

# 2012 Annual Report and Summary for the South Bay Wastewater Reclamation Plant & Ocean Outfall



NPDES No. CA 0109045  
Order No. 2006-067  
&  
Order No. 2000-203



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THE CITY OF SAN DIEGO

June 28, 2013

Mr. David W. Gibson, Executive Officer  
California Regional Water Quality Control Board  
9174 Sky Park Court, Suite 100  
San Diego, CA 92123

Attn: POTW Compliance Unit

Dear Mr. Gibson:

Enclosed is the 2012 South Bay Water Reclamation Plant and Ocean Outfall Annual Reports and Summary, as specified in discharge Order No. R9-2013-0006 and the superseded Order No. R9-2006-067, NPDES Permit No. CA0109045.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Steve Meyer  
Deputy Public Utilities Director

BGB

cc: EPA Region 9  
San Diego County Department of Environmental Health  
Distribution  
File



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City of San Diego  
Public Utilities Department  
Environmental Monitoring & Technical Services Division

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**South Bay Wastewater Reclamation Plant and Ocean Outfall Annual  
Monitoring Report  
2012**

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City of San Diego  
Public Utilities Department  
Metropolitan Wastewater Branch

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## I. Introduction

- A. Executive Summary
- B. Explanatory Notes
- C. Reporting Definitions
- D. Overview of the Metropolitan Wastewater (Metro) System
- E. Overview of SBWRP
- F. Discussion of Compliance Record
- G. Plant Facility Operations Report
- H. Correlation of Results to Plant Conditions

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## I. Introduction

### A. Executive Summary:

#### Purpose:

This report meets the annual reporting requirements of Monitoring and Reporting Program (MRP) in Order No. R9-2006-067 (NPDES Permit No. CA0109045), Order No. R9-2013-0006 that superseded R9-2006-0067 effective April 3, 2013, as well as the requirements of Order No. 2000-203 relating to the production and purveyance of recycled water at the South Bay Water Reclamation Plant (SBWRP). It also serves as a historical record and reference of operational and compliance metrics.

#### Background:

The South Bay Water Reclamation Plant (SBWRP) is located at the intersection of Dairy Mart and Monument Roads in the Tijuana River Valley. The plant relieves the South Metro Sewer Interceptor System and provides local wastewater treatment services and reclaimed water to the South Bay. The plant opened in May 2002 and has a wastewater treatment capacity of 15 million gallons a day. The plant shares the South Bay Ocean Outfall (SBOO) with the International Wastewater Treatment Plant operated by the U.S. Section of the International Boundary and Water Commission (IBWC). While the plant has been operating since May 2002, distribution of reclaimed water started 4-years later in July 2006. The volume reclaimed and distributed varies depending on demand for recycled water.

During 2012, the plant received and treated 2.9 billion gallons of wastewater, reclaiming 75% or 2.2 billion gallons. Fifty seven percent of the reclaimed water was beneficially reused by the Otay Water District, the International Treatment Plant, or used for in-plant processes. Between the months of April thru October more than seventy percent of the reclaimed water was reused.

<b>Key metrics for 2012</b>	<b>Daily Average Flow (mgd)</b>	<b>Total Annual Flow (million gallons)</b>
Influent to plant (Raw Wastewater Treated)	8.04	2,942
Effluent to Ocean Outfall	3.26	1,194
Reclaimed Water Produced	6.01	2,200
Beneficial Reuse (recycled water distributed)	3.41	1,247
Sludge and returns to South Metro Interceptor (SMI)	1.31	479
Plant Use of Reclaimed Water	0.86	316

For a detailed discussion of the plant and treatment process see sections I. F., Plant Facility Operation Report, and Chapter III. Plant Operations Summary.

## B. Explanatory Notes:

The past year's data is presented in tabular and graphical form. We include annual monitoring results, as well as special items and discussions itemized in the permits. This document is comprehensive, including supporting information on monitoring methods, frequency and changes in analyses, long-term tables of selected analytes, operational data, background analyses and treatment plant process control. Where the permit sets limits or requests the analysis of various groups of compounds (such as chlorinated and non-chlorinated phenols, PCBs, hexachlorocyclohexanes, etc.) we have provided summaries and averages of these groups and also of the individual compounds.

The Recycled Water Users Summary Report as described in Permit No. 2000-203 is submitted separately from this report. However, we do include summary information and an evaluation of the Water Reclamation and beneficial reuse integral to the operations of the plant. Section 7 contains a thorough presentation and evaluation of the Reclaimed Water process information and monitoring data.

For averaging purposes, "less than" and "not detected" (nd) values were treated as zero. In many parts of the report zero values are found. Our computer system reads "less than" values as zero for summaries, as well as in computing averages. In those areas where zeros are found the reader can find appropriate method detection limits (MDL) in the table of data. Because "less than" values are averaged as zero, values in summary tables may be less than detection limits; these are simple numeric means (or minimums). The data tables may also contain values expressed as a <X (less than), where X represents the MDL.

A further limitation is that statistical confidence in the results of an analysis is heavily dependent upon the concentration relative to the Method Detection Limit (MDL). Essentially all of our detection limits have been established using the procedure in 40 CFR, part 136. This statistical basis for the MDL results in a defined statistical confidence (at the 99% Confidence Interval) of essentially  $\pm 100\%$  when the result is near the MDL. Only at concentrations approximately 5 times the MDL is the confidence interval at  $\pm 20\%$ . While the precision of our methods generally ranges from 2-3 significant figures, the above limitations of confidence should always be considered.

Where possible, the influent and effluent values of a given parameter have been included on the same graph to make the removals and other relationships readily apparent. Please note that many of the graphs are on expanded scales that don't go to zero concentrations but show, in magnified scale, that range of concentrations where variation takes place. This makes differences and some trends obvious that might normally not be noticed however, it also provides the temptation to interpret minor changes or trends as being of more significance than they are. Please reference the chart axis scales.

C. Reporting Definitions

a. Estimated Concentrations (“E” Qualifier)

The “E” qualifier stands for “estimated value”, and is used in data reduction to flag data that has a lower concentration than normally acceptable for monitoring programs, or the method under federal regulations or ELAP requirements, but the qualitative identification has high certainty. Using normal detection limit criteria, useful information would be lost. In making determinations and reporting data there are circumstances where, due to the nature of the analysis and the needs of the customer, the certainty in quantitation can be less than the requirements necessary for general environmental monitoring and reporting for regulatory compliance.

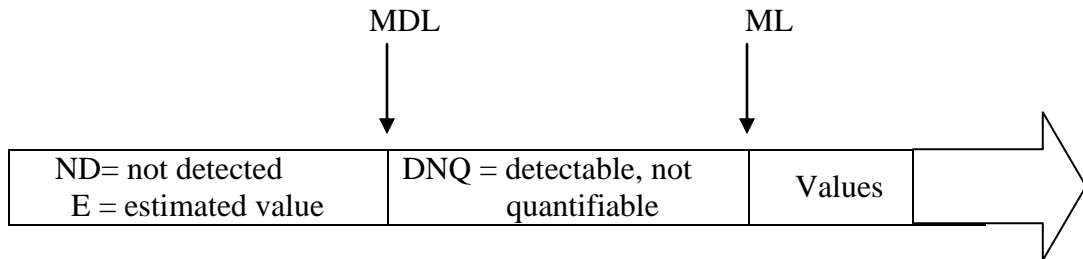
Data annotated with an “E” followed by a value (always less than the reported MDL) is an estimated value. Data annotated in this manner has an uncertainty in concentrations unacceptable for compliance determinations or other concentration dependent conclusions.

b. Detected, but not qualified (“DNQ” Qualifier)

The “DNQ” qualifier is used for NPDES effluent reporting. DNQ is for analytical results that are less than the minimum level (ML), but greater than or equal to the MDL. Data annotated with DNQ will include a value, and the method’s MDL.

Summary of E and DNQ qualifiers

- E qualifier data in LIMS will have an “E” in the qualifier column, a value in the result value column, and the MDL deleted.
- DNQ qualifier data in LIMS will have a “DNQ” in the qualifier column, a value in the result value column, and the MDL.



## D. Overview of the Metropolitan Wastewater (Metro) System

The City operates wastewater facilities to transport, treat, reclaim, reuse, and discharge wastewater and its by-products collected from the Metropolitan Wastewater System (the System). The System serves a population of approximately 2.2 million people providing for conveyance, treatment, reuse, and disposal of wastewater within a 450 square mile service area. The Metro System currently consists of several service areas including the City of San Diego (serviced by the Municipal Sub-System) and the 15-regional Participating Agencies. Wastewater treatment for the System is provided at the North City Water Reclamation Plant (NCWRP), the South Bay Water Reclamation Plant (SBWRP), and the Pt. Loma Wastewater Treatment Plant (PLWTP). Solids treatment and handling provided at the PLWTP and the Metro Biosolids Center (MBC). The City of San Diego contributes approximately 65% of the flow in the Metro System with the remainder coming from the Participating Agencies.

Each Participating Agency is responsible for the wastewater collection system within its boundaries to the point of discharge to the System. Wastewater flows from the Municipal Sub-System comprise approximately 65% of the Metro Sub-System flows. All System facilities are owned by the City of San Diego and are managed by MWWD.

A map detailing major facilities in the System and the participating agencies is included.

The System is a complex system of pipelines and pump stations that collect wastewater and convey it for treatment and disposal or reuse. The PLWTP serves as the terminus for the System and is capable of treating all flows generated within the System. Within the System are two water reclamation plants, the NCWRP and the SBWRP, that pull flow from the sewers for treatment and reuse. The System also includes the Metro Biosolids Center (MBC) which treats and disposes of all treatment process solids material removed by the treatment plants.

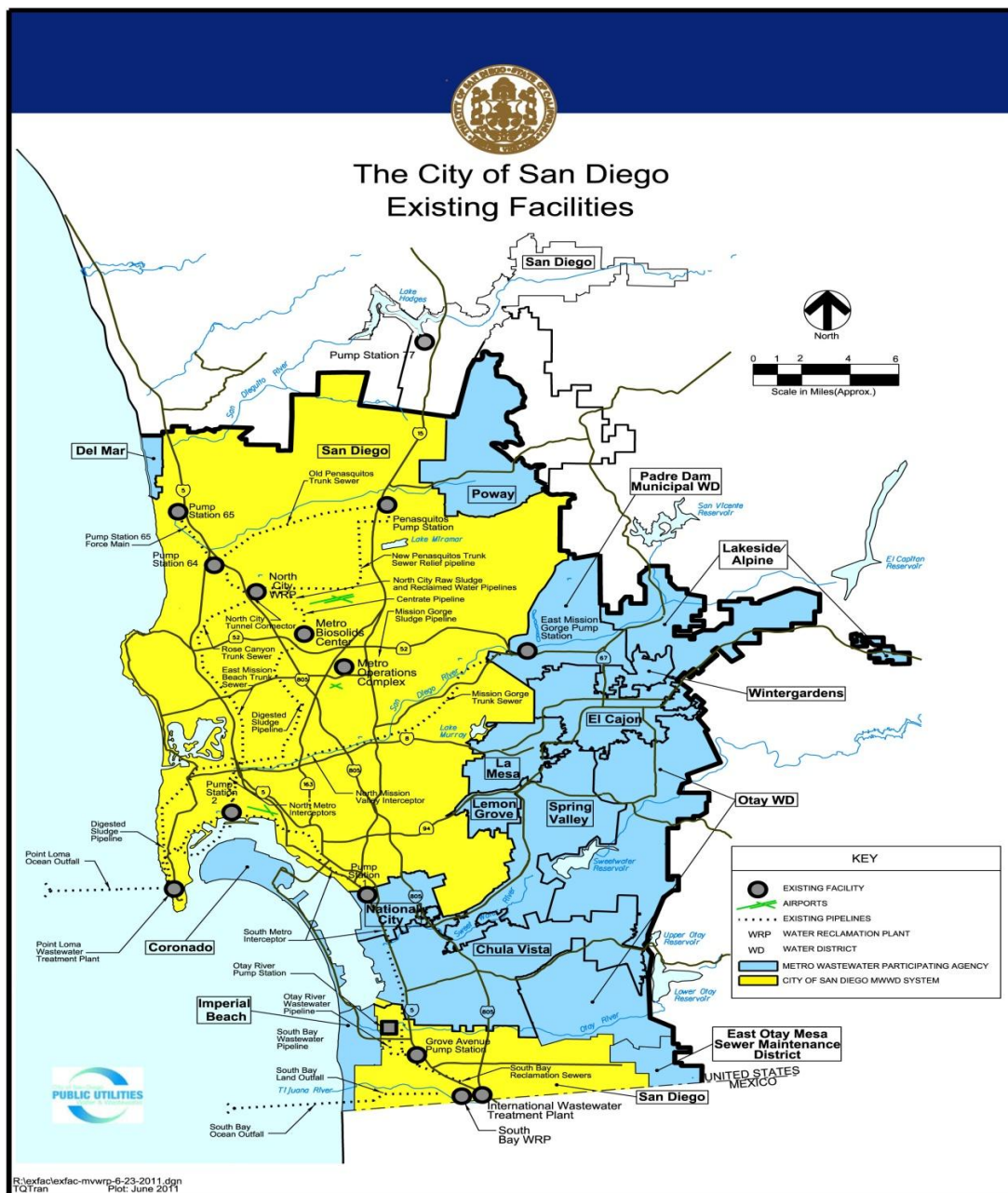
The PLWTP is the largest of the wastewater treatment plants in the System. The PLWTP is an advanced primary treatment WWTP that uses chemical addition to increase performance of the primary clarifiers and is the terminus for the System. The PLWTP discharges effluent through the Pt. Loma Ocean Outfall (PLOO). As an advanced primary treatment WWTP, performance is not measured entirely by effluent quality, but also against the California Ocean Plan and the Basin Plan which address the water quality and beneficial uses of the Pacific Ocean.

The plant has a rated capacity of 240 million gallons per day (mgd) average daily dry weather flow, 432 mgd peak wet weather flow, and currently operates at 156 mgd. The NCWRP has a rated capacity of 30 mgd and currently operates at a nominal flow-rate of 19.5 mgd. The SBWRP has a rated capacity of 15 mgd and is currently treating a nominal 8.2 mgd. The PLWTP is a modern primary treatment facility and the NCWRP and SBWRP are both modern tertiary treatment facilities.

The other two facilities, the NCWRP and the SBWRP are scalping plants that divert water from the System and treat it for reclamation purposes. Both plants currently operate as secondary treatment plants and reclaim water to tertiary standards to meet demand. Demand will fluctuate depending on the time of year and the type and number of customers. The NCWRP returns all secondary effluent that is not reclaimed back to the System for treatment at the PLWTP. However, the solids that are removed, either by

sedimentation or biological oxidation, are pumped to the MBC for further treatment. The SBWRP discharges excess secondary effluent to the SBOO and returns all solids removed from the sewage to the System for transport to the PLWTP. Performance of both water reclamation plants is measured by each facility's ability to treat reclaimed water to the required standards when discharging to the reclaimed system. Performance of the SBWRP is also measured via secondary treatment standards, as defined in the facility's NPDES permit, when discharging to the South Bay Ocean Outfall (SBOO).

The MBC processes primary and secondary solids from the NCWRP through anaerobic digestion and dewatering, and processed the digested biosolids from the PLWTP through dewatering. The dewatered biosolids are beneficially used as cover at a local landfill or used as a soil amendment for agricultural purposes. The centrate from the centrifuges is returned to the sewer and treated at the PLWTP. Performance of this facility is measured by the quality of the solids product generated for use or disposal.



## ISO 14001 Certification

Wastewater Treatment and Disposal Division (formerly called Operations and Maintenance Division) and the Monitoring and Reporting Programs operated by the Environmental Monitoring and Technical Services Division are certified in ISO<sup>1</sup> 14001, Environmental Management Systems.

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<sup>1</sup> International Standards Organization



## E. Overview of SBWRP\

The **South Bay Water Reclamation Plant (SBWRP)** relieves the South Metro Sewer Interceptor System and provides local wastewater treatment services and reclaimed or recycled water to the South Bay. The plant opened in May 2002 and has a wastewater treatment capacity of 15 million gallons a day. The plant design incorporates the newest technologies and provides advanced treatment for up to 15 million gallons of wastewater per day.



The advanced treatment meets tertiary or reclaimed water standards including disinfection. The SBWRP treatment process is a state-of-the-art implementation of traditional secondary treatment using activated-sludge. Much of the secondary effluent is reclaimed and beneficially reused after tertiary filtration through anthracite coal beds and disinfection with high-intensity ultraviolet (UV) light. The plant shares the South Bay Ocean Outfall (SBOO) with the International Wastewater Treatment Plant (IWTP) operated by the U.S. Section of the International Boundary and Water Commission (IBWC).

Treatment processes consist of mechanical bulky debris and grit removal at the headworks using standard traveling bar screens and aerated grit chambers. The removed debris is then dewatered and taken to landfills. Suspended solids of wastewater are removed by primary sedimentation. Scum removal is concurrent with primary sedimentation. Primary effluent is followed by industry standard aerated activated sludge secondary treatment. Secondary clarifiers allow settling and removal of the remainder of the solids (also called sludge) which is returned to the Metro System via the South Metro Interceptor and is pumped to the Pt. Loma WWTP. The resultant secondary effluent is either discharged to the South Bay Ocean Outfall or directed to tertiary treatment in the plant.

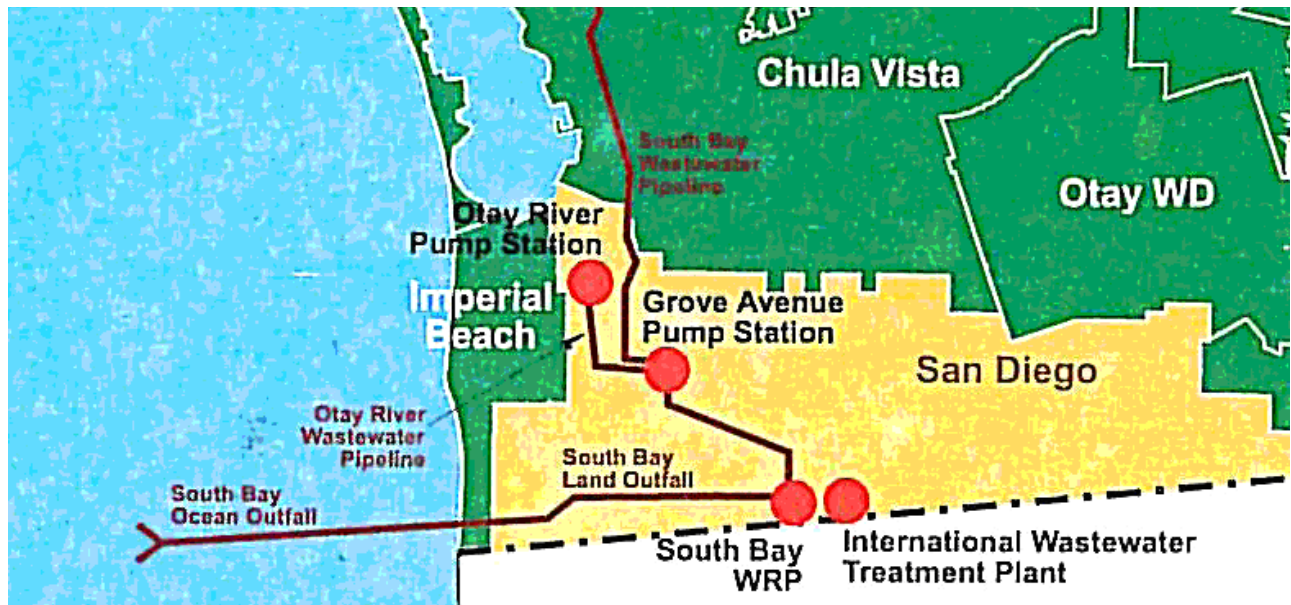


In 2012, approximately three quarters of the influent treated was directed to tertiary treatment. Tertiary treatment consists of running the secondary effluent through anthracite coal beds where it is filtered of remaining solids as it passes through the layered medium. The filtered water then passes through chambers where it is disinfected through exposure to high-energy ultraviolet light (UV). At this stage the "reclaimed" water meets State Title 22 full body contact requirements. Recycled or reclaimed water is beneficially reused for in-plant processes at SBWRP, at the nearby International Wastewater Treatment Plant and an increasing percentage of the recycled water is distributed to the Otay Water District for non-potable beneficial reuse off-setting demands for traditional potable water sources.

## South Bay Ocean Outfall (SBOO)

The South Bay Water Reclamation Plant (SBWRP) is located at 2411 Dairy Mart Road, San Diego, CA 92154. It sits at the intersection of Dairy Mart and Monument Roads in the Tijuana River Valley just meters north of the U.S.-Mexico International border. The plant provides additional treatment capacity and reclaimed water for the southern service area of the Metro System (South Metro Sewer Interceptor System).

The South Bay Ocean Outfall extends approximately 3.5 miles offshore and discharges effluent in approximately 100 feet of water. The outfall tunnel has an 11 foot diameter and is 19,000 feet long.



F. Discussion of Compliance Record

The South Bay Water Reclamation Plant operates with two separate permits. NPDES Permit No. CA0109045/ Order No. 2006-067(with addenda) provides for the treatment and disposition of wastewater via the shared South Bay Ocean Outfall and Reclaimed Water Permit No. 2000-203 (with addenda) provides for water reclamation.

**South Bay Ocean Outfall:**

There was no discharge limitations exceeded for the South Bay Ocean outfall in 2012.

**Recycled (Reclaimed) Water:** This is the seventh year of operating where reclaimed water was produced and distributed.

Chloride

The monthly average chloride limit was exceeded in 9 months in 2012. In 2012 the monitoring of chloride continued at an accelerated schedule of weekly sampling and analysis. The monthly average was calculated as a running 30 day average and the calculated values above the 260 mg/L limit are shown in table below. The increase in the concentration of chloride in the reclaimed water to levels just above the monthly average limit is attributable to a similar increase in the chloride concentration of the influent to the plant from the wastewater collections system. The chloride limit is based on a Secondary MCL for aesthetics, i.e. taste, not a health concern. Reclaimed water from the SBWRP is not used for human consumption.

30 day running average chloride values above 260 mg/L in 2012			
Date	30-Day Average	Date	30-Day Average
1/17/12	262	5/1/12	268
1/24/12	270	5/8/12	269
1/31/12	278	5/15/12	272
2/7/12	286	5/22/12	276
2/14/12	288	5/29/12	278
2/20/12	288	6/6/12	278
2/28/12	287	6/12/12	275
3/7/12	285	6/19/12	271
3/13/12	281	6/26/12	266
3/20/12	276	7/4/12	263
3/27/12	274	7/10/12	262
4/4/12	273	10/9/12	263
4/10/12	269	12/18/12	262
4/17/12	268	12/25/12	267
4/24/12	270		

### Coliform

The 7-day median coliform value of 4.0 MPN on September 24, 25 and 26, 2012 exceeded the limit of 2.2 MPN.

<b>Reclaimed Water Permit No. 2000-203</b>		
<b>Month</b>	<b>Number of measures exceeding Limits.</b>	<b>Comments: (see monthly report for further details.)</b>
January 2012	3	The 30-day average value for Chloride exceeded the limit of 260 mg/L on 3 days.
February 2012	5	The 30-day average value for Chloride exceeded the limit of 260 mg/L on 4 days. On February 7, 2012 the 30-day running average value for Manganese exceeded the monthly average limit of 50mg/L.
March 2012	4	The 30-day average value for Chloride exceeded the limit of 260 mg/L on 4 days.
April 2012	4	The 30-day average value for Chloride exceeded the limit of 260 mg/L on 4 days.
May 2012	5	The 30-day average value for Chloride exceeded the limit of 260 mg/L on 5 days.
June 2012	4	The 30-day average value for Chloride exceeded the limit of 260 mg/L on 4 days.
July 2012	2	The 30-day average value for Chloride exceeded the limit of 260 mg/L on 2 days.
August 2012	none	
September 2012	3	The 7-day median for Total Coliform was 4.0 MPN above the limit of 2.2 MPN.
October 2012	1	The 30-day average value for Chloride exceeded the limit of 260 mg/L on 1 day.
November 2012	none	
December 2012	2	The 30-day average value for Chloride exceeded the limit of 260 mg/L on 2 days.
Total:	32	

### Manganese

The 30-day running average value for manganese exceeded the monthly average limit of 50 ug/L in February 2012. Since recycling began in July 2006, there were no Manganese results above 50ug/L determined on a daily composite sample until this year and no values have exceeded the daily maximum limit of 60ug/L. The cause of the infrequent and sporadic increases in monthly Manganese values in 2012 is not yet known.

Ranges of Major Constituents in Reclaimed Water, 2012.

<b>Waste Discharge and Water Recycling Requirements for the South Bay Water Reclamation Plant (Order No. 2000-203)</b>			
<b>Parameter</b>	<b>Permit Limits</b>		<b>Measured Values CY 2012</b>
BOD <sub>5</sub>	Monthly Average	30 mg/L	<2 - 3
	Daily Maximum	45 mg/L	ND - 6
Total Dissolved Solids (TDS)	Monthly Average	1,200 mg/L	935 - 1050
	Daily Maximum	1,300 mg/L	767 - 1190
Sulfate	Monthly Average	250 mg/L	138 - 167
	Daily Maximum	300 mg/L	133 - 181
MBAS	Monthly Average	0.5 mg/L	0.1 - 0.26
	Daily Maximum	0.7 mg/L	0.1 - 0.26
Iron	Monthly Average	0.3 mg/L	ND - 0.17
	Daily Maximum	0.4 mg/L	ND - 0.17
Fluoride	Monthly Average	1.0 mg/L	0.5 - 0.66
	Daily Maximum	1.2 mg/L	0.47 - 0.73
Total Coliform	Daily Maximum	MPN 23/100-mLs	<1.8 - 23

## G. Plant Facility Operation Report

### SOUTH BAY WATER RECLAMATION PLANT 2012 ANNUAL FACILITY REPORT

Prepared by Plant Superintendent Ernesto Molas

This facility report summarizes some of the key operational considerations involved in the facility operation of the South Bay Water Reclamation Plant (SBWRP) during calendar year 2012. Numerical data and analysis presented in this section are based on plant staff work. Refer to the laboratory data in this document for validated results for official reporting purposes.

#### **Influent Sampling:**

Plant staff continues to implement a preventive maintenance program of switching and cleaning of the sample delivery pumps on a regular basis to ensure consistency in samples.

#### **Basin Utilization:**

The number of basins online for each unit processes meets the plant's overflow rates and detention time design criteria ranges which are as follows:

- 3 Primary Tanks on line with 2 offline as backups
- 5 Aeration Basin on line with 3 offline as backups
- 6 Secondary Basin on line with 3 as offline as backups

#### **Influent Flows:**

The design capacity of the plant is 15 million gallons per day (MGD), with a peak capacity of 18 MGD. The average daily influent flow treated during 2012 was 8.04 MGD. Effluent flow discharged to the ocean outfall was 3.26 MGD. Total reclaimed water usage was 4.27 MGD with 3.41 MGD of it was sold to customers and the remaining 0.86 MGD was used internally for filter backwashing and as utility water for plant equipments and processes.

#### **Solids Handling:**

The influent screening and washer/compaction units operated well, with adequate on-site hopper capacity. Approximately 26.12 tons of screenings were disposed of through the end of December 2012. Grit storage capacity was also adequate with 17.27 tons of grit hauled off site. All primary scum was returned to the MWW collection system (for treatment at the Pt. Loma WWTP facility) by routing the scum collection discharge to the blended sludge pump wet well. Primary and secondary sludge is also routed to the collection system via the blended sludge pumps. The activated sludge process was maintained through the use of high capacity wasting directly from the aeration basins to the blended sludge pumps during the full period of 2012 operation. Average daily totals for blended sludge volumes returned to the Pt. Loma facility via the South Metro Interceptor were 1.32 MGD.

#### **Secondary Performance:**

Secondary treatment performance for TSS and BOD has been an average TSS of 8.52 mg/L and BOD of 10.08 mg/L for 2012. Average secondary effluent turbidity was 3.76 NTU. MCRT has typically been maintained between 5 to 7 days.

### **Tertiary Processes:**

The average filter effluent turbidity for 2012 was 0.58 NTU. In June 2012, all tertiary filters media were brought back to their original media level by replenishing them with fresh anthracite. All seven filters were available for operation. And 4 to 5 filters were on line to meet the RW demand.

Chlorine is added at the UV influent to control algae growth. The total chlorine residual is maintained at equal or below 0.5 mg/l. The frequency of chlorine addition is 12 hrs/day.

### **Water Reclamation & Distribution:**

RW water was delivered to IBWC (International Boundary Water Commission) at an average daily rate of less than 0.5 MGD throughout the year. And the average delivery rate to Otay Storage tank during summer months was 5 to 7 mgd and only less than 1 mgd during the winter months.

### **Discussion of compliance record:**

#### **Coliform**

On September 24, 25 and 26, 2012 the 7-day median of Total Coliform values for the recycled water was 4.0 MPN which is above the limit of 2.2 MPN.

The cause is being investigated.

#### **Sampling**

On September 29, 2012 a 24-hour composite of reclaimed water was collected at the permit required frequency. After collection but before analysis of the required daily monitoring (i.e. TSS, VSS, and BOD) the sample was inadvertently discarded therefore no daily composite monitoring data could be reported for this day.

#### **Chloride**

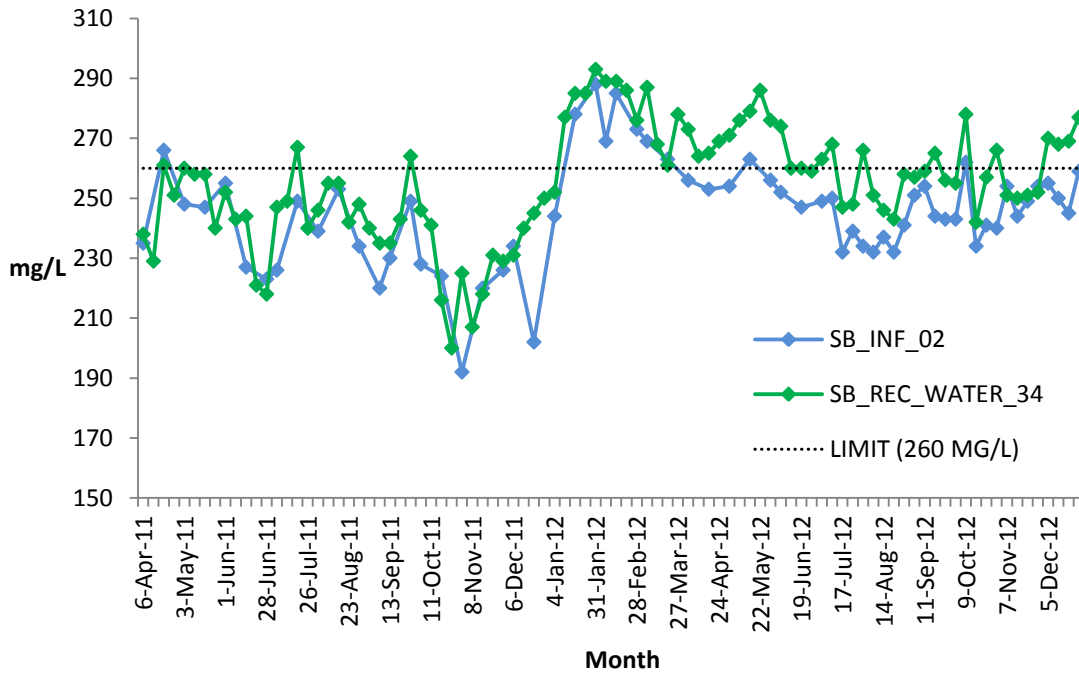
The 30-day average value for chloride exceeded the permit limit of 260 mg/L on the following months of 2012: January, February, March, April, May, June, July, October, and December.

This increase in chloride concentration is under investigation.

Below is graph showing the concentration of chloride in the treatment plant influent and recycled water at the SBWRP over time.

The graphical trending of the influent and recycled water chloride concentration indicates that there is increased chloride entering the treatment plant from the collection system. This increase was also observed for a short period in the winter of 2011.

## Chloride Concentration Apr 2011 to Dec 2012



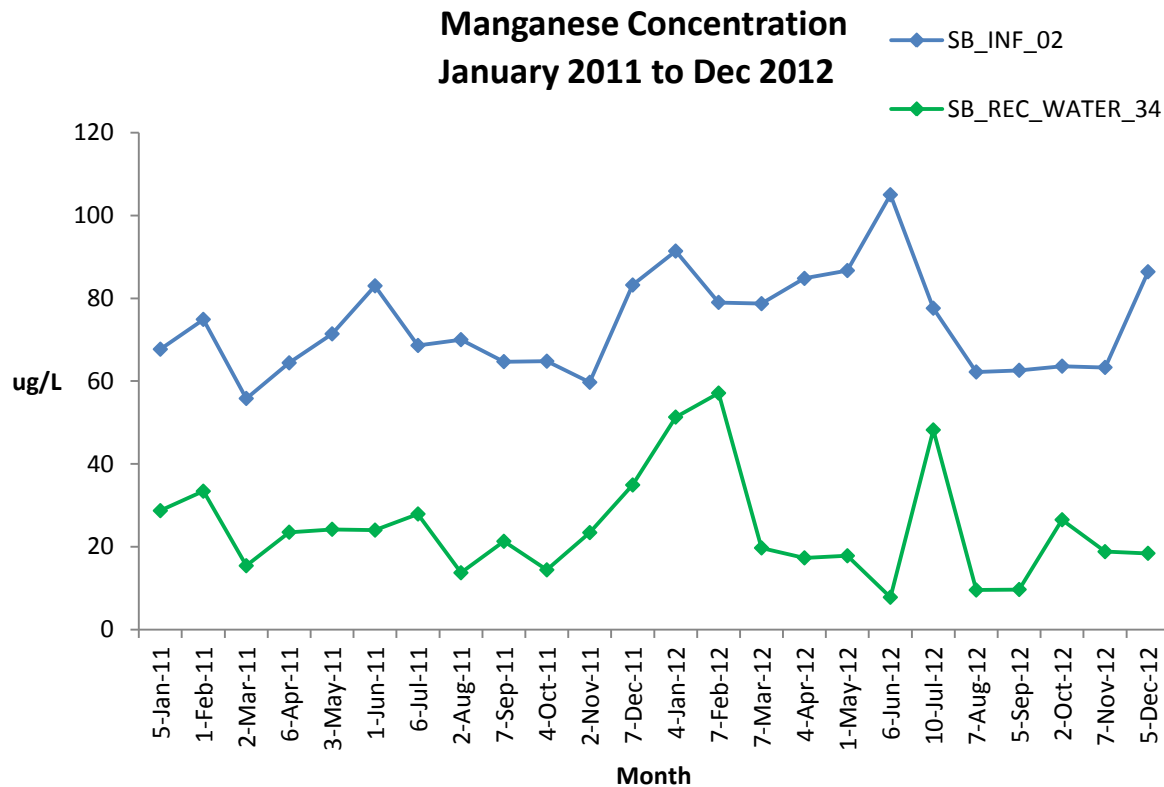
## Manganese

On February 7, 2012 the 30-day running average value for manganese exceeded the monthly average limit of 50 ug/L.

This increase in manganese concentration is under investigation.

Below is graph showing the concentration of manganese in the treatment plant influent and recycled water at the SBWRP over time.





#### **Vector Control:**

The presence of midge flies has been an on-going issue with the potential to adversely affect effluent quality, primarily at the secondary clarifiers and tertiary filters. Plant staff continues to rotate secondary clarifiers to disrupt midge flies larvae production. Control measures also include lowering the water level of a secondary clarifier to expose the larvae adhering to the side walls so they can be hosed down and removed. The staff also wash the sides of the filter during its backwash cycle to disrupt the midge fly from reproducing. The efforts to gain full control over this problem continue.

#### **Engineering Projects:**

During 2012, the Engineering group for the Wastewater Treatment and Disposal Division (WWTD) provided engineer support for the plant. Their support is mainly on-demand (no resident engineer) so the on-going and completed projects identified below were accomplished by a combination of plant staff and by the WWTD engineering group.

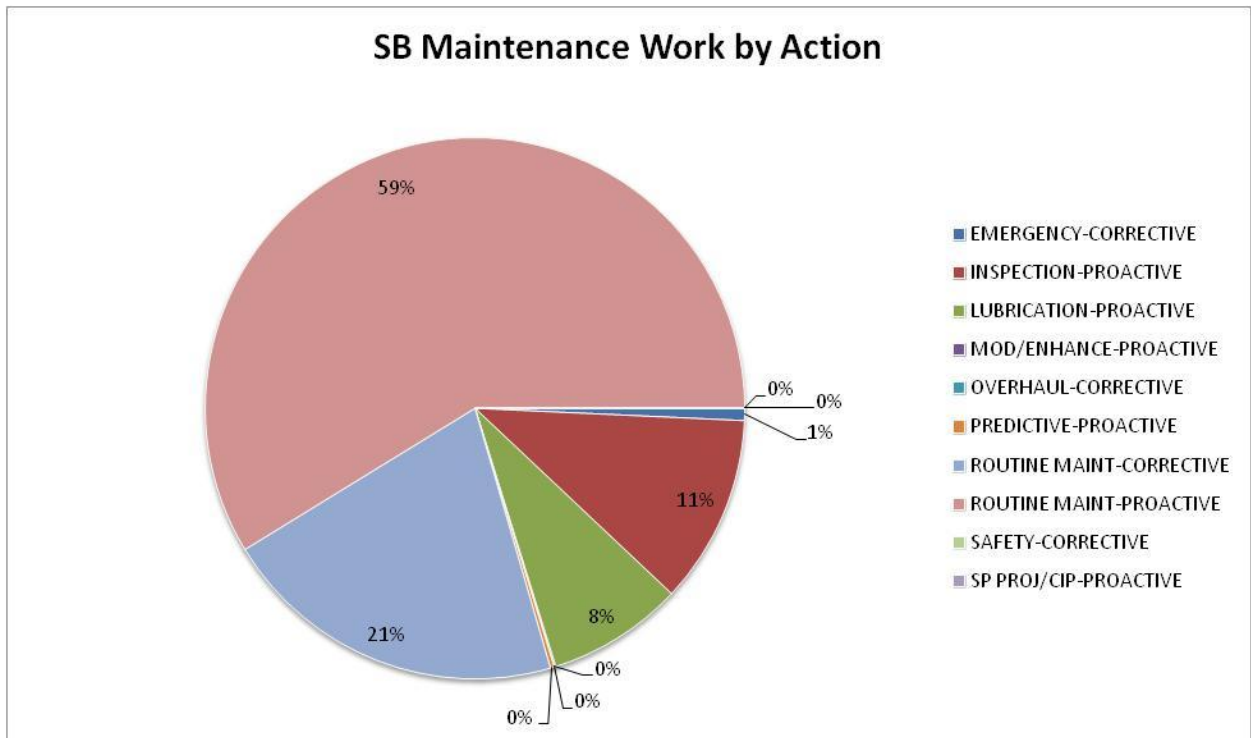
1. Sludge Pumps Replacement Project – pneumatics pumps will be replaced with motorized pumps to lower maintenance cost. Funding has been approved and the pumps and grinders have been ordered. Once the plant drawings have been reviewed and approved, the installation of the motorized pumps will begin.
2. Service Air Compressor Replacement Project – The compressor currently uses large amounts of reclaimed water (RW) for cooling. When the sludge Pumps Replacement Project is completed, the compressor will be replaced with an air cooled type compressor eliminating the need to use RW for cooling. Currently seeking funding to plan for replacement when the new sludge pump installation is completed.

3. Grit Tanks Rehab Project – Grit Tank #1 is completed and Grit Tank #2 was completed in March 2012. The project entails resurfacing the grit tank walls, refurbishing all mechanical piping and valves, replacement of grit tank covers, and repairs of corroded concrete around the surface are of the grit tank.
4. Jockey Pump project- Pump is being installed with Electrical and I&C to follow. Expect completion by Sept 2013.
5. Demineralization project (EDR) - Project is in the proposal phase to select Design Build team.
6. Chlorine analyzer - An improved chlorine analyzer was installed closer to the sample point. The new analyzer will allow for fewer calibration and maintenance. The analyzer was moved closer to the sample collection point for better algae control in the UV channel.
7. The obsolete Rosemount turbidity meters for the filter effluent have been replaced with a Hach turbidity meters. The newer unit is maintenance free and only requires an occasional cleaning.

**Maintenance Report:**

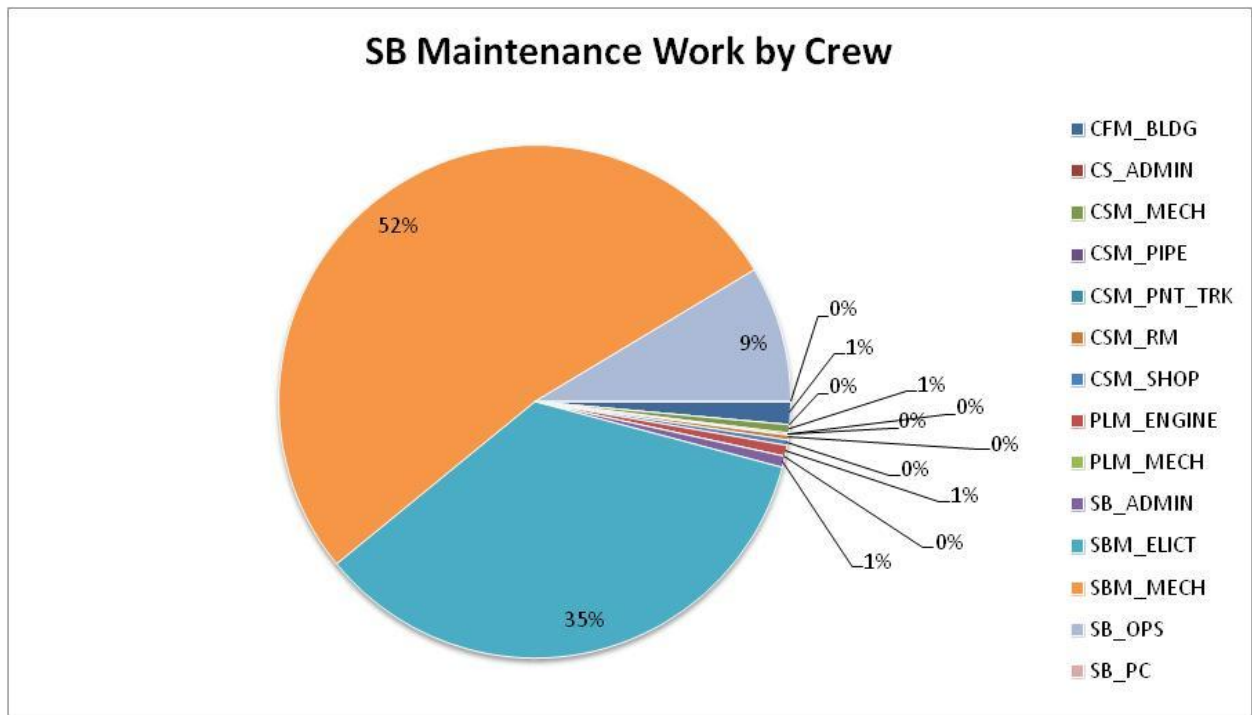
**South Bay Maintenance Work Orders by Action**

Action	Work Order Count
EMERGENCY-CORRECTIVE	32
INSPECTION-PROACTIVE	495
LUBRICATION-PROACTIVE	357
MOD/ENHANCE-PROACTIVE	4
OVERHAUL-CORRECTIVE	0
PREDICTIVE-PROACTIVE	10
ROUTINE MAINT-CORRECTIVE	909
ROUTINE MAINT-PROACTIVE	2573
SAFETY-CORRECTIVE	1
SP PROJ/CIP-PROACTIVE	0



### South Bay Maintenance Work Orders by Crew

Crew	Work Order Count
CFM_BLDG	63
CS_ADMIN	0
CSM_MECH	23
CSM_PIPE	5
CSM_PNT_TRK	1
CSM_RM	13
CSM_SHOP	15
PLM_ENGINE	30
PLM_MECH	0
SB_ADMIN	31
SBM_ELECT	1533
SBM_MECH	2293
SB_OPS	376
SB_PC	1



## H. Correlation of Results to Plant Conditions

In 2012 the amount of system flows treated at the SBWRP averaged over 8 million gallons per day

### Annual Totals

Year	SBWRP Influent (million gals)	SBWRP Discharge to South Bay Outfall (million gals)	SBWRP Distributed Recycled Water (million gals)	System Return Stream (million gals)	Net removed from Metro (million gals)
2012	2942	1194	1247	479	2441
2011	3,001	1,288	1,177	505	2465
2010	3,003	1,248	1,156	571	2404
2009	3,050	958	1,501	564	2,459
2008	3,173	1,167	1,388	601	2,555
2007	3,158	1,467	1,101	527	2,568

Comparative flow data:

low stream	2009		2010		2011		2012	
	Daily Average	Annual Total	Daily Average	Annual Total	Daily Average	Annual Total	Daily Average	Annual Total
Influent	8.33	3,050	8.23	3,003	8.22	3,000	8.04	2942
RW (Reclaimed Water) Produced	6.51	2,378	6.52	2,380	5.89	2,154	6.01	2200
RW Distributed	4.11	1,501	3.15	1,156	3.22	1,177	3.4	1247
RW In-plant use	0.78	284	0.85	311	0.97	353	0.86	316
Total reuse	4.89	1,785	4.0	1,467	4.19	1,530	4.26	1563
Effluent to SBOO	2.62	958	3.43	1,248	3.54	1,288	3.27	1194
Return to SMI	1.55	564	1.56	571	1.38	505	1.31	479

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