCE) departments. The process normally involves submitting plans and supporting documents, and obtaining certain required permits and approvals from both departments prior to the start of construction, as well as after construction is complete. Each department performs separate reviews and permit approvals. First, ESD will review and approve your submittal package, provided it meets ESD's requirements. Then, PBCE will review and approve your submittal package, provided it meets PBCE's requirements.

The processes are further described below.

## Permit Application Package Requirements

Your industrial wastewater reuse project must be designed in accordance with the latest approved Uniform Plumbing Code (UPC) and all applicable City codes, policies, and guidelines. Upon receiving, reviewing and approving your project application package, PBCE may issue a Plumbing, Building, and/or Electrical permit. The appropriate permit application(s) and fee(s) should be selected after discussion of the project with a representative of PBCE. ESD may also issue you a new or amended Industrial Wastewater Discharge permit (a permit fee may apply). You must include the following information and supporting documentation with your application package:

! Ensure that a registered landscape architect, mechanical engineer, or civil engineer stamps all drawings/plans as needed.

### Building Division Submittal Package Requirements

#### Permit applications

As required by PBCE & ESD

#### General Project drawings

(e.g., Site Plan)

#### Plumbing Plans

Isometric, velocities, materials, listings

#### Civil/Structural/Electrical Plans

Prepare all record drawings to show the proposed onsite industrial wastewater reuse system for plan check review and approval. Include all changes in the work or departures from the original drawings in subsequent revisions for review and approval.

#### Detail Description of Reuse Project

A written description of the overall reuse project

Flow and Water Quality Monitoring

- Identify and explain the purpose of all monitoring tools used to effectively control water quality/volume of wastewater proposed for reuse. These tools may take the form of flowrates, flow ratios, conductivity, TDS concentrations, resistivity, pH readings, or other comparable criteria. Include in the explanation the significance of monitoring the particular variable as it applies to reuse. Identify the location of the sample point and the type of sampling and monitoring equipment.

#### Inventory of Chemical Additives

- List of all chemical additives used in your industrial process. (You can reference your Hazardous Materials Management Plan or your Industrial Wastewater Discharge Permit application.) The list should indicate the process areas where the chemicals are used as well as the quantities of chemicals used. List the chemicals by chemical name or formula, if available. If proprietary chemicals or mixtures are used, indicate the components or characteristics. Important characteristics include the percent total solids concentration, the dissolved inorganic solids concentration (conductivity), the concentration of volatile components, and the presence of hazardous components and strong odors.

#### Water Profile

- Provide a profile of pollutant concentrations of the proposed wastewater to be discharged to the sewer system. Provide detailed descriptions and references of the processes used to determine these concentrations, or have someone available for on-site review if this information is confidential.

### Additional Building Division Submittal Package Requirements

For onsite industrial wastewater reuse system, the following additional requirements are to be incorporated into the above detailed drawings and documentation:

#### **Cross-connections and Backflow Prevention**

Install backflow preventers at all potable water meters. Cross-connections between potable water piping and industrial wastewater reuse piping are not allowed. In accordance with CCR Title 17, Division 1, Chapter 5, Section 7605, you must conduct an annual backflow preventer or cross-connection inspection if both a potable water system and an “auxiliary” non-potable (e.g., industrial reuse) water system are operated on the same site.

#### **Pipe Identification**

Identify and mark all industrial wastewater reuse piping using a system consistent with the normal practice of your industry. All reuse piping must be accessible and visible (e.g., overhead, in a trench) to inspect for leaks.

#### **Backup Water Supply**

Critical wastewater reuse systems are normally equipped with an automatically activated backup supply of potable water. If this is the case, provide protection of the potable supply using an air-gap type backflow prevention system on the potable source connection, in accordance with CCR Title 17, Division 1, Chapter 5, Section 7604. Consideration should be given to the use of recycled water for backup.

#### **Drift Eliminators**

If reusing industrial wastewater in cooling towers, it is required that cooling towers be equipped with drift eliminators.

#### **Irrigation Reuse**

If reusing industrial wastewater for irrigation, you must implement suitable landscaping and operational practices to avoid runoff, ponding, and windblown spray. Limit irrigation to the site of the industrial user only. Appropriate grading of the irrigated areas will help control runoff and ponding. Careful positioning of the irrigated areas will help avoid overspray of site boundaries, drinking fountains, or picnic areas.

## Permit Application Package Review By ESD

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ESD will perform the initial review based on the information provided with your permit application package and based on the checklist in Appendix B (ESD Supplemental Information).

The submitted plans will be reviewed for feasibility and conformance with all applicable codes, regulations, policies, and guidelines identified in the following references:

- City of San José, *Industrial Waste Discharge Regulations*, San José Municipal Code, Chapter 15.14
- South Bay Water Recycling, *Rules and Regulations For Design and Operation of On-Site Recycled Facilities*, revised November 2001

ESD will also determine if a new or amended Industrial Wastewater Discharge Permit will be required for your project. (For more information on this requirement, refer to Section 3 “Post-Construction Permitting Requirements” on page 9 of this document.)

Please note that even if regulatory agencies or Local Authorities (e.g., the City) perform a plan review, the permit applicant is still responsible for meeting all applicable requirements. Compliance with every item presented here does not guarantee that plans will be approved. Regulations and policies also might change, and some sites might require special provisions.

Once the project meets all ESD requirements, ESD will sign and stamp your plans as approved. The Building Division will begin its review and approval process only after ESD has completed its review and approval.

### **If your project involves the use of SBWR recycled water...**

You must also obtain a Recycled Water User Permit. SBWR permit processing procedures are independent from the building permit and wastewater discharge permit process. Approval of the SBWR permit does not have to occur prior to project construction. You may obtain applications for these permits by calling (408) 277-3671.

## Permit Application Package Review By PBCE


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Review by PBCE is necessary since most reuse projects generally involve the installation or modification of plumbing, and often involve construction or modifications to buildings. Reviews are based on the information provided in your submittal package and the checklist in Appendix C.

The Building Division will review the plans for building, plumbing, and electrical code compliance, and identify any inaccuracies, deficiencies, or missing information. Building Division staff will check submitted plans for conformance with applicable codes and regulations. For industrial wastewater reuse projects, these codes will include the following:

- *Uniform Plumbing Code*, International Association of Plumbing & Mechanical Officials (IAPMO)
- *California Plumbing Code*
- *Municipal Plumbing Code*

The Building Division will then return the permit application package to you along with a request for revisions letter which identifies any necessary revisions or additional information needed to complete the plan review process. The revisions letter will include consolidated comments from all departments involved in the plan review process. Once you respond to these comments, the process is repeated again until all City requirements are met. The Building Division will verify each applicable Department’s approval prior to issuing Building or Plumbing permits for your reuse project.

 It is important to remember that you must apply for and receive applicable Plumbing, Building, and Electrical permits prior to the start of construction of your reuse project.

Please note that even if regulatory agencies or Local Authorities (e.g., the City) perform a plan review, the permit applicant is still responsible for meeting all applicable requirements. Compliance with every item presented here does not guarantee that plans will be approved. Regulations and policies also might change, and some sites might require special provisions.

## Permit Approval & Issuance

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The Building Division will issue all applicable permits after review and approval of the complete permit application package, and verification of approval by ESD, the Fire Department, and any other applicable City agencies. Only after this point may construction begin on your reuse project.

# 3

## Post-Construction Permitting Requirements

Upon completing construction of your reuse project, you must obtain an Occupancy Permit and an Industrial Wastewater Discharge Permit from PBCE and ESD, respectively.

**Y**ou must apply for and receive an occupancy permit and an industrial wastewater discharge permit prior to operation of your new reuse water system. The occupancy permit verifies that the building or structure has been inspected for compliance with applicable building codes and regulations and is ready for occupation and use. The industrial wastewater discharge permit verifies that your facility has been inspected and is permitted to discharge industrial process water to the sanitary sewer system under the conditions stipulated on your discharge permit based on local, state, and federal codes and regulations.

### Occupancy Permit

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To obtain an Occupancy Permit, you must notify the Building Division upon construction completion of your project to schedule a final inspection. A Building Division official will review Record Drawings or “As-builts” and do a final inspection to determine if your project complies with the Building Division Permit prior to issuing an “Occupancy Permit.” The final certificate of occupancy will contain the following information:

- Building permit number
- Building address
- Name and address of the owner
- Description of the portion of the building for which the certificate is issued
- A statement describing the portion of the building that has been inspected for compliance with the applicable requirements
- Name of the building official

However, prior to scheduling the final inspection with the Building Division, you must first obtain an Industrial Wastewater Discharge Permit from ESD.

### Industrial Wastewater Discharge Permit

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You must receive a new or amended Industrial Wastewater Discharge Permit from ESD **prior** to operating your new reuse water project.

As part of the ESD review process, you will be advised if a new Industrial Wastewater Permit or an amendment to an existing permit is required for your reuse project. In some cases, you may be allowed to continue operating under your current permit if ESD determines a permit amendment is not necessary. In such case, you will receive a letter from ESD exempting you from a permit amendment.

**If your reuse project is for an existing permitted industrial facility:**

You must submit a new Industrial Wastewater Discharge Permit Application to the Source Control section of ESD (a permit fee and site inspection may apply). ESD will review the application to determine if the reuse project requires changes to any portion of your existing permit. The following sections of your permit may be amended if deemed necessary:

- Section A – Certification Statement
- Section B – Company Information

- Section C – Water Usage and Discharge
- Section E – Building and Plumbing Layout, Flow Diagrams

**If your project is part of a new development/construction:**

You must submit an Industrial Wastewater Discharge Permit Application to the Source Control section of ESD at the same time an application for a building permit is filed. (A permit fee and site inspection applies.) ESD will review the application and conduct a site inspection to verify information provided in your permit application.

***You must submit the following information before ESD can issue a new or amended Industrial Wastewater Discharge Permit:***

- Record drawings or “As-builts”
- An Operation and Maintenance Manual (See Appendix D for requirements for this manual)
- A Water Balance Flowchart (See Figure 2 for an example of a typical water balance flowchart.)



You must prepare water balance calculations and a flow diagram for your reuse project. Account for all water supply inputs to the facility, quantify internal recycle flows, and quantify all outflows, including discharges to the sewer, evaporation losses, drift losses, and consumptive use losses (e.g., irrigation) in gallons per day.

After review and approval of these submittals, ESD will issue a new or amended Industrial Wastewater Discharge Permit, provided all other applicable conditions for discharge are met.

## Monitoring Requirements

As a condition of your Industrial Wastewater Discharge Permit, you must conduct specific monitoring and sampling to ensure compliance with all federal, state, and local regulations. ESD will determine the specific monitoring requirements and locations on a case-by-case basis as part of the permit issuance process. The monitoring equipment may consist of one or more of the following monitor types:

- On-line conductivity or resistivity
- Total Organic Carbon (TOC)
- Online metal-specific
- pH
- Non-resettable flow metering

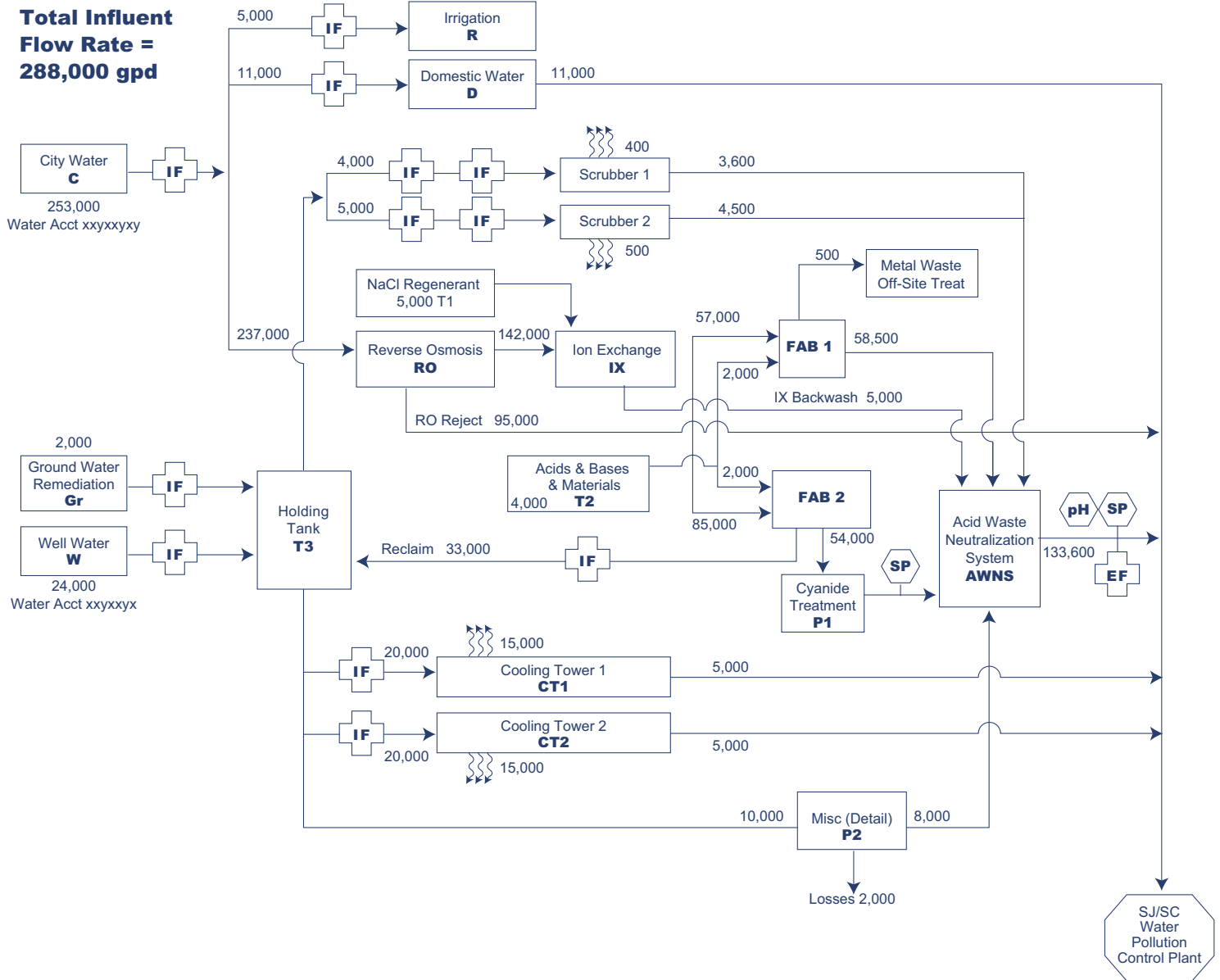
## Reporting Requirements

You must submit self-monitoring reports (SMR) if you are a permitted discharger. The frequency and location(s) of sampling, and parameters to be tested will be incorporated into your discharge permit.



# Figure 2: Sample Water Balance Flow Chart

## Facility (XYZ, Inc.) Block Flow Diagram



### LEGEND

<b>EF</b> Effluent Flowmeter	<b>P</b> Auxiliary Process (non-manufacturing) treatment. (Bottle washing, etc.)	<b>pH</b> pH monitor	<i>All numbers are in gallons per day (gpd)</i>
<b>FAB</b> Manufacturing Process		<b>SP</b> Sample Point	
<b>IF</b> Influent Flowmeter		<b>T</b> Tank	
		<b>Evaporation</b> (wavy arrow symbol)	

## References

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- California Code of Regulations (CCR) Title 17, *State Water Code requirements for protection of potable water supplies*.
- CCR Title 22, *State Department of Health Services requirements regulating recycled water*.
- 29 Code of Federal Regulations (CFR) 1910, *OSHA limits on workplace air<sup>5</sup> contaminants*.
- 40 CFR 61, *National Emissions Standards for Hazardous Air<sup>6</sup> Pollutants*.
- 40 CFR 141, *National Primary Drinking Water Regulations*.
- Bay Area Air Quality Management District (BAAQMD) limits on emission of air<sup>7</sup> pollutants, including odors.
- South Bay Water Recycling, Memorandum Subtask 3.2a; *Identify Industrial Customers*, February 1995.
- South Bay Water Recycling, *Rules and Regulations For Design and Operation of On-Site Recycled Water Facilities*, revised November 2001.
- *Industrial Waste Discharge Regulations*, San José Municipal Code, Chapter 15.14.
- *Uniform Plumbing Code*, International Association of Plumbing & Mechanical Officials (IAPMO).
- *California Plumbing Code*.
- City of San José, *Municipal Plumbing Code*.

<sup>5</sup> Although ESD does not have the authority to enforce air regulations, ESD will verify that you have included air emissions-related information in your submittal.

<sup>6</sup> Same as footnote 5.

<sup>7</sup> Same as footnote 5.

# ESD Plan Review Checklist for Reuse Projects

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## Supplemental Information

This checklist will be used by ESD to determine if an Industrial Wastewater Discharge Permit or amendment is required for your project. To ensure timely review and approval of your permit, make sure your submittal/design includes the following:

- A completed Industrial Wastewater Discharge Permit
- A process flow diagram drawing submittal and supporting information
- A water balance flowchart, along with a list of flow and water quality monitoring points
- A list of chemical additives
- Meets all the applicable local, state, and federal reuse water quality requirements
- Documentation to show compliance with Bay Area Air Quality Management District standards for air emissions
- Provides for adequate continuous monitoring equipment to help ensure compliance with Industrial Wastewater Discharge Permit requirements
- A water quality profile for all wastewater that is to be reused
- Drift eliminators for cooling towers
- An alternate water supply backup for applicable wastewater reuse applications
- If non-potable water is used for irrigation, demonstrate that the following Best Management Practices (BMPs) are implemented:
  - Onsite potable wells separated by at least 50 feet from non-potable water irrigation areas
  - Signs posted in non-potable irrigation areas to indicate that non-potable water is in use
  - All areas irrigated with non-potable water graded to control runoff and ponding, and arranged to avoid overspray of site boundaries, drinking fountains, or picnic areas
  - All non-potable irrigation flows regulated and timed to avoid public contact or irrigation during rainy or windy weather

## Building Division Plan Review Checklist for Reuse Projects

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This checklist will be used by PBCE to review your submittal. To ensure timely review and approval of your proposed project, make sure your submittal/design includes the following:

- Obtained pre-approval from ESD prior to submitting plans to Building Division
- Provided adequate plans, including a site plan, a piping plan, and process flow diagrams (PFD)
- Plans clearly indicate the pipe marking system for industrial piping
- Plans indicate the use of purple pipe or tape for marking recycled water distribution pipelines and piping
- Provided adequate separations between buried non-potable and potable water pipelines, if applicable
- Provided backflow prevention (specify type) between potable and non-potable piping systems, if applicable
- Obtained approval from the City's Fire Department Hazardous Materials Division, if required

Contact the Building Division directly for additional information concerning permit application review procedures and checklists (page 17).

## Operation & Maintenance (O&M) Manual Requirements

---

The design of any industrial wastewater reuse system must include the following provisions for proper operation. You must have an O&M Manual to efficiently operate and maintain your reuse system. Use the following outline to develop your O&M Manual:

- Facility description
- Summary of performance requirements
- Explanation of process theory and chemistry
- Safety precautions
- Instructions for startup and shutdown
- Instructions for normal operations
- List of flow and water quality monitoring points
- Process monitoring procedures
- Trouble-shooting guide
- Record-keeping instructions
- Waste management (residuals) procedures
- Emergency procedures
- Staffing requirements
- Instrument calibration procedures
- Appendices containing manufacturer's literature, maintenance instructions, parts lists, and exploded view diagrams; vendor contact names and numbers; recommended safety precautions; and other submittals
- Appendices containing facility process flow diagram, Piping and Isometric Drawings, layout, electrical drawings, instrument lists and monitoring points, valve and equipment lists, lists of control system interlocks and alarms
- Appendices containing equipment warranties, affidavits, and certifications
- Procedures to train staff to maintain the reuse system in accordance with applicable regulations and permit requirements. Ensure that backup water supply piping, valves, instrumentation, and other associated equipment for both potable and reclaimed water are in proper operating conditions at all times.
- Procedures to train all operations personnel on the limitations of the system and issues related to onsite industrial wastewater reuse, including potential health hazards
- Procedures to conduct annual cross-connection tests at all dual-plumbed sites (sites where non-potable water is used within a building in conjunction with a potable water system). See requirement of Appendix J of the UPC for details.
- Procedures for emergency shutdown of reuse water and switch over to alternate water supply
- Develop an emergency notification plan to immediately notify the City of San José and/or any affected water utilities if any of the following conditions occur:

In the event that any **cross connection** occurs or is discovered between industrial wastewater and potable water systems, notify the City of San José and the appropriate water company.

Affected Entity	Local Phone #
ESD Watershed Protection staff	(408) 945-3000
ESD Municipal Water System	(408) 277-4036
San José Water Company	(408) 279-7900
Great Oaks Water Company	(408) 227-9540

In the event of any system failure resulting from operator action or other event that leads to **unauthorized discharge of water or wastewater to the sanitary system**, contact:

Affected Entity	Local Phone #
ESD Watershed Protection staff	(408) 945-3000
<i>During non-business hours –</i> Plant computer room shift supervisor	(408) 945-5300

In the event of any system failure resulting from operator action, or other event that leads to **unauthorized discharge of water or wastewater to the storm drains, streets, groundwater, surface water bodies, or the environment at large**, contact:

Affected Entity	Local Phone #
ESD Watershed Protection staff	(408) 945-3000
During non-business hours	911

# Resources

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## **For information on ESD review & pre-approval process**

ESD - Environmental Engineering Section.....(408) 945-3000  
<http://sanjoseca.gov/esd>

## **For information on PBCE review & building permit approval process**

PBCE – Building Department..... (408) 277-4541  
<http://sanjoseca.gov/building>

## **For information on SBWR recycled water user permit**

South Bay Water Recycling (SBWR) Program.....(408) 277-3671  
<http://sanjoseca.gov/sbwr>

## **For information on industrial water reduction rebate program**

Water Efficient Technologies (WET) Program .....(408) 945-3000  
<http://www.slowtheflow.com/whatswet.html>

## **For information on ESD industrial wastewater permit process**

ESD – Source Control Section .....(408) 945-3000  
<http://sanjoseca.gov/esd>

## **To obtain a Wastewater Discharge Permit Application form**

ESD – Source Control Section .....(408) 945-3000  
<http://sanjoseca.gov/esd/water-pollution-prevention/eeforms.htm> (to download a form)



*Environmental Services Department  
and  
Planning, Building & Code Enforcement Department*

<http://sanjoseca.gov/esd>

In accordance with the Americans with Disabilities Act, City of San José Environmental Services Department materials can be made available upon request in alternative formats, such as large print, audio tape or computer disk. Requests may be made by calling (408) 945-3000 (V) or (800) 735-2929 (CRS).