SD Public Utilities

Annual Report and Summary

South Bay Wastewater Reclamation Plant & Ocean Outfall

NPDES No. CA 0109045
Order No. R9-2013-0006
&
Order No. 2000-203

2017

Environmental Monitoring and Technical Services
2392 Kincaid Road • Mail Station 45A • San Diego, CA 92101
Tel (619) 758-2300 Fax (619) 758-2309

CERTIFIED
Public Utilities Department
Continual Improvement. Prevention of Pollution. Regulatory Compliance.
ISO 14001

This page left intentionally blank.

City of San Diego
Public Utilities Department

2017 Annual Report and Summary for the South Bay Wastewater Reclamation Plant & Ocean Outfall

This report consists of the 2017 South Bay Water Reclamation Plant and Ocean Outfall Annual Reports and Summary, as specified in discharge Order No. R9-2013-0006, NPDES Permit No. CA0109045.

Section I is an Executive Summary providing general background information regarding the review and summary of findings and conclusions for 2017.

Section II through IX contain reports and information for 2017 as listed in the Table of Contents.

This page left intentionally blank.

Table of Contents

This page intentionally left blank.

Credits and Acknowledgements

South Bay Wastewater Reclamation Plant and Ocean Outfall Annual Monitoring Report 2017

City of San Diego
Public Utilities Department
Metropolitan Wastewater Branch

Environmental Monitoring & Technical Services Division
Environmental Chemistry Services
5530 Kiowa Drive
La Mesa, CA 91942
Phone: (619) 668-3215 FAX: (619) 668-3284

Supervising Editors & Science Staff:
Elvira Mercado
Lee King

Editorial Production & Support
Corinna Quinata

Data Management, Report Generation, Data Tables & Graphics
Fernando Martinez

Treatment & Disposal Division
2411 Dairy Mart Road
San Diego, CA
Phone: (619) 428-7306 FAX: (619) 428-6915

South Bay Wastewater Reclamation Plant Superintendent
Ernesto Molas

Senior WW Operations Supervisor
Eileen McNeil

Senior Plant Technician Supervisor
Robert Rodriguez

WW Operations Supervisor- Process Control
Eddy Mata

This page intentionally left blank.

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

This page intentionally left blank.

I. Introduction

A. Executive Summary:

Purpose:

This report meets the annual reporting requirements of Monitoring and Reporting Program (MRP) in Order No. R9-2013-0006 (NPDES Permit No. CA0109045), Order No. R9-2013-0006 superseded R9-2006-0067 on April 3, 2013. This report contains summaries for 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 an 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 2017, the plant received and treated 2.7 billion gallons of wastewater, reclaiming 80% or 2.2 billion gallons. Eighty 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 May thru October more than seventy percent of the reclaimed water was reused.

Key metrics for 2017	**Daily Average Flow (mgd)**	**Total Annual Flow** (million gallons)
Influent to plant (Raw Wastewater Treated)	7.39	2,699
Effluent to Ocean Outfall	3.49	1,268
Reclaimed Water Produced	6.02	2,203
Beneficial Reuse (recycled water distributed)	2.99	1098
Sludge and returns to South Metro Interceptor (SMI)	0.98	357
Plant Use of Reclaimed Water	0.89	326

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 are presented in tabular and graphical form. We include annual monitoring results, 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, and 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 ±100% when the result is near the MDL. Only at concentrations approximately 5 times the MDL is the confidence interval at ±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 where the y-axes (concentration) do not start at zero, but instead are scaled to highlight the range of concentrations where variation takes place. These expanded scales make differences and some trends obvious that might normally not be noticed; however, they also may inadvertently place more weight on relatively minor changes or trends than deserved. 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 have 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 quantification can be less than the requirements necessary for general environmental monitoring and reporting for regulatory compliance.

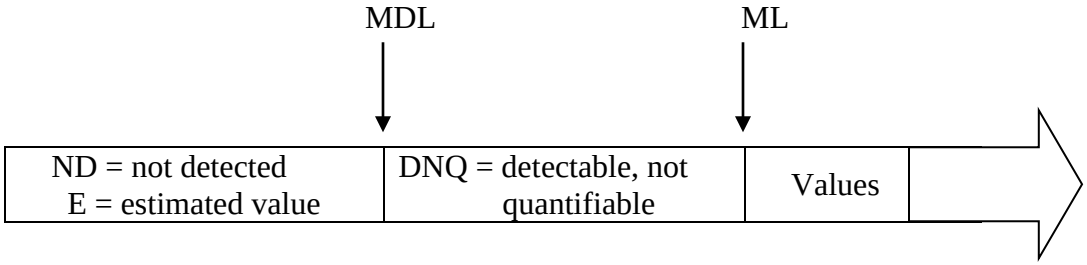
Data annotated with an "E" followed by a value (always less than the reported MDL) are estimated values. Data annotated in this manner have an uncertainty in concentrations unacceptable for compliance determinations or other concentration dependent conclusions.

b. Detected, but not qualified ("DNQ" Qualifier)

The "DNQ" qualifier is used for NPDES effluent reporting. DNQ is associated with 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 3.2 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 Point 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 compose approximately 65% of the Metro Sub-System flows. All System facilities are owned by the City of San Diego and are managed by PUD.

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) that treats and disposes of all treatment process solids material removed by the treatment plants.

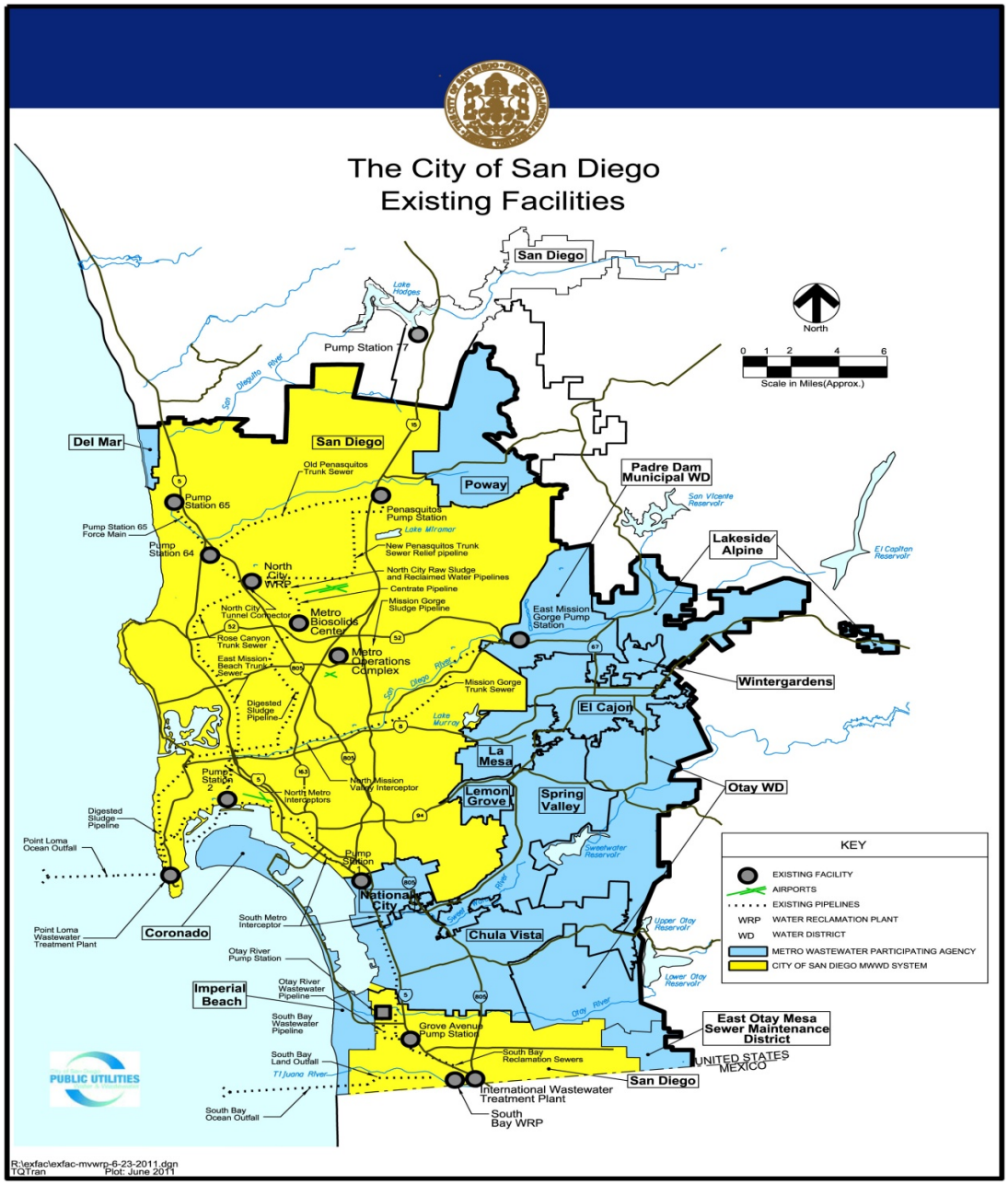
The PLWTP is the largest of the wastewater treatment plants in the System. The PLWTP is an advanced primary treatment WWTP that uses chemical addition to increase performance of the primary clarifiers and is the terminus for the System. The PLWTP discharges effluent through the Point Loma Ocean Outfall (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 that address the water quality and beneficial uses of the Pacific Ocean.

The plant has a rated capacity of 240 million gallons per day (mgd) and currently operates at 144 mgd. The NCWRP has a rated capacity of 30 mgd and currently operates at a nominal flow-rate of 15.4 mgd. The SBWRP has a rated capacity of 15 mgd and is currently treating a nominal 8.0 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 processes 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[1] 14001, Environmental Management Systems.

[1] 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).

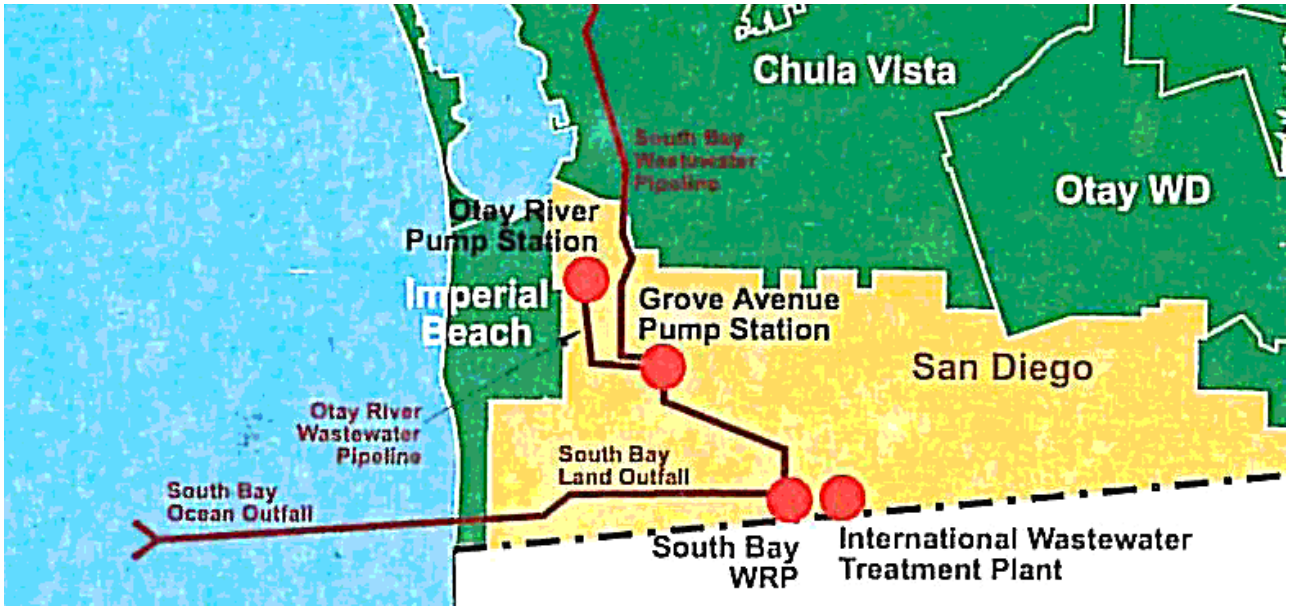
Treatment processes consist of mechanical bulky debris and grit removal at the headworks using standard traveling bar screens and aerated grit chambers. The removed debris is then dewatered and taken to landfills. Suspended solids of wastewater are removed by primary sedimentation. Scum removal is concurrent 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) that is returned to the Metro System via the South Metro Interceptor and is pumped to the Point Loma WWTP. The resultant secondary effluent is either discharged to the South Bay Ocean Outfall or directed to tertiary treatment in the plant.

In 2013, 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 California 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. 2013-0006 (with addenda) as amended by Order No. R9-2014-0071 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 were no discharge limitations exceeded for the South Bay Ocean outfall in 2017.

Recycled (Reclaimed) Water: This is the twelfth year of plant operation that reclaimed water was produced and distributed

Ranges of Major Constituents in Reclaimed Water, 2017.

Waste Discharge and Water Recycling Requirements for the South Bay Water Reclamation Plant (Order No. 2000-203)			
Parameter	**Permit Limits**		**Measured Values CY 2017**
BOD_5	Monthly Average	30 mg/L	<2 - 19
	Daily Maximum	45 mg/L	19
Total Dissolved Solids (TDS)	Monthly Average	1,200 mg/L	886 - 1080
	Daily Maximum	1,300 mg/L	1,230
Sulfate	Monthly Average	250 mg/L	120 – 223
	Daily Maximum	300 mg/L	229
MBAS	Monthly Average	0.5 mg/L	0.03 – 0.12
	Daily Maximum	0.7 mg/L	0.115
Iron	Monthly Average	0.3 mg/L	0.025 – 0.103
	Daily Maximum	0.4 mg/L	0.103
Fluoride	Monthly Average	1.0 mg/L	0.47 – 0.59
	Daily Maximum	1.2 mg/L	0.64
Chloride	30-Day Average	260 mg/L	249-305*
	Daily Maximum	300 mg/L	305*
% Sodium	30-Day Average	60%	56.0-63.1*
	Daily Maximum	60%	63.1*
Total Coliform	Daily Maximum	MPN 240/100-mLs	<1.8 - 49

*Measured parameter exceeded permit limit.

G. Plant Facility Operation Report

SOUTH BAY WATER RECLAMATION PLANT 2017 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 2017. 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:
2 Primary Tanks on line with 3 offline as backups
5 Aeration Basin on line with 3 offline as backups
6 Secondary Basin on line with 2 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 2017 was 7.35 MGD. Effluent flow discharged to the ocean outfall was 3.48 MGD. Total reclaimed water usage was 3.9 MGD with 3.01 MGD of it was sold to customers and the remaining 0.89 MGD was used internally for filter backwashing and as utility water for plant equipment and processes.

Solids Handling:
The influent screening and washer/compaction units operated well, with adequate on-site hopper capacity. Approximately 26.48 tons of screenings were disposed of through the end of December 2017. Grit storage capacity was also adequate with 46 tons of grit hauled off site. All primary scum was returned to the MWWD 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 using high capacity wasting directly from the aeration basins to the blended sludge pumps during the full period of 2017 operation. Average daily totals for blended sludge volumes returned to the Pt. Loma facility via the South Metro Interceptor were 0.98 MGD.

Secondary Performance:
Secondary treatment performance for TSS and BOD has been an average TSS of 10.84 mg/L and BOD of 9.59 mg/L for 2017. Average secondary effluent turbidity was 2.46 NTU. MCRT has typically been maintained between 5 to 7 days.

Tertiary Processes:
The average filter effluent turbidity for 2017 was 0.8 NTU. All seven filters were available for operation. An average 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:
The average delivery rate to Otay Storage tank during 2017 was 3.01 MGD. During summer months, the average delivery rate was 5 to 7 mgd and only less than 1 mgd during the winter months.

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 washes the sides of the filter during its backwash cycle to disrupt the midge fly from reproducing. The effort to gain full control over this problem continues.

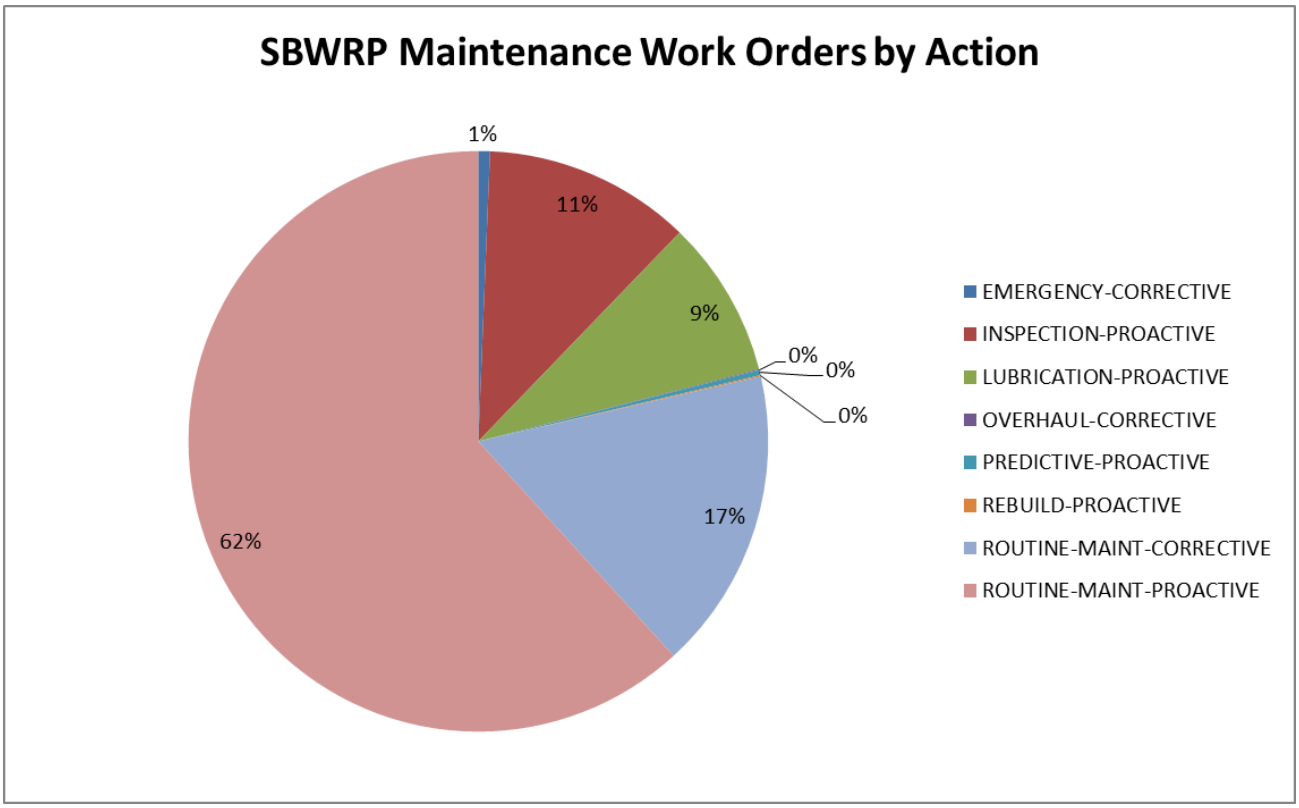
Engineering Projects:
During 2017, the Engineering group for the Wastewater Treatment and Disposal Division (WWTD) provided engineer support for the plant. Their support is mainly on-demand (no resident engineer) so the on-going and completed projects identified below were accomplished by a combination of plant staff and by the WWTD engineering group.

1. Sludge Pumps Replacement Project – The original five (5) Primary Sludge Pumps are pneumatically operated pumps and will be replaced with two (2) electrical motorized pumps and grinders to lower the maintenance cost. The two pumps and grinders were installed, started up and the project was substantially completed on February 15, 2017.
2. Service Air Compressor Replacement Project – The two (2) air compressors currently use large amounts of reclaimed water (RW) for cooling. When the Sludge Pumps Replacement Project is completed, the two (2) air compressors will be replaced with an air cooled type compressors eliminating the need to use RW for cooling. The two (2) air compressors were installed, started up and the project was substantially completed on July 07, 2017.
3. Demineralization project (EDR) – Project consists the installation of two (2) trailer-mounted Electro Dialysis Reversal (EDR) equipment(existing), three (3) feed pumps, chemical tanks and associated pumps as well as associated piping and valves. The installation was completed and the project is in the start-up phase.

Maintenance Report 2017:

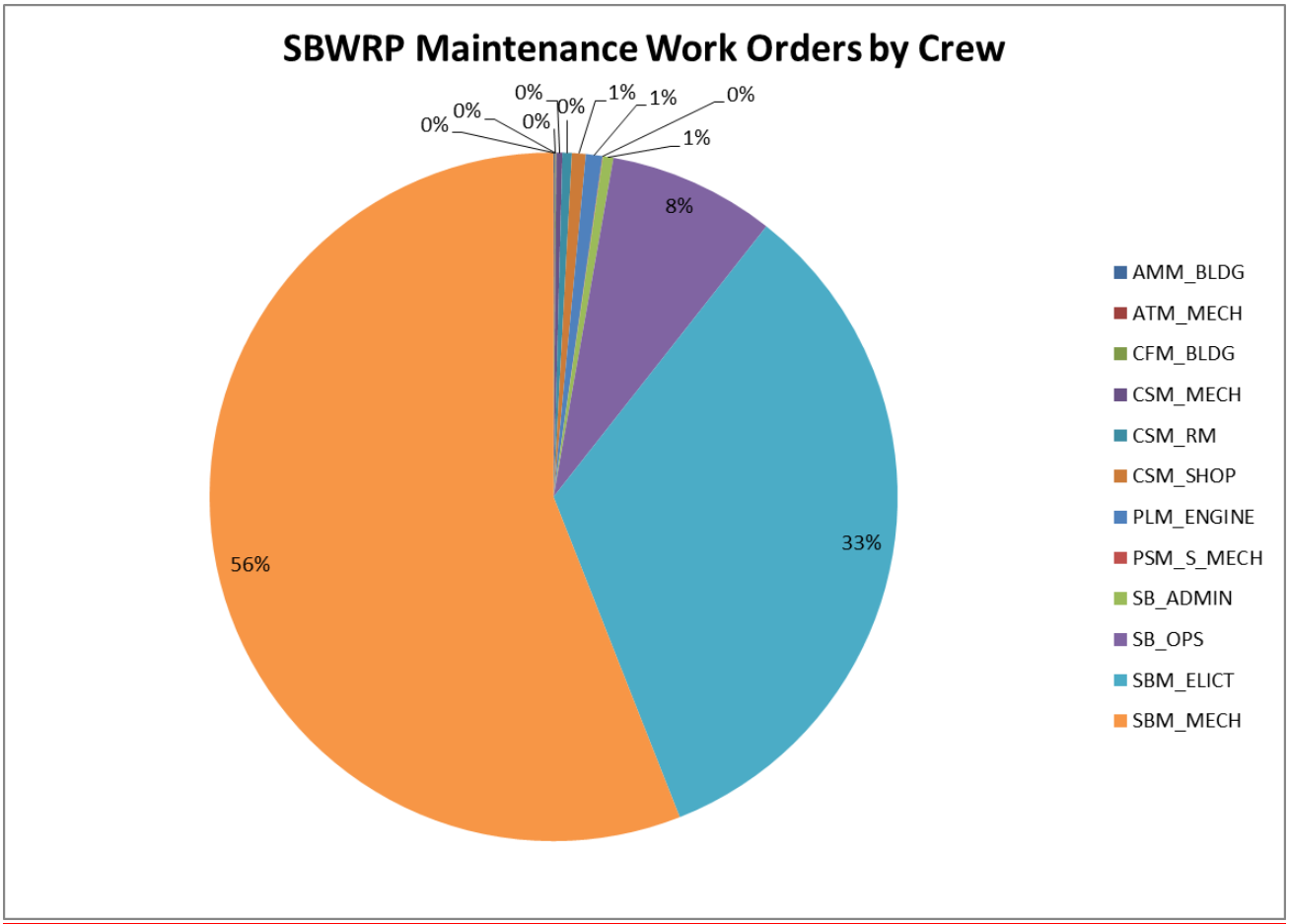
South Bay Maintenance Work Orders by Action

Action	Work Order Count
EMERGENCY-CORRECTIVE	25
INSPECTION-PROACTIVE	448
LUBRICATION-PROACTIVE	340
OVERHAUL-CORRECTIVE	2
PREDICTIVE-PROACTIVE	11
REBUILD-PROACTIVE	3
ROUTINE-MAINT-CORRECTIVE	651
ROUTINE-MAINT-PROACTIVE	2391



South Bay Maintenance Work Orders by Crew

Crew	Work Order Count
AMM_BLDG	2
ATM_MECH	1
CFM_BLDG	2
CSM_MECH	11
CSM_RM	17
CSM_SHOP	25
PLM_ENGINE	30
PSM_S_MECH	1
SB_ADMIN	19
SB_OPS	303
SBM_ELICT	1293
SBM_MECH	2167



H. Correlation of Results to Plant Conditions

In 2017 the amount of system flows treated at the SBWRP averaged 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)
2017	2699	1268	1098	357	2366
2016	2,732	1,209	1,117	401	2,326
2015	2,724	1,274	956	479	2,230
2014	2,908	1,075	1,216	586	2,291
2013	2,948	1,171	1,172	590	2,343
2012	2,942	1,194	1,247	479	2,441
2011	3,001	1,288	1,177	505	2,465
2010	3,003	1,248	1,156	571	2,404
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

*The net removed from Metro is the sum of discharge water to SB Outfall and Distributed water.

Comparative flow data:

	2013		2014		2015		2016		2017	
low stream	Daily Average	Annual Total	Daily Average	Annual Total	Daily Average	Annual Total	Daily Average	Annual Total	Daily Average	Annual Total
Influent	8.08	2,948	7.97	2,908	7.47	2,724	7.46	2,732	7.39	2699
RW (Reclaimed Water) Produced	5.96	2,176	6.02	2,199	5.35	1,954	6.01	2,202	6.04	2203
RW Distributed	3.20	1,172	3.32	1,216	2.62	954	3.05	1,117	3.01	1098
RW In-plant use	0.77	282	0.94	344	0.84	308	0.78	287	0.89	327
Total reuse	3.97	1,454	4.26	1,560	3.46	1,262	3.82	1,404	3.90	1425
Effluent to SBOO	3.22	1,171	2.96	1,075	3.49	1,274	3.31	1,209	3.47	1268
Return to SMI	1.62	590	1.60	586	1.31	479	1.10	401	0.98	357

II. Influent and Effluent Data Summary

A. Mass Emissions

B. Discharge Limits

C. Influent and Effluent Data Summaries

D. Influent and Effluent Graphs

E. Daily Values of Selected Parameters

F. Toxicity Bioassay

This page intentionally left blank.

A. Mass Emissions

Mass Emissions of Effluent Using 2017 Monthly Averages

DISCHARGE SPECIFICATIONS from NPDES Permit No. CA0109045/RWQCB Order No. 2013-0006 effective on April 4, 2013 as amended by Order No. 2014-0071 with limits on pollutant discharges.

Effluent Limitations Based on Secondary Treatment Standards				
Constituent/Property	**Limit: Monthly Average (30 day) (lbs/day)**	**2017 Mass Emissions (lbs/day)[1]**	**2017 Average Concentration**	**Units**
Flow (MGD)			**3.49**	MGD
Total Suspended Solids	3,753	**125**	**4.3**	mg/L
BOD	3,753	**146**	**5**	mg/L
Oil & Grease	3,128	93	3.2	mg/L

Effluent Limitations Based on Basin Plan and California Ocean Plan (2009)				
Constituent/Property	**Limit: Daily Maximum (lbs/day)**	**2017 Mass Emissions (lbs/day)[1]**	**2017 Average Concentration**	**Units**
Arsenic	350	0.005	0.18	ug/L
Cadmium	48	0.000	0	ug/L
Chromium	96	0.02	0.75	ug/L
Copper	120	0.3	9.71	ug/L
Lead	96	0.009	0.3	ug/L
Mercury	1.9	0.00012	0.004	ug/L
Nickel	240	0.09	3.08	ug/L
Selenium	720	0.015	0.5	ug/L
Silver	32	0.00	0.07	ug/L
Zinc	860	1.5	52.5	ug/L
Cyanide	48	0.029	0.001	mg/L
Residual Chlorine	96	0.1	0.003	mg/L
Ammonia	29,000	5.8	0.2	mg/L
Non-Chor. Phenols	1,400	0	0	ug/L
Chlorinated Phenols	48	0	0	ug/L
Endosulfan	0.22	0.00	0	ng/L
Endrin	0.048	0.000	0	ng/L
hexachlorocyclohexanes *(HCH)	0.096	0.000	0	ng/L

* (all as Lindane, the gamma isomer)

Effluent Limitations Based on Basin Plan and California Ocean Plan (2009)				
Constituent/Property	Limit: 30-Day Average (lbs/day)	2017 Mass Emissions (lbs/day)[1]	2017 Average Concentration	Units
Acrolein	2,600	0	0	ug/L
Antimony	14,000	0.020	0.68	ug/L
Bis(2-chloroethoxy) methane	53	0	0	ug/L
Bis(2-chloroisopropyl) ether	14,000	0	0	ug/L
Chlorobenzene	6,800	0	0	ug/L
Chromium (III)	2,300,000	0	0	ug/L
di-n-butyl phthalate	42,000	0	0	ug/L
dichlorobenzenes	61,000	0	0	ug/L
1,1-dichloroethylene	11	0	0	ug/L
Diethyl phthalate	390,000	0	0	ug/L
Dimethyl phthalate	9,800,000	0	0	ug/L
4,6-dinitro-2-methylphenol	2,600	0	0	ug/L
2,4-dinitrophenol	480	0	0	ug/L
Ethylbenzene	49,000	0	0	ug/L
Fluoranthene	180	0	0	ug/L
Hexachlorocyclopentadiene	690	0	0	ug/L
Isophorone	87,000	0	0	ug/L
Nitrobenzene	59	0	0	ug/L
Thallium	24	0	0	ug/L
Toluene	1,000,000	0	0	ug/L
1,1,2,2-tetrachloroethane	27	0	0	ug/L
Tributyltin	0.017	0.00	0	ug/L
1,1,1-trichloroethane	6,500,000	0	0	ug/L
1,1,2-trichloroethane	110	0	0	ug/L
Acrylonitrile	1.2	0.0	0	ug/L
Aldrin	0.00026	0.00000	0	ng/L
Benzene	71	0	0	ug/L
Benzidine	83,200	0	0	ug/L
Beryllium	0.39	0.00	0	ug/L
Bis(2-chloroethyl)ether	0.54	0.00	0	ug/L
Bis(2-ethylhexyl)phthalate	42	0	0	ug/L
Carbon Tetrachloride	11	0	0	ug/L
Chlordane	0.00028	0.00000	0	ng/L
Chlorodibromomethane	100	0	0	ug/L
Chloroform	1,600	0	1.3	ug/L
DDT	0.002	0.000	0	ng/L
1,4-dichlorobenzene	220	0	0	ug/L
3,3-dichlorobenzidine	0.097	0.000	0	ug/L
1,2-dichloroethane	330	0	0	ug/L
Dichlorobromomethane	74	0	0	ug/L
Dichloromethane (methylene chloride)	5,400	0	0	ug/L
1,3-dichloropropene	110	0	0	ug/L
Dieldrin	0.00048	0.00000	0	ng/L

Effluent Limitations Based on Basin Plan and California Ocean Plan (2009)				
Constituent/Property	Limit: 30-Day Average (lbs/day)	2017 Mass Emissions (lbs/day)[1]	2017 Average Concentration	Units
2,4-dinitrotoluene	31	0	0	ug/L
1,2-diphenylhydrazine	1.9	0.0	0	ug/L
Halomethanes	1,600	0	0	ug/L
Heptachlor	0.0006	0.0000	0	ng/L
Heptachlor epoxide	0.00024	0.00000	0	ng/L
Hexachlorobenzene	0.0025	0.0000	0	ug/L
Hexachlorobutadiene	170	0	0	ug/L
Hexachloroethane	30	0	0	ug/L
N-nitrosodimethylamine	87	0	0	ug/L
N-nitrosodi-N-Propylamine	4.5	0.0	0	ug/L
N-nitrosodiphenylamine	30	0	0	ug/L
PAHs	0.11	0.00	0	ug/L
PCBs	0.00023	0.00000	0	ng/L
TCDD equivalents	0.000000048	0.000000000	0	pg/L
Tetrachloroethylene	28	0	0	ug/L
Toxaphene	0.0025	0.0000	0	ng/L
Trichloroethylene	320	0	0	ug/L
2,4,6-trichlorophenol	3.5	0.0	0	ug/L
Vinyl Chloride	430	0	0	ug/L

[1] Mass emissions is calculated assuming the density of effluent is 1. The mean constituent value and mean daily flow value over the year is used to compute the mass emissions, assuming that constant concentration over 365 days.

B. Discharge Limits

DISCHARGE SPECIFICATIONS from NPDES Permit No. CA0109045/RWQCB Order No. R9-2013-0006 effective on April 4, 2013 as amended by Order No. R9-2014-0071 with limits on pollutant discharges.

The discharge of effluent through the South Bay Ocean Outfall (E-001) shall maintain compliance with the following effluent limitations:

Effluent Limitations based on Secondary Treatment Standards

Constituent	Units	6-month Median	30-day Average	7-Day Average	Daily Maximum	Instantaneous Maximum
Biochemical Oxygen Demand(BOD_5)@ 20°C	mg/L		30	45		50
	lb/day		3,753	5,630		6,255
Total Suspended Solids	mg/L		30	45		50
	lb/day		3,753	5,630		6,255
pH	pH units		Within the limits of 6.0 - 9.0 at all times.			

Effluent Limitations based on Basin Plan and California Ocean Plan (2009)

Constituent	Units	6-month Median	30-day Average	7-Day Average	Daily Maximum	Instantaneous Maximum
Grease & Oil	mg/L		25	40		75
	lb/day		3,128	5,004		9,383
Settleable Solids	mL/L		1	1.5		3
Turbidity	NTU		75	100		225
Total Residual Chlorine(TRC)	mg/L	0.19			0.76	5.7
	lb/day	24			96	718
Copper, Total Recoverable	ug/L	98			960	2,700
	lb/day	12			120	340

Constituents that do not have reasonable potential or had inconclusive reasonable potential analysis results are referred to as performance goal constituents and are assigned the performace goals listed in the following table. Performance goal constituents shall also be monitored at E-001.

Performance Goals Based on 2009 California Ocean Plan				
Constituent	Units	6-month Median	Daily Maximum	Instantaneous Maximum
Arsenic	ug/L	480	2,800	7,400
	lb/day	60	350	920
Cadmium	ug/L	96	380	960
	lb/day	12	48	120
Chromium[2](Hexavalent)	ug/L	190	760	1900
	lb/day	24	96	240
Lead	ug/L	190	760	1,900
	lb/day	24	96	240
Mercury	ug/L	3.8	15.0	38
	lb/day	0.47	1.9	4.8
Nickel	ug/L	480	1,900	4,800
	lb/day	60	240	600
Selenium	ug/L	1,400	5,700	14,000
	lb/day	180	720	1800
Silver	ug/L	52	250	650
	lb/day	6.5	32	82
Zinc	ug/L	1,200	6,900	18,000
	lb/day	140	860	2300
Cyanide	mg/L	0.096	0.38	0.96
	lb/day	12	48	120
Ammonia (expressed as Nitrogen)	mg/L	57	230	570
	lb/day	7200	29,000	72,000
Acute Toxicity	TUa		3.1[3]	
Chronic Toxicity	TUc		96	
Phenolic Compounds(non-chlorinated)	ug/L	2,900	11,000	29,000
	lb/day	360	1400	3600
Chlorinated Phenolics	ug/L	96	380	960
	lb/day	12	48	120
Endosulfan	ng/L	860	1,700	2,600
	lb/day	0.11	0.21	0.32
Endrin	ng/L	190	380	570
	lb/day	0.024	0.048	0.072
HCH (hexachlorocyclohexanes)	ng/L	380	760	1,100
	lb/day	0.048	0.096	0.14
Radioactivity	Not to exceed limits specified in Title 17 California Code of Regulations Section 30253, Standards for Protection Against Radiation			

[2] Hexavalent Chromium limit met as Total Chromium.

[3] Permit shows $2.9x10^{-1}$ which reflects an apparent error in calculation as discussed with SDRWQCB staff. Correction to 3.1 TUa referenced by email of Friday, January 26, 2007 4:14 PM, From: Melissa Valdovinos [mailto:mvaldovinos@waterboards.ca.gov] To: Stebbins, Tim, [Tstebbins@sandiego.gov]

Performance Goals Based on 2009 California Ocean Plan Continued		
Constituent	Monthly Average (30-Day)	
	ug/L	lbs/day
Acrolein	21,000	2600
Antimony	110,000	14,000
Bis(2-chloroethoxy) methane	420	53
Bis(2-chloroisopropyl) ether	110,000	14,000
Chlorobenzene	54,000	6800
Chromium (III)[4]	18,000,000	2,300,000
di-n-butyl phthalate	330,000	42,000
Dichlorobenzenes	490,000	61,000
Diethyl phthalate	3,100,000	390,000
Dimethyl phthalate	78,000,000	9,800,000
4,6-dinitro-2-methylphenol	21,000	2600
2,4-dinitrophenol	3800	480
Ethylbenzene	390,000	49,000
Fluoranthene	1,400	180
Hexachlorocyclopentadiene	5,500	690
Nitrobenzene	470	59
Thallium	190	24
Toluene	8,100,000	1,000,000
Tributyltin	0.13	0.020
1,1,1-trichloroethane	52,000,000	6,500,000
Acrylonitrile	9.6	1.2
Benzene	560	71
Benzidine	0.0066	82,000
Beryllium	3.1	0.39
Bis(2-chloroethyl)ether	4.3	0.54
Bis(2-ethylhexyl)phthalate	330	42
Carbon Tetrachloride	86	11
Chloroform	12,000	1500
1,4-dichlorobenzene	1,700	210
3,3-dichlorobenzidine	0.77	0.097
1,2-dichloroethane	2,700	330
1,1-dichloroethylene	86	11
Dichlorobormomethane	590	74
Dichloromethane	43,000	5400
1,3-dichloropropene	850	110
2,4-dinitrotoluene	250	31
1,2-diphenylhydrazine	15	1.9
Halomethanes	12,000	1500

Performance Goals Based on 2009 California Ocean Plan Continued		
Constituent	Monthly Average (30-Day)	
	ug/L	lbs/day
Hexachlorobenzene	0.02	0.0025
Hexachlorobutadiene	1,300	170
Hexachloroethane	240	30
Isophorone	70,000	8700
N-nitrosodimethylamine	700	87
N-nitrosodi-N-propylamine	36	4.5
N-nitrosodiphenylamine	240	30
PAHs	0.84	0.11
1,1,2,2-tetrachloroethane	220	27
Tetrachloroethylene	190	24
Trichloroethylene	2,600	320
1,1,2-trichloroethane	900	110
2,4,6-trichlorophenol	28	3.5
Vinyl Chloride	3,400	430

	ng/L	lbs/day
Aldrin	2.1	0.00026
Chlordane	2,200,000	0.00027
DDT	16	0.0026
Dieldrin	3.8	0.00048
Heptachlor	48	.00060
Heptachlor Epoxide	1.9	0.00024
PCBs	1.8	0.00023
Toxaphene	200	0.0025

	pg/L	lbs/day
TCDD equivalents	0.37	0.000000047

[4] Chromium (III) limit is met by Total Chromium.

C. Influent and Effluent Data Summaries

The results of all analyses performed on the SBWRP influent and effluent are summarized in tables with monthly and annual averages (and in some cases annual totals) calculated. Data that have been reevaluated as discussed in Section 1.E are explicitly indicated. All other tables and charts include all data.

SOUTH BAY WATER RECLAMATION PLANT
SEWAGE INFLUENT and EFFLUENT

Annual 2017

Biochemical Oxygen Demand Concentration
(24-hour composite)

Month/ Units:	Influent Flow (MGD)	Daily Influent Value (mg/L)	Daily Influent Value (lbs/Day)	Effluent Flow (MGD)	Daily Effluent Value (mg/L)	Daily Effluent Value (lbs/Day)	Percent Removal BOD (%)
JANUARY -2017	7.27	402	24374	6.20	9	465	97.8
FEBRUARY -2017	7.32	357	21794	6.24	8	416	97.8
MARCH -2017	7.88	331	21753	5.72	10	477	97.0
APRIL -2017	7.90	341	22467	3.04	<2	0	100.0
MAY -2017	7.76	324	20969	3.64	4	121	98.8
JUNE -2017	7.89	328	21583	2.54	4	85	98.8
JULY -2017	7.63	297	18899	1.91	4	64	98.7
AUGUST -2017	7.37	292	17948	1.63	3	41	99.0
SEPTEMBER-2017	6.97	339	19706	1.99	4	66	98.8
OCTOBER -2017	6.98	332	19327	2.09	3	52	99.1
NOVEMBER -2017	6.94	272	15743	3.53	5	147	98.2
DECEMBER -2017	6.82	303	17234	3.32	6	166	98.0
Average	7.39	327	20150	3.49	5	175	98.5

Annual Mass Emissions are calculated from monthly averages of flow for BOD, whereas
Monthly Report average mass emissions are calculated from average daily mass emissions.

ND=not detected

SOUTH BAY WATER RECLAMATION PLANT
SEWAGE INFLUENT and EFFLUENT

Annual 2017

Total Suspended Solids Concentration
(24-hour composite)

Month/ Units:	Influent Flow (MGD)	Daily Influent TSS (mg/L)	Daily Influent VSS (mg/L)	Percent VSS (%)	Daily Influent Mass Emission (lbs/Day)
JANUARY -2017	7.27	278	256	92.1	16856
FEBRUARY -2017	7.32	279	259	92.8	17033
MARCH -2017	7.88	272	250	91.9	17876
APRIL -2017	7.90	285	264	92.6	18778
MAY -2017	7.76	273	256	93.8	17668
JUNE -2017	7.89	285	264	92.6	18754
JULY -2017	7.63	290	263	90.7	18454
AUGUST -2017	7.37	276	258	93.5	16965
SEPTEMBER-2017	6.97	270	247	91.5	15695
OCTOBER -2017	6.98	270	247	91.5	15718
NOVEMBER -2017	6.94	279	253	90.7	16148
DECEMBER -2017	6.82	295	275	93.2	16779
Average	7.39	279	258		17227

Total Suspended Solids Concentration
(24-hour composite)

Month/ Units:	Effluent Flow (MGD)	Daily Effluent TSS (mg/L)	Daily Effluent VSS (mg/L)	Percent VSS (%)	Daily Effluent Mass Emission (lbs/Day)	Percent Removal TSS (%)	Percent Removal VSS (%)
JANUARY -2017	6.20	6.8	6.1	89.7	352	97.6	97.6
FEBRUARY -2017	6.24	8.0	7.2	90.0	416	97.1	97.2
MARCH -2017	5.72	9.1	8.3	91.2	434	96.7	96.7
APRIL -2017	3.04	<2.5	ND	*	0	100.0	100.0
MAY -2017	3.64	3.0	2.7	90.0	91	98.9	98.9
JUNE -2017	2.54	2.8	2.6	92.9	59	99.0	99.0
JULY -2017	1.91	4.1	3.7	90.2	65	98.6	98.6
AUGUST -2017	1.63	<2.5	<2.5	*	0	100.0	100.0
SEPTEMBER-2017	1.99	3.3	2.7	81.8	55	98.8	98.9
OCTOBER -2017	2.09	2.5	<2.5	0.0	44	99.1	100.0
NOVEMBER -2017	3.53	5.6	4.9	87.5	165	98.0	98.1
DECEMBER -2017	3.32	6.4	5.7	89.1	177	97.8	97.9
Average	3.49	4.3	3.7		155	98.5	98.6

*= undetermined, the percent VSS was not calculated because TSS and VSS results were below the MDL.

Annual Mass Emissions are calculated from monthly averages of flow and TSS, whereas
Monthly Report average mass emissions are calculated from average daily mass emissions.

VSS= Volatile Suspended Solids
TSS= Total Suspended Solids

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT

Annual 2017

Effluent to Ocean Outfall
(SB_OUTFALL_01)

Analyte:	Flow	pH	Settleable Solids	Biochemical Oxygen Demand	Total Suspended Solids	Volatile Suspended Solids	Total Dissolved Solids
Units:	(mgd)	(pH)	(ml/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
JANUARY -2017	6.20	7.23	0.0	9	6.8	6.1	1050
FEBRUARY -2017	6.24	7.21	0.0	8	8.0	7.2	1090
MARCH -2017	5.72	7.25	0.0	10	9.1	8.3	1080
APRIL -2017	3.04	7.18	0.0	<2	<2.5	0.0	918
MAY -2017	3.64	7.20	0.0	4	3.0	2.7	981
JUNE -2017	2.54	7.24	0.0	4	2.8	2.6	1040
JULY -2017	1.91	7.30	0.0	4	4.1	3.7	978
AUGUST -2017	1.63	7.32	0.0	3	<2.5	<2.5	997
SEPTEMBER-2017	1.99	7.19	0.0	4	3.3	2.7	986
OCTOBER -2017	2.09	7.17	0.0	3	2.5	<2.5	1030
NOVEMBER -2017	3.53	7.14	0.0	5	5.6	4.9	983
DECEMBER -2017	3.32	7.21	0.0	6	6.4	5.7	1030
Average	3.49	7.22	0.0	5	4.3	3.7	1014

Analyte:	Oil & Grease	Outfall Temperature	Residual Chlorine	Turbidity	Dissolved Oxygen
Units:	(mg/L)	(°C)	(mg/L)	(NTU)	(mg/L)
JANUARY -2017	2.4	22.7	<0.03	2.84	2.39
FEBRUARY -2017	2.9	22.6	<0.03	3.09	2.38
MARCH -2017	3.4	23.4	<0.03	3.59	1.70
APRIL -2017	3.8	24.5	<0.03	0.79	1.78
MAY -2017	5.2	25.0	<0.03	1.48	1.92
JUNE -2017	2.6	25.9	0.04	1.52	3.23
JULY -2017	2.6	27.4	<0.03	1.96	4.05
AUGUST -2017	2.7	27.3	<0.03	1.25	4.97
SEPTEMBER-2017	2.3	27.6	<0.03	1.64	2.21
OCTOBER -2017	3.7	26.7	<0.03	1.43	1.49
NOVEMBER -2017	2.9	25.8	<0.03	2.14	2.13
DECEMBER -2017	3.5	24.0	<0.03	2.68	3.42
Average	3.2	25.2	0.003	2.03	2.64

ND=not detected; NR=not required

SOUTH BAY WATER RECLAMATION PLANT

Annual 2017

Influent to Plant
(SB_INF_02)

Analyte:	Flow	pH	Total Dissolved Solids	Biochemical Oxygen Demand	Total Suspended Solids	Volatile Suspended Solids	Turbidity
Units:	(mgd)	(pH)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(NTU)
JANUARY -2017	7.27	NR	1060	402	278	256	NR
FEBRUARY -2017	7.32	7.55	1040	357	279	259	152
MARCH -2017	7.88	NR	1120	331	272	250	NR
APRIL -2017	7.90	NR	973	341	285	264	NR
MAY -2017	7.76	7.66	990	324	273	256	175
JUNE -2017	7.89	NR	1040	328	285	264	NR
JULY -2017	7.63	NR	973	297	290	263	NR
AUGUST -2017	7.37	7.42	1040	292	276	258	195
SEPTEMBER-2017	6.97	NR	1030	339	270	247	NR
OCTOBER -2017	6.98	7.61	1030	332	270	247	200
NOVEMBER -2017	6.94	NR	1020	272	279	253	NR
DECEMBER -2017	6.82	NR	1050	303	295	275	NR
Average	7.39	7.56	1031	327	279	258	181

ND=not detected; NR=not required

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Trace Metals

Annual 2017

Analyte:	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic
MAX_MDL Units:	23.8 UG/L	23.8 UG/L	2.44 UG/L	2.44 UG/L	1.84 UG/L	1.84 UG/L
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:						2800
JANUARY -2017	589	37.2	ND	ND	ND	ND
FEBRUARY -2017	619	45.8	3.35	2.57	1.43	0.48
MARCH -2017	913	43.7	3.10	2.93	1.78	ND
APRIL -2017	577	ND	ND	ND	1.01	0.59
MAY -2017	590	ND	ND	ND	1.01	0.39
JUNE -2017	668	45.8	ND	ND	1.15	0.66
JULY -2017	1170	50.8	3.15	ND	0.68	ND
AUGUST -2017	356	ND	ND	ND	ND	ND
SEPTEMBER-2017	481	23.9	1.09	0.77	ND	ND
OCTOBER -2017	623	172	1.45	0.66	ND	ND
NOVEMBER -2017	747	171	1.07	0.60	ND	ND
DECEMBER -2017	894	28.1	1.16	0.67	ND	ND
AVERAGE	686	51.5	1.20	0.68	0.59	0.18

Analyte:	Barium	Barium	Beryllium	Beryllium	Boron	Boron
MAX_MDL Units:	.7 UG/L	.7 UG/L	.12 UG/L	.12 UG/L	1.4 UG/L	1.4 UG/L
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:						
JANUARY -2017	129	89.3	ND	ND	361	368
FEBRUARY -2017	106	24.5	ND	ND	356	372
MARCH -2017	93.6	56.4	ND	ND	360	323
APRIL -2017	74.0	46.7	ND	ND	370	386
MAY -2017	72.6	43.4	ND	ND	351	659
JUNE -2017	115	46.1	ND	ND	401	382
JULY -2017	89.3	41.6	ND	ND	360	352
AUGUST -2017	66.1	39.6	ND	ND	367	379
SEPTEMBER-2017	78.1	44.2	ND	ND	447	514
OCTOBER -2017	95.4	43.8	ND	ND	369	370
NOVEMBER -2017	72.9	38.1	ND	ND	497	465
DECEMBER -2017	79.2	45.0	ND	ND	354	360
AVERAGE	89.3	46.6	0.00	0.00	383	411

Analyte:	Cadmium	Cadmium	Chromium	Chromium	Cobalt	Cobalt
MAX_MDL Units:	.26 UG/L	.26 UG/L	.54 UG/L	.54 UG/L	.24 UG/L	.24 UG/L
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:		48		760		
JANUARY -2017	ND	ND	3.25	0.78	0.84	0.53
FEBRUARY -2017	0.39	ND	12.9	1.48	1.33	0.82
MARCH -2017	ND	ND	3.00	0.90	1.01	0.63
APRIL -2017	ND	ND	2.62	1.04	0.81	0.51
MAY -2017	ND	ND	4.58	0.65	0.81	0.47
JUNE -2017	0.35	ND	5.35	0.62	1.07	0.56
JULY -2017	0.27	ND	3.89	0.83	1.35	0.63
AUGUST -2017	ND	ND	2.71	0.79	0.73	0.76
SEPTEMBER-2017	ND	ND	1.82	0.49	0.34	0.14
OCTOBER -2017	0.15	ND	3.24	0.64	0.51	0.21
NOVEMBER -2017	0.13	ND	1.78	0.36	0.41	0.15
DECEMBER -2017	0.14	ND	2.38	0.39	0.48	0.20
AVERAGE	0.12	0.00	3.96	0.75	0.81	0.47

ND= not detected; NR= not required

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Trace Metals

Annual 2017

Analyte:	Copper	Copper	Iron	Iron	Lead	Lead
MAX_MDL Units:	2.16 UG/L	2.16 UG/L	17.1 UG/L	17.1 UG/L	1.68 UG/L	1.68 UG/L
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:		960				760
JANUARY -2017	106	15.6	792	97.9	ND	ND
FEBRUARY -2017	103	5.49	12100	194	3.69	ND
MARCH -2017	76.4	15.3	883	116	2.04	ND
APRIL -2017	84.3	11.5	750	46.5	ND	ND
MAY -2017	96.3	10.4	884	37.3	1.72	ND
JUNE -2017	127	9.61	2560	32.3	4.07	2.53
JULY -2017	86.7	9.81	1110	60.4	ND	ND
AUGUST -2017	82.4	7.72	523	28.9	2.30	ND
SEPTEMBER-2017	85.4	8.66	595	48.2	1.36	0.18
OCTOBER -2017	95.0	8.58	727	67.6	1.81	0.33
NOVEMBER -2017	92.4	6.11	601	52.7	1.94	0.32
DECEMBER -2017	95.6	7.76	750	52.6	1.44	0.27
AVERAGE	94.2	9.71	1856	69.5	1.70	0.30

Analyte:	Manganese	Manganese	Mercury	Mercury	Molybdenum	Molybdenum
MAX_MDL Units:	.78 UG/L	.78 UG/L	.005 UG/L	.002 UG/L	.32 UG/L	.32 UG/L
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:				15.0		
JANUARY -2017	115	33.6	0.104	0.003	8.21	4.11
FEBRUARY -2017	195	133	0.084	0.003	11.4	7.99
MARCH -2017	98.6	34.1	0.090	0.006	8.41	6.37
APRIL -2017	104	14.9	0.165	ND	6.59	4.27
MAY -2017	107	13.0	0.192	0.004	6.24	3.57
JUNE -2017	121	17.9	0.176	0.002	11.1	5.45
JULY -2017	102	53.1	0.126	0.003	6.15	3.10
AUGUST -2017	110	13.1	0.164	0.002	6.42	3.02
SEPTEMBER-2017	112	15.4	0.092	0.002	5.48	2.88
OCTOBER -2017	122	18.2	0.117	0.008	6.62	3.72
NOVEMBER -2017	110	29.2	0.063	0.004	5.29	2.39
DECEMBER -2017	139	59.6	0.107	0.006	6.44	3.56
AVERAGE	120	36.3	0.123	0.004	7.36	4.20

Analyte:	Nickel	Nickel	Selenium	Selenium	Silver	Silver
MAX_MDL Units:	.53 UG/L	.53 UG/L	.662 UG/L	.662 UG/L	.73 UG/L	.73 UG/L
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:		1900		5700		250
JANUARY -2017	4.66	2.96	1.79	0.86	ND	ND
FEBRUARY -2017	8.90	7.61	1.43	0.93	ND	ND
MARCH -2017	4.14	2.74	1.89	0.86	ND	ND
APRIL -2017	4.90	2.56	1.13	0.61	1.20	ND
MAY -2017	6.18	2.53	1.29	0.35	ND	ND
JUNE -2017	6.37	2.70	1.53	0.31	1.07	ND
JULY -2017	5.24	3.26	1.08	0.32	0.98	ND
AUGUST -2017	4.52	2.41	3.32	ND	ND	0.88
SEPTEMBER-2017	4.10	2.81	1.59	ND	0.07	ND
OCTOBER -2017	4.53	2.71	3.27	1.78	0.29	ND
NOVEMBER -2017	4.86	2.69	2.04	ND	0.10	ND
DECEMBER -2017	4.51	2.03	1.03	ND	0.19	ND
AVERAGE	5.24	3.08	1.78	0.50	0.33	0.07

ND= not detected; NR= not required

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Trace Metals

Annual 2017

Analyte:	Thallium	Thallium	Vanadium	Vanadium	Zinc	Zinc
MAX_MDL Units:	3.12 UG/L	3.12 UG/L	2.77 UG/L	2.77 UG/L	4.19 UG/L	4.19 UG/L
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:						6900
JANUARY -2017	ND	ND	2.68	ND	204	54.0
FEBRUARY -2017	ND	ND	3.32	0.72	200	19.4
MARCH -2017	ND	ND	6.38	3.36	163	55.9
APRIL -2017	ND	ND	2.72	1.59	174	57.9
MAY -2017	ND	ND	3.09	1.28	184	59.7
JUNE -2017	ND	ND	2.53	1.01	227	54.9
JULY -2017	ND	ND	3.18	1.03	210	57.7
AUGUST -2017	ND	ND	1.07	0.96	132	58.8
SEPTEMBER-2017	ND	ND	6.43	4.59	147	56.4
OCTOBER -2017	ND	ND	4.59	ND	179	54.4
NOVEMBER -2017	ND	ND	3.96	3.30	168	59.7
DECEMBER -2017	ND	ND	3.17	ND	149	41.2
AVERAGE	0.00	0.00	3.59	1.49	178	52.5

ND= not detected; NR= not required

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Cations

ANNUAL 2017

Analyte:	Calcium		Magnesium		Lithium	
MDL/ Units:	.134 mg/L		.132 mg/L		.01 mg/L	
Source:	INF	EFF	INF	EFF	INF	EFF
JANUARY -2017	81.9	79.4	29.6	28.4	0.046	0.045
FEBRUARY -2017	74.4	77.7	28.4	28.9	0.041	0.035
MARCH -2017	77.3	68.6	33.2	29.6	0.031	0.025^
APRIL -2017	60.0	62.8	23.3	23.3	0.024	0.021
MAY -2017	60.4	56.1	29.4	23.6	0.020*	0.018*
JUNE -2017	55.1	58.5	28.1	27.5	0.026^	0.025^
JULY -2017	55.4	56.8	26.0	25.5	0.022	0.023
AUGUST -2017	52.9	54.0	24.3	23.9	0.022^	0.015
SEPTEMBER-2017	57.2	59.0	27.4	27.3	0.021	0.020
OCTOBER -2017	61.5	61.8	29.7	27.8	0.018	0.020
NOVEMBER -2017	59.8	60.1	30.7	30.3	0.018	0.018
DECEMBER -2017	60.2	63.8	31.6	31.9	0.018	0.015
Average:	63.0	63.2	28.5	27.3	0.027	0.024

Analyte:	Sodium		Potassium	
MDL/ Units:	1.89 mg/L		.84 mg/L	
Source:	INF	EFF	INF	EFF
JANUARY -2017	189	198	17.8	16.1
FEBRUARY -2017	211	194	18.5	16.7
MARCH -2017	218	199	16.9	14.8
APRIL -2017	182	190	18.7	16.7
MAY -2017	235	192	23.4	18.7
JUNE -2017	204	204	19.9	18.1
JULY -2017	196	208	19.8	18.6
AUGUST -2017	193	201	19.1	17.6
SEPTEMBER-2017	209	220	19.5	18.9
OCTOBER -2017	227	220	20.7	17.9
NOVEMBER -2017	212	226	21.6	21.5
DECEMBER -2017	224	229	22.0	20.2
Average:	208	207	19.8	18.0

*= Relative percent difference of sample duplicates outside method acceptance criteria; value is not used in average calculations.

^= Method blank value above the IDL; sample result not included in average calculations.

ND=not detected

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Anions

ANNUAL 2017

Analyte:	Bromide	Bromide	Chloride	Chloride	Fluoride	Fluoride
MDL:	.1	.1	7	7	.05	.05
Units:	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
Source:	INFLUENT	EFFLUENT	INFLUENT	EFFLUENT	INFLUENT	EFFLUENT
JANUARY -2017	0.5	0.3	258	251	0.36	0.43
FEBRUARY -2017	0.4	0.3	256	272	0.44	0.49
MARCH -2017	0.6	0.4	284	249	0.45	0.54
APRIL -2017	0.5	0.4	241	242	0.40	0.52
MAY -2017	0.6	0.5	252	242	0.47	0.45
JUNE -2017	0.6	0.5	264	274	0.49	0.56
JULY -2017	0.5	0.4	242	267	0.46	0.57
AUGUST -2017	0.5	0.5	262	268	0.49	0.60
SEPTEMBER-2017	0.4	0.5	267	279	0.47	0.60
OCTOBER -2017	0.4	0.4	282	292	0.50	0.59
NOVEMBER -2017	0.3	0.4	275	275	0.48	0.60
DECEMBER -2017	0.9	0.7	282	291	0.36	0.59
AVERAGE	0.5	0.4	264	267	0.45	0.55

Analyte:	Nitrate	Nitrate	O-Phosphate	O-Phosphate	Sulfate	Sulfate
MDL:	.04	.04	.2	.2	9	9
Units:	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
Source:	INFLUENT	EFFLUENT	INFLUENT	EFFLUENT	INFLUENT	EFFLUENT
JANUARY -2017	0.14	32.3	8.6	3.3	181	242
FEBRUARY -2017	<0.04	38.6	10.1	0.6	181	227
MARCH -2017	0.05	50.2	10.0	10.3	145	179
APRIL -2017	0.06	39.0	11.8	1.9	103	149
MAY -2017	0.13	44.5	11.1	1.4	98	127
JUNE -2017	0.06	38.2	10.7	3.2	102	143
JULY -2017	0.10	35.5	11.3	4.7	88	123
AUGUST -2017	1.09	42.1	10.8	7.0	90	118
SEPTEMBER-2017	0.09	39.8	10.3	9.1	99	130
OCTOBER -2017	3.75	55.7	8.7	4.9	104	132
NOVEMBER -2017	2.32	41.0	10.1	9.3	103	125
DECEMBER -2017	2.44	41.7	11.7	11.5	104	135
AVERAGE	0.85	41.6	10.4	5.6	117	153

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Ammonia-Nitrogen and Total Cyanides

ANNUAL 2017

Analyte:	Ammonia-N	Ammonia-N	Total Cyanide	Total Cyanide
MDL/ Units:	.3 MG/L	.3 MG/L	.005 MG/L	.005 MG/L
Source:	SB_INF_02	SB_OUTFALL_01	SB_INF_02	SB_OUTFALL_01
JANUARY -2017	39.4	ND	ND	ND
FEBRUARY -2017	37.8	ND	ND	0.002
MARCH -2017	28.3	0.6	ND	ND
APRIL -2017	38.8	1.7	ND	ND
MAY -2017	34.4	ND	0.002	ND
JUNE -2017	39.1	ND	ND	0.003
JULY -2017	39.2	ND	<0.005	<0.005
AUGUST -2017	40.4	ND	<0.005	<0.005
SEPTEMBER-2017	35.2	ND	0.005	0.005
OCTOBER -2017	38.6	ND	<0.005	<0.005
NOVEMBER -2017	37.4	ND	<0.005	<0.005
DECEMBER -2017	35.6	ND	<0.005	<0.005
Average:	37.0	0.2	0.001	0.001

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
Radioactivity
Effluent to the Ocean (SB_OUTFALL_01)

Analyzed by: FGL Environmental Agricultural Analytical

Annual 2017

Month	Gross Alpha Radiation	Gross Beta Radiation
JANUARY -2017	4.7 ± 2.7	6.5 ± 1.9
FEBRUARY -2017	4.3 ± 1.9	10.6 ± 1.5
MARCH -2017	5.5 ± 1.5	6.8 ± 1.2
APRIL -2017	4.7 ± 2.3	6.7 ± 1.6
MAY -2017	4.6 ± 1.7	8.0 ± 1.5
JUNE -2017	6.0 ± 1.9	9.2 ± 1.6
JULY -2017	2.8 ± 1.4	8.1 ± 1.4
AUGUST -2017	3.9 ± 1.5	9.9 ± 1.3
SEPTEMBER-2017	5.0 ± 2.2	8.2 ± 1.6
OCTOBER -2017	2.2 ± 1.5	14.6 ± 2.1
NOVEMBER -2017	4.4 ± 1.8	8.6 ± 1.5
DECEMBER -2017	2.7 ± 1.9	11.0 ± 2.0
AVERAGE	4.1 ± 1.8	9.0 ± 1.6

Units in picocuries/liter (pCi/L)

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: EFFLUENT (SB_OUTFALL_01)

CHLORINATED PESTICIDE ANALYSIS, EPA Method 608 (WITH ADDITIONS)

ANNUAL 2017

Source:			EFFLUENT												
Date:			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP^	OCT^	NOV	DEC	
Analyte	MDL	Units													Avg
Aldrin	9.4	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	11	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	15	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	50	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	100	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	38	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p,p-DDD	16	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND*	ND	ND	ND
p,p-DDE	10	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND*	ND	ND	ND
p,p-DDT	50	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o,p-DDD	10	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
o,p-DDE	20	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
o,p-DDT	5	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Heptachlor	50	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	50	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	45	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	45	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha Chlordene		NG/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Chlordene		NG/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxychlordane	1.21	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	ND	ND	ND
Trans Nonachlor	5	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Cis Nonachlor	5	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Alpha Endosulfan	11	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beta Endosulfan	17	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND*	ND	ND	ND
Endosulfan Sulfate	460	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	50	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	73	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mirex	5	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Methoxychlor	460	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
Toxaphene	2500	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1016	2500	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1221	2500	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1232	2100	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1242	2000	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1248	1400	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1254	2500	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1260	2500	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1262	500	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	ND	ND	ND
Aldrin + Dieldrin	11	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Hexachlorocyclohexanes	100	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
DDT and derivatives	50	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Chlordane + related cmpds.	45	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Polychlorinated biphenyls	2500	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Endosulfans	460	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptachlors	50	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Chlorinated Hydrocarbons	2500	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0

*= One or more quality control criteria not met; value not used in average calculations.

ND= not detected; NA= not analyzed

Standards for alpha and gamma chlordene are no longer available in the U.S. for the analysis of these compounds.

^= Analyzed by: BABCOCK Laboratories, Inc.

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: INFLUENT (SB_INF_02)

CHLORINATED PESTICIDE ANALYSIS, EPA Method 608 (WITH ADDITIONS)

ANNUAL 2017

Source:			INFLUENT				
Date:			FEB	MAY	AUG	OCT^	
Analyte	MDL	Units					Avg
Aldrin	9.4	NG/L	ND	ND	ND	ND*	ND
Dieldrin	11	NG/L	ND	ND	ND	ND*	ND
BHC, Alpha isomer	15	NG/L	ND	ND	ND	ND*	ND
BHC, Beta isomer	50	NG/L	ND	ND	ND	ND	ND
BHC, Gamma isomer	100	NG/L	ND	ND	ND	ND	ND
BHC, Delta isomer	38	NG/L	ND	ND	ND	ND*	ND
p,p-DDD	16	NG/L	ND	ND	ND	ND*	ND
p,p-DDE	10	NG/L	ND	ND	ND	ND*	ND
p,p-DDT	50	NG/L	ND	ND	ND	ND	ND
o,p-DDD	10	NG/L	ND	ND	ND	ND	ND
o,p-DDE	20	NG/L	ND	ND	ND	ND	ND
o,p-DDT	5	NG/L	ND	ND	ND	ND	ND
Heptachlor	50	NG/L	ND	ND	ND	ND	ND
Heptachlor epoxide	50	NG/L	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	45	NG/L	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	45	NG/L	ND	ND	ND	ND	ND
Alpha Chlordene		NG/L	NA	NA	NA	NA	NA
Gamma Chlordene		NG/L	NA	NA	NA	NA	NA
Oxychlordane	1.21	NG/L	ND	ND	ND	NA	ND
Trans Nonachlor	5	NG/L	ND	ND	ND	ND	ND
Cis Nonachlor	5	NG/L	ND	ND	ND	ND	ND
Alpha Endosulfan	11	NG/L	ND	ND	ND	ND*	ND
Beta Endosulfan	17	NG/L	ND	ND	ND	ND*	ND
Endosulfan Sulfate	460	NG/L	ND	ND	ND	ND*	ND
Endrin	50	NG/L	ND	ND	ND	ND	ND
Endrin aldehyde	73	NG/L	ND	ND	ND	ND	ND
Mirex	5	NG/L	ND	ND	ND	ND	ND
Methoxychlor	460	NG/L	ND	ND	ND	NA	ND
Toxaphene	2500	NG/L	ND	ND	ND	ND	ND
PCB 1016	2500	NG/L	ND	ND	ND	ND	ND
PCB 1221	2500	NG/L	ND	ND	ND	ND	ND
PCB 1232	2100	NG/L	ND	ND	ND	ND	ND
PCB 1242	2000	NG/L	ND	ND	ND	ND	ND
PCB 1248	1400	NG/L	ND	ND	ND	ND	ND
PCB 1254	2500	NG/L	ND	ND	ND	ND	ND
PCB 1260	2500	NG/L	ND	ND	ND	ND	ND
PCB 1262	500	NG/L	ND	ND	ND	NA	ND
Aldrin + Dieldrin	11	NG/L	0	0	0	0*	0
Hexachlorocyclohexanes	100	NG/L	0	0	0	0	0
DDT and derivatives	50	NG/L	0	0	0	0	0
Chlordane + related cmpds.	45	NG/L	0	0	0	0	0
Polychlorinated biphenyls	2500	NG/L	0	0	0	0	0
Endosulfans	460	NG/L	0	0	0	0*	0
Heptachlors	50	NG/L	0	0	0	0	0
Chlorinated Hydrocarbons	2500	NG/L	0	0	0	0	0

*= One or more quality control criteria not met; value not used in average calculations.

ND= not detected; NA= not analyzed

Standards for alpha and gamma chlordene are no longer available in the U.S. for the analysis of these compounds.

^= Analyzed by: BABCOCK Laboratories, Inc.

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Organophosphorus Pesticides - EPA Method 614/622 (with additions)

ANNUAL 2017

Source:			Influent	Influent	Effluent	Effluent
Date:			02-MAY-2017	03-OCT-2017	02-MAY-2017	03-OCT-2017
Analyte	MDL	Units	P936651	P973142	P936656	P973147
Demeton O	.01	UG/L	ND	ND	ND	ND
Demeton S	.04	UG/L	ND	ND	ND	ND
Diazinon	.02	UG/L	ND	ND	ND	ND
Guthion	.03	UG/L	ND	ND	ND	ND
Malathion	.02	UG/L	DNQ0.07	ND	ND	ND
Parathion	.01	UG/L	ND	ND	ND	ND
Dichlorvos	.02	UG/L	2.30	ND	ND	ND
Disulfoton	.01	UG/L	ND	ND	ND	ND
Stirophos	.01	UG/L	ND	ND	ND	ND
Coumaphos	.05	UG/L	ND	ND	ND	ND
Chlorpyrifos	.02	UG/L	ND	ND	ND	ND
Thiophosphorus Pesticides	.03	UG/L	0.00	0.00	0.00	0.00
Demeton -O, -S	.04	UG/L	0.00	0.00	0.00	0.00
Total Organophosphorus Pesticides	.05	UG/L	2.30	0.00	0.00	0.00

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Tributyl Tin Analysis

Annual 2017

Source:			INFLUENT				
Date:			FEB	MAY	AUG	OCT	
Analyte	MDL	Units					Average
Dibutyltin	.0092	UG/L	ND	ND	ND	ND	ND
Monobutyltin	.013	UG/L	ND	ND	ND	ND	ND
Tributyltin	.0045	UG/L	ND	ND	ND	ND	ND

Source:			EFFLUENT				
Date:			FEB	MAY	AUG	OCT	
Analyte	MDL	Units					Average
Dibutyltin	.0092	UG/L	ND	ND	ND	ND	ND
Monobutyltin	.013	UG/L	ND	ND	ND	ND	ND
Tributyltin	.0045	UG/L	ND	ND	ND	ND	ND

ND=not detected; NR=not required

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

PRIORITY POLLUTANT ANALYSIS-ACID EXTRACTABLE COMPOUNDS, EPA Method 625

ANNUAL 2017

Source:			INFLUENT				
Date:			FEB	MAY	AUG	OCT	
Analyte	MDL	Units					Avg
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND	ND
Phenol	1.76	UG/L	49.3	33.0	47.5	51.6	45.4
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	49.3	33.0	47.5	51.6	45.4
Total Phenols	2.16	UG/L	49.3	33.0	47.5	51.6	45.4
Additional analytes determined							
2-Methylphenol	2.15	UG/L	ND	ND	ND	ND	ND
3-Methylphenol(4-MP is unresolved)		UG/L	NA	NA	NA	NA	NA
4-Methylphenol(3-MP is unresolved)	2.11	UG/L	133	81.2	92.5	93.3	100
2,4,5-Trichlorophenol	1.66	UG/L	ND	ND	ND	ND	ND

Source:			EFFLUENT												
Date:			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Analyte	MDL	Units													Avg
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND*	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	1.76	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Phenols	2.16	UG/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Additional analytes determined															
2-Methylphenol	2.15	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-Methylphenol(4-MP is unresolved)		UG/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol(3-MP is unresolved)	2.11	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	1.66	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

*= Recovery of compound in internal check and matrix spike sample outside method acceptance limits; value is not used in average calculations.

ND= not detected; NA= not analyzed

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: EFFLUENT (SB_OUTFALL_01)

Priority Pollutants Base/Neutral Compounds, EPA Method 625

ANNUAL 2017

Source:			EFFLUENT				
Date:			JAN	MAY	AUG	OCT	
Analyte	MDL	Units					Avg
Bis-(2-chloroethyl) ether	1.38	UG/L	ND	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16	UG/L	ND	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16	UG/L	ND	ND	ND	ND	ND
Nitrobenzene	1.6	UG/L	ND	ND	ND	ND	ND
Hexachloroethane	1.32	UG/L	ND	ND	ND	ND	ND
Isophorone	1.53	UG/L	ND	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01	UG/L	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52	UG/L	ND	ND	ND	ND	ND
Naphthalene	1.65	UG/L	ND	ND	ND	ND	ND
Hexachlorobutadiene	1.64	UG/L	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25	UG/L	ND	ND	ND	ND	ND
Acenaphthylene	1.77	UG/L	ND	ND	ND	ND	ND
Dimethyl phthalate	1.44	UG/L	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53	UG/L	ND	ND	ND	ND	ND
Acenaphthene	1.8	UG/L	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36	UG/L	ND	ND	ND	ND	ND
Fluorene	1.61	UG/L	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57	UG/L	ND	ND	ND	ND	ND
Diethyl phthalate	3.05	UG/L	ND	ND	ND	ND	ND
N-nitrosodiphenylamine	3.48	UG/L	ND	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4	UG/L	ND	ND	ND	ND	ND
Hexachlorobenzene	1.48	UG/L	ND	ND	ND	ND	ND
Phenanthrene	1.34	UG/L	ND	ND	ND	ND	ND
Anthracene	1.29	UG/L	ND	ND	ND	ND	ND
Di-n-butyl phthalate	3.96	UG/L	ND	ND	ND	ND	ND
N-nitrosodimethylamine	1.27	UG/L	ND	ND	ND	ND	ND
Fluoranthene	1.33	UG/L	ND	ND	ND	ND	ND
Pyrene	1.43	UG/L	ND	ND	ND	ND	ND
Benzidine	1.52	UG/L	ND	ND*	ND	ND	ND
Butyl benzyl phthalate	2.84	UG/L	ND	ND	ND	ND	ND
Chrysene	1.16	UG/L	ND	ND	ND	ND	ND
Benzo[a]anthracene	1.1	UG/L	ND	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96	UG/L	9.87	ND	ND	<8.96	<8.96
Di-n-octyl phthalate	1	UG/L	ND	ND	ND	ND	ND
3,3-Dichlorobenzidine	2.44	UG/L	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49	UG/L	ND	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35	UG/L	ND	ND	ND	ND	ND
Benzo[a]pyrene	1.25	UG/L	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14	UG/L	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01	UG/L	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09	UG/L	ND	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37	UG/L	ND	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77	UG/L	0.0	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96	UG/L	9.87	0.0	0.0	0.0	0.0
Additional analytes determined							
1-Methylnaphthalene	2.18	UG/L	ND	ND	ND	ND	ND
2-Methylnaphthalene	2.14	UG/L	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16	UG/L	ND	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18	UG/L	ND	ND	ND	ND	ND
1-Methylphenanthrene	1.46	UG/L	ND	ND	ND	ND	ND
Benzo[e]pyrene	1.44	UG/L	ND	ND	ND	ND	ND
Perylene	1.41	UG/L	ND	ND	ND	ND	ND
Biphenyl	2.29	UG/L	ND	ND	ND	ND	ND

*= Recovery of compound in internal check and matrix spike sample outside method acceptance limits; value is not used in average calculations.
ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02)

Priority Pollutants Base/Neutral Compounds, EPA Method 625

ANNUAL 2017

Source:			INFLUENT				
Date:			FEB	MAY	AUG	OCT	
Analyte	MDL	Units					Avg
Bis-(2-chloroethyl) ether	1.38	UG/L	ND	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16	UG/L	ND	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16	UG/L	ND	ND	ND	ND	ND
Nitrobenzene	1.6	UG/L	ND	ND	ND	ND	ND
Hexachloroethane	1.32	UG/L	ND	ND	ND	ND	ND
Isophorone	1.53	UG/L	ND	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01	UG/L	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52	UG/L	ND	ND	ND	ND	ND
Naphthalene	1.65	UG/L	ND	ND	ND	ND	ND
Hexachlorobutadiene	1.64	UG/L	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25	UG/L	ND	ND	ND	ND	ND
Acenaphthylene	1.77	UG/L	ND	ND	ND	ND	ND
Dimethyl phthalate	1.44	UG/L	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53	UG/L	ND	ND	ND	ND	ND
Acenaphthene	1.8	UG/L	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36	UG/L	ND	ND	ND	ND	ND
Fluorene	1.61	UG/L	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57	UG/L	ND	ND	ND	ND	ND
Diethyl phthalate	3.05	UG/L	5.0	3.7	ND	6.3	3.8
N-nitrosodiphenylamine	3.48	UG/L	ND	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4	UG/L	ND	ND	ND	ND	ND
Hexachlorobenzene	1.48	UG/L	ND	ND	ND	ND	ND
Phenanthrene	1.34	UG/L	ND	ND	ND	ND	ND
Anthracene	1.29	UG/L	ND	ND	ND	ND	ND
Di-n-butyl phthalate	3.96	UG/L	ND	ND	ND	ND	ND
N-nitrosodimethylamine	1.27	UG/L	ND	ND	ND	ND	ND
Fluoranthene	1.33	UG/L	ND	ND	ND	ND	ND
Pyrene	1.43	UG/L	ND	ND	ND	ND	ND
Benzidine	1.52	UG/L	ND	ND*	ND	ND	ND
Butyl benzyl phthalate	2.84	UG/L	ND	ND	ND	ND	ND
Chrysene	1.16	UG/L	ND	ND	ND	ND	ND
Benzo[a]anthracene	1.1	UG/L	ND	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96	UG/L	16.3	ND	9.3	13.9	9.9
Di-n-octyl phthalate	1	UG/L	ND	2.4	ND	ND	0.6
3,3-Dichlorobenzidine	2.44	UG/L	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49	UG/L	ND	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35	UG/L	ND	ND	ND	ND	ND
Benzo[a]pyrene	1.25	UG/L	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14	UG/L	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01	UG/L	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09	UG/L	ND	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37	UG/L	ND	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77	UG/L	0.0	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96	UG/L	21.3	6.1	9.3	20.2	14.2

Additional analytes determined

1-Methylnaphthalene	2.18	UG/L	ND	ND	ND	ND	ND
2-Methylnaphthalene	2.14	UG/L	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16	UG/L	ND	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18	UG/L	ND	ND	ND	ND	ND
1-Methylphenanthrene	1.46	UG/L	ND	ND	ND	ND	ND
Benzo[e]pyrene	1.44	UG/L	ND	ND	ND	ND	ND
Perylene	1.41	UG/L	ND	ND	ND	ND	ND
Biphenyl	2.29	UG/L	ND	ND	ND	ND	ND

*= Recovery of compound in internal check and matrix spike sample outside method acceptance limits; value is not used in average calculations.
ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: EFFLUENT (SB_OUTFALL_01)

Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2017

Source:			EFFLUENT				
Date:			FEB	MAY	AUG	OCT	
Analyte	MDL	Units					Average
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND	ND
Chloromethane	.19	UG/L	ND	ND	ND	ND	ND
Vinyl chloride	.24	UG/L	ND	ND	ND	ND	ND
Bromomethane	.22	UG/L	DNQ0.27*	ND	DNQ0.44*	DNQ0.37*	ND
Chloroethane	.24	UG/L	ND	ND	ND	ND	ND
Trichlorofluoromethane	.26	UG/L	ND	ND	ND	ND	ND
Acrolein	.94	UG/L	ND	ND	ND	ND	ND
1,1-Dichloroethane	.28	UG/L	ND	ND	ND	ND	ND
Methylene chloride	.37	UG/L	DNQ0.6	DNQ0.3	ND	NQ0.48*	0.00
trans-1,2-dichloroethene	.34	UG/L	ND	ND	ND	ND	ND
1,1-Dichloroethene	.37	UG/L	ND	ND	ND	ND	ND
Acrylonitrile	.48	UG/L	ND	ND	ND	ND	ND
Chloroform	.3	UG/L	DNQ0.7	DNQ0.9	DNQ0.5	DNQ0.9	0.0
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND	ND
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND	ND
Benzene	.37	UG/L	ND	ND	ND	ND	ND
1,2-Dichloroethane	.32	UG/L	ND	ND	ND	ND	ND
Trichloroethene	.43	UG/L	ND	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND	ND
Bromodichloromethane	.37	UG/L	ND	ND	ND	ND	ND
2-Chloroethylvinyl ether	.25	UG/L	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND	ND
Toluene	.37	UG/L	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	.35	UG/L	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	.32	UG/L	ND	ND	ND	ND	ND
Tetrachloroethene	.4	UG/L	ND	ND	ND	ND	ND
Dibromochloromethane	.34	UG/L	ND	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND	ND
Bromoform	.36	UG/L	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	.33	UG/L	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	.47	UG/L	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	.36	UG/L	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52	UG/L	ND	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.36	UG/L	0.0	0.0	0.0	0.0	0.0
Total Dichlorobenzenes	.47	UG/L	0.0	0.0	0.0	0.0	0.0
Total Chloromethanes	.4	UG/L	0.0	0.0	0.0	0.0	0.0
Purgeable Compounds	.94	UG/L	0.0	0.0	0.0	0.0	0.0
Additional analytes determined							
Methyl Iodide	.32	UG/L	ND	ND	ND	ND	ND
Carbon disulfide	.37	UG/L	ND	ND	ND	ND	ND
Acetone	6.74	UG/L	ND	ND	ND	ND	ND
Allyl chloride	.44	UG/L	ND	ND	ND	ND	ND
Methyl tert-butyl ether	.36	UG/L	ND	ND	ND	ND	ND
Chloroprene	.09	UG/L	ND	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND	ND
2-Butanone	5.56	UG/L	ND	ND	ND	ND	ND
Methyl methacrylate	.32	UG/L	ND	ND	ND	ND	ND
2-Nitropropane	.49	UG/L	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	.39	UG/L	ND	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND	ND
ortho-xylene	.34	UG/L	ND	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND	ND
Benzyl chloride	.65	UG/L	ND	ND	ND	ND	ND

*= Method blank value above the MDL; result not used in average calculations.

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: INFLUENT (SB_INF_02)

Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2017

Source:			INFLUENT				
Date:			FEB	MAY	AUG	OCT	
Analyte	MDL	Units					Average
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND	ND
Chloromethane	.19	UG/L	ND	DNQ0.3	ND	ND	0.00
Vinyl chloride	.24	UG/L	ND	ND	ND	ND	ND
Bromomethane	.22	UG/L	ND	ND	DNQ0.4*	DNQ0.3*	ND
Chloroethane	.24	UG/L	ND	ND	ND	ND	ND
Trichlorofluoromethane	.26	UG/L	ND	ND	ND	ND	ND
Acrolein	.94	UG/L	ND	ND	ND	ND	ND
1,1-Dichloroethane	.28	UG/L	ND	ND	ND	ND	ND
Methylene chloride	.37	UG/L	2.49	DNQ0.9	DNQ0.8	*	0.63
trans-1,2-dichloroethene	.34	UG/L	ND	ND	ND	ND	ND
1,1-Dichloroethene	.37	UG/L	ND	ND	ND	ND	ND
Acrylonitrile	.48	UG/L	ND	ND	ND	ND	ND
Chloroform	.3	UG/L	DNQ1.4	2.1	DNQ1.2	3.1	1.3
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND	ND
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND	ND
Benzene	.37	UG/L	ND	ND	ND	ND	ND
1,2-Dichloroethane	.32	UG/L	ND	ND	ND	ND	ND
Trichloroethene	.43	UG/L	ND	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND	ND
Bromodichloromethane	.37	UG/L	ND	ND	ND	ND	ND
2-Chloroethylvinyl ether	.25	UG/L	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND	ND
Toluene	.37	UG/L	DNQ1.4	ND	DNQ0.5	DNQ0.9	0.00
trans-1,3-dichloropropene	.35	UG/L	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	.32	UG/L	ND	ND	ND	ND	ND
Tetrachloroethene	.4	UG/L	ND	ND	ND	ND	ND
Dibromochloromethane	.34	UG/L	ND	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND	ND
Bromoform	.36	UG/L	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	.33	UG/L	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	.47	UG/L	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	.36	UG/L	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52	UG/L	ND	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.36	UG/L	0.0	0.0	0.0	0.0	0.0
Total Dichlorobenzenes	.47	UG/L	0.0	0.0	0.0	0.0	0.0
Total Chloromethanes	.4	UG/L	2.49	2.1	0.0	3.1	1.93
Purgeable Compounds	.94	UG/L	2.49	2.1	0.0	3.1	1.93
Additional analytes determined							
Methyl Iodide	.32	UG/L	ND	ND	ND	ND	ND
Carbon disulfide	.37	UG/L	1.59	1.10	1.51	2.30	1.63
Acetone	6.74	UG/L	119	123	268	174	171
Allyl chloride	.44	UG/L	ND	ND	ND	ND	ND
Methyl tert-butyl ether	.36	UG/L	ND	ND	DNQ0.4	DNQ0.7	0.30
Chloroprene	.09	UG/L	ND	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND	ND
2-Butanone	5.56	UG/L	ND	ND	ND	ND	ND
Methyl methacrylate	.32	UG/L	ND	ND	ND	ND	ND
2-Nitropropane	.49	UG/L	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	.39	UG/L	ND	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND	ND
ortho-xylene	.34	UG/L	DNQ0.4	ND	ND	ND	0.12
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND	ND
Benzyl chloride	.65	UG/L	ND	ND	ND	ND	ND

*= Method blank value above the MDL; result not used in average calculations.

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: INFLUENT (SB_INF_02)

Dioxin and Furan Analysis

Annual 2017

Source:				INF	INF	INF	INF
Date:				JAN	FEB	MAR	APR
Analyte	MDL	Units	Equiv	P914905	P919279	P925886	P932507
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.607	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.891	PG/L	0.100	DNQ4.88	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.857	PG/L	0.010	25.1	DNQ20.1	DNQ16.0	DNQ18.6
octa CDD	1.2	PG/L	0.001	120	120	100	150
2,3,7,8-tetra CDF	.307	PG/L	0.100	ND	ND	DNQ2.19	DNQ3.03
1,2,3,7,8-penta CDF	.421	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.431	PG/L	0.500	ND	ND	DNQ2.01	ND
1,2,3,4,7,8-hexa CDF	.486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.663	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.556	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.489	PG/L	0.010	DNQ2.24	ND	DNQ1.89	DNQ3.05
1,2,3,4,7,8,9-hepta CDF	.69	PG/L	0.010	ND	ND	ND	ND
octa CDF	1.7	PG/L	0.001	DNQ5.66	DNQ6.71	DNQ5.55	DNQ6.73

Source:				INF	INF	INF	INF
Date:				MAY	JUN	JUL	AUG
Analyte	MDL	Units	Equiv	P936651	P946529	P957607	P959798
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.607	PG/L	0.500	ND	DNQ7.69	ND	ND
1,2,3,4,7,8_hexa_CDD	.808	PG/L	0.100	ND	DNQ3.09	ND	ND
1,2,3,6,7,8-hexa CDD	.891	PG/L	0.100	ND	DNQ8.87	DNQ7.58	DNQ13.7
1,2,3,7,8,9-hexa CDD	.756	PG/L	0.100	ND	DNQ6.89	ND	DNQ4.65
1,2,3,4,6,7,8-hepta CDD	.857	PG/L	0.010	33.5	131	54.1	112
octa CDD	1.2	PG/L	0.001	180	2500	240	320
2,3,7,8-tetra CDF	.307	PG/L	0.100	DNQ2.41	ND	ND	DNQ3.39
1,2,3,7,8-penta CDF	.421	PG/L	0.050	ND	ND	ND	DNQ2.06
2,3,4,7,8-penta CDF	.431	PG/L	0.500	ND	ND	ND	DNQ1.74
1,2,3,4,7,8-hexa CDF	.486	PG/L	0.100	ND	DNQ1.4	DNQ12.5	ND
1,2,3,6,7,8-hexa CDF	.521	PG/L	0.100	ND	DNQ3.87	DNQ1.87	DNQ9.96
1,2,3,7,8,9-hexa CDF	.663	PG/L	0.100	ND	DNQ1.14	ND	ND
2,3,4,6,7,8-hexa CDF	.556	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.489	PG/L	0.010	ND	DNQ14.4	DNQ7.8	DNQ9.11
1,2,3,4,7,8,9-hepta CDF	.69	PG/L	0.010	ND	ND	ND	ND
octa CDF	1.7	PG/L	0.001	DNQ7.92	DNQ21.0	DNQ13.2	DNQ14.5

Source:				INF	INF	INF	INF
Date:				SEP	OCT	NOV	DEC
Analyte	MDL	Units	Equiv	P972158	P973142	P982873	P989745
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.607	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.891	PG/L	0.100	ND	DNQ5.14	DNQ2.87	ND
1,2,3,7,8,9-hexa CDD	.756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.857	PG/L	0.010	DNQ12.4	74.1	55.5	DNQ20.8
octa CDD	1.2	PG/L	0.001	83.0	260	410	130
2,3,7,8-tetra CDF	.307	PG/L	0.100	DNQ1.39	DNQ2.64	ND	DNQ1.1
1,2,3,7,8-penta CDF	.421	PG/L	0.050	ND	DNQ1.41	ND	ND
2,3,4,7,8-penta CDF	.431	PG/L	0.500	ND	DNQ1.82	ND	ND
1,2,3,4,7,8-hexa CDF	.486	PG/L	0.100	ND	DNQ1.32	ND	ND
1,2,3,6,7,8-hexa CDF	.521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.663	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.556	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.489	PG/L	0.010	DNQ3.47	DNQ4.21	DNQ2.9	DNQ2.42
1,2,3,4,7,8,9-hepta CDF	.69	PG/L	0.010	ND	ND	ND	ND
octa CDF	1.7	PG/L	0.001	DNQ5.47	DNQ6.66	ND	DNQ4.99

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.
Above are permit required CDD/CDF isomers.

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: INFLUENT (SB_INF_02)

Dioxin and Furan Analysis

Annual 2017

Source:				EFF	EFF	EFF	EFF
Date:				JAN	FEB	MAR	APR
Analyte	MDL	Units	Equiv	P914909	P919284	P925890	P932511
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.607	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.891	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.857	PG/L	0.010	ND	ND	ND	ND
octa CDD	1.2	PG/L	0.001	ND	ND	DNQ6.86	ND
2,3,7,8-tetra CDF	.307	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	.421	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.431	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.663	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.556	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.489	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.69	PG/L	0.010	ND	ND	ND	ND
octa CDF	1.7	PG/L	0.001	ND	ND	ND	ND

Source:				EFF	EFF	EFF	EFF
Date:				MAY	JUN	JUL	AUG
Analyte	MDL	Units	Equiv	P936656	P946533	P957611	P959803
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.607	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.891	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.857	PG/L	0.010	ND	ND	DNQ2.81	ND
octa CDD	1.2	PG/L	0.001	ND	DNQ5.57	DNQ7.08	ND
2,3,7,8-tetra CDF	.307	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	.421	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.431	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.663	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.556	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.489	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.69	PG/L	0.010	ND	ND	ND	ND
octa CDF	1.7	PG/L	0.001	ND	ND	ND	ND

Source:				EFF	EFF	EFF	EFF
Date:				SEP	OCT	NOV	DEC
Analyte	MDL	Units	Equiv	P972162	P973147	P982877	P989746
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.607	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.891	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.857	PG/L	0.010	DNQ2.99	ND	ND	ND
octa CDD	1.2	PG/L	0.001	DNQ6.08	DNQ5.22	ND	DNQ5.06
2,3,7,8-tetra CDF	.307	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	.421	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.431	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.663	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.556	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.489	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.69	PG/L	0.010	ND	ND	ND	ND
octa CDF	1.7	PG/L	0.001	ND	ND	ND	ND

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.
Above are permit required CDD/CDF isomers.

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: INFLUENT (SB_INF_02)

Dioxin and Furan Analysis

Annual 2017

Source:				INF	INF	INF	INF
				TCCD	TCCD	TCCD	TCCD
Date:				JAN	FEB	MAR	APR
Analyte	MDL	Units	Equiv	P914905	P919279	P925886	P932507
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.607	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.891	PG/L	0.100	DNQ0.488	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.857	PG/L	0.010	0.251	DNQ0.201	DNQ0.16	DNQ0.186
octa CDD	1.2	PG/L	0.001	0.12	0.12	0.1	0.15
2,3,7,8-tetra CDF	.307	PG/L	0.100	ND	ND	DNQ0.219	DNQ0.303
1,2,3,7,8-penta CDF	.421	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.431	PG/L	0.500	ND	ND	DNQ1.005	ND
1,2,3,4,7,8-hexa CDF	.486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.663	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.556	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.489	PG/L	0.010	DNQ0.022	ND	DNQ0.019	DNQ0.031
1,2,3,4,7,8,9-hepta CDF	.69	PG/L	0.010	ND	ND	ND	ND
octa CDF	1.7	PG/L	0.001	DNQ0.006	DNQ0.007	DNQ0.006	DNQ0.007

Souce:				INF	INF	INF	INF
				TCCD	TCCD	TCCD	TCCD
Date:				MAY	JUN	JUL	AUG
Analyte	MDL	Units	Equiv	P936651	P946529	P957607	P959798
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.607	PG/L	0.500	ND	DNQ3.845	ND	ND
1,2,3,4,7,8_hexa_CDD	.808	PG/L	0.100	ND	DNQ0.309	ND	ND
1,2,3,6,7,8-hexa CDD	.891	PG/L	0.100	ND	DNQ0.887	DNQ0.758	DNQ1.37
1,2,3,7,8,9-hexa CDD	.756	PG/L	0.100	ND	DNQ0.689	ND	DNQ0.465
1,2,3,4,6,7,8-hepta CDD	.857	PG/L	0.010	0.335	1.31	0.541	1.12
octa CDD	1.2	PG/L	0.001	0.18	2.5	0.24	0.32
2,3,7,8-tetra CDF	.307	PG/L	0.100	DNQ0.241	ND	ND	DNQ0.339
1,2,3,7,8-penta CDF	.421	PG/L	0.050	ND	ND	ND	DNQ0.103
2,3,4,7,8-penta CDF	.431	PG/L	0.500	ND	ND	ND	DNQ0.87
1,2,3,4,7,8-hexa CDF	.486	PG/L	0.100	ND	DNQ0.14	DNQ1.25	ND
1,2,3,6,7,8-hexa CDF	.521	PG/L	0.100	ND	DNQ0.387	DNQ0.187	DNQ0.996
1,2,3,7,8,9-hexa CDF	.663	PG/L	0.100	ND	DNQ0.114	ND	ND
2,3,4,6,7,8-hexa CDF	.556	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.489	PG/L	0.010	ND	DNQ0.144	DNQ0.078	DNQ0.091
1,2,3,4,7,8,9-hepta CDF	.69	PG/L	0.010	ND	ND	ND	ND
octa CDF	1.7	PG/L	0.001	DNQ0.008	DNQ0.021	DNQ0.013	DNQ0.015

Source:				INF	INF	INF	INF
				TCCD	TCCD	TCCD	TCCD
Date:				SEP	OCT	NOV	DEC
Analyte	MDL	Units	Equiv	P972158	P973142	P982873	P989745
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.607	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.891	PG/L	0.100	ND	DNQ0.514	DNQ0.287	ND
1,2,3,7,8,9-hexa CDD	.756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.857	PG/L	0.010	DNQ0.124	0.741	0.555	DNQ0.208
octa CDD	1.2	PG/L	0.001	0.083	0.26	0.41	0.13
2,3,7,8-tetra CDF	.307	PG/L	0.100	DNQ0.139	DNQ0.264	ND	DNQ0.11
1,2,3,7,8-penta CDF	.421	PG/L	0.050	ND	DNQ0.071	ND	ND
2,3,4,7,8-penta CDF	.431	PG/L	0.500	ND	DNQ0.91	ND	ND
1,2,3,4,7,8-hexa CDF	.486	PG/L	0.100	ND	DNQ0.132	ND	ND
1,2,3,6,7,8-hexa CDF	.521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.663	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.556	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.489	PG/L	0.010	DNQ0.035	DNQ0.042	DNQ0.029	DNQ0.024
1,2,3,4,7,8,9-hepta CDF	.69	PG/L	0.010	ND	ND	ND	ND
octa CDF	1.7	PG/L	0.001	DNQ0.005	DNQ0.007	ND	DNQ0.005

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.
Above are permit required CDD/CDF isomers.

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: INFLUENT (SB_INF_02)

Dioxin and Furan Analysis

Annual 2017

Effluent Limit (TCDD): 0.37 pg/L (30-day Average)

Source:				EFF	EFF	EFF	EFF
				TCCD	TCCD	TCCD	TCCD
Date:				JAN	FEB	MAR	APR
Analyte	MDL	Units	Equiv	P914909	P919284	P925890	P932511
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.607	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.891	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.857	PG/L	0.010	ND	ND	ND	ND
octa CDD	1.2	PG/L	0.001	ND	ND	DNQ0.007	ND
2,3,7,8-tetra CDF	.307	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	.421	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.431	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.663	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.556	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.489	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.69	PG/L	0.010	ND	ND	ND	ND
octa CDF	1.7	PG/L	0.001	ND	ND	ND	ND

Source:				EFF	EFF	EFF	EFF
				TCCD	TCCD	TCCD	TCCD
Date:				MAY	JUN	JUL	AUG
Analyte	MDL	Units	Equiv	P936656	P946533	P957611	P959803
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.607	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.891	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.857	PG/L	0.010	ND	ND	DNQ0.028	ND
octa CDD	1.2	PG/L	0.001	ND	DNQ0.006	DNQ0.007	ND
2,3,7,8-tetra CDF	.307	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	.421	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.431	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.663	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.556	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.489	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.69	PG/L	0.010	ND	ND	ND	ND
octa CDF	1.7	PG/L	0.001	ND	ND	ND	ND

Source:				EFF	EFF	EFF	EFF
				TCCD	TCCD	TCCD	TCCD
Date:				SEP	OCT	NOV	DEC
Analyte	MDL	Units	Equiv	P972162	P973147	P982877	P989746
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.607	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.891	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.857	PG/L	0.010	DNQ0.03	ND	ND	ND
octa CDD	1.2	PG/L	0.001	DNQ0.006	DNQ0.005	ND	DNQ0.005
2,3,7,8-tetra CDF	.307	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	.421	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.431	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.663	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.556	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.489	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.69	PG/L	0.010	ND	ND	ND	ND
octa CDF	1.7	PG/L	0.001	ND	ND	ND	ND

ND= not detected; Above are permit required CDD/CDF isomers.
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

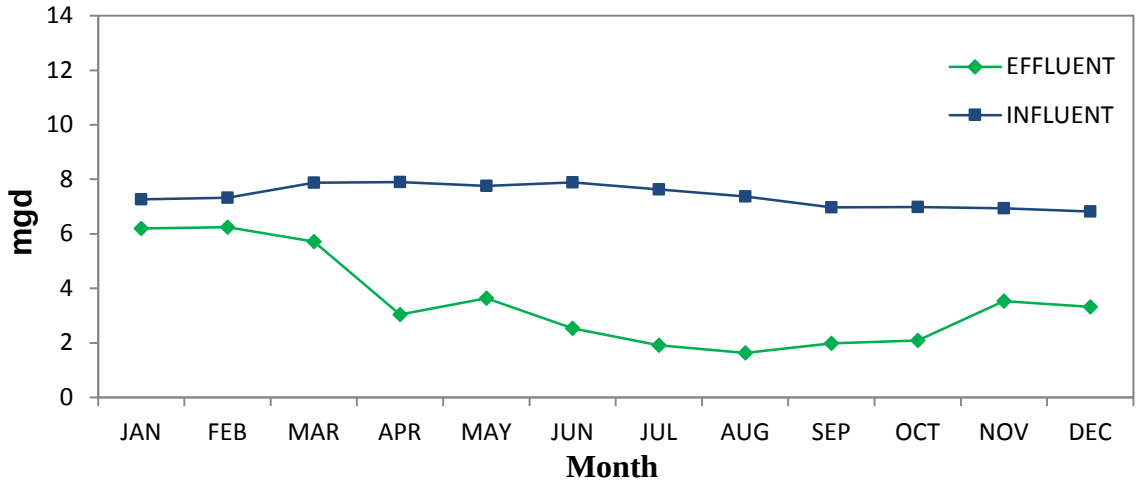
D. Influent and Effluent Graphs

Graphs of monthly averages for permit parameters with measurable concentration averages.

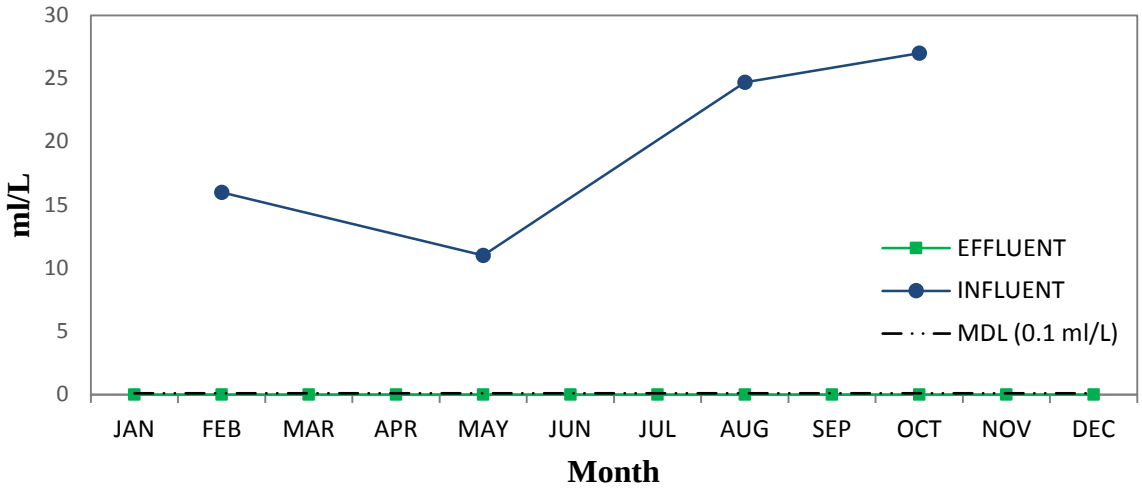
Where possible, the influent and effluent values of a given parameter have been included on the same graph so that removals and other relationships are readily apparent. Please note that many of the graphs are on expanded scales. Please note that many of the graphs are on expanded scales where the y-axes (concentration) do not start at zero, but instead are scaled to highlight the range of concentrations where variation takes place. These expanded scales make differences and some trends obvious that might normally not be noticed; however, they also may inadvertently place more weight on relatively minor changes or trends than deserved. Frequent reference to the scales and the actual differences in concentrations is therefore necessary.

2017 South Bay Water Reclamation Plant
Monthly Averages

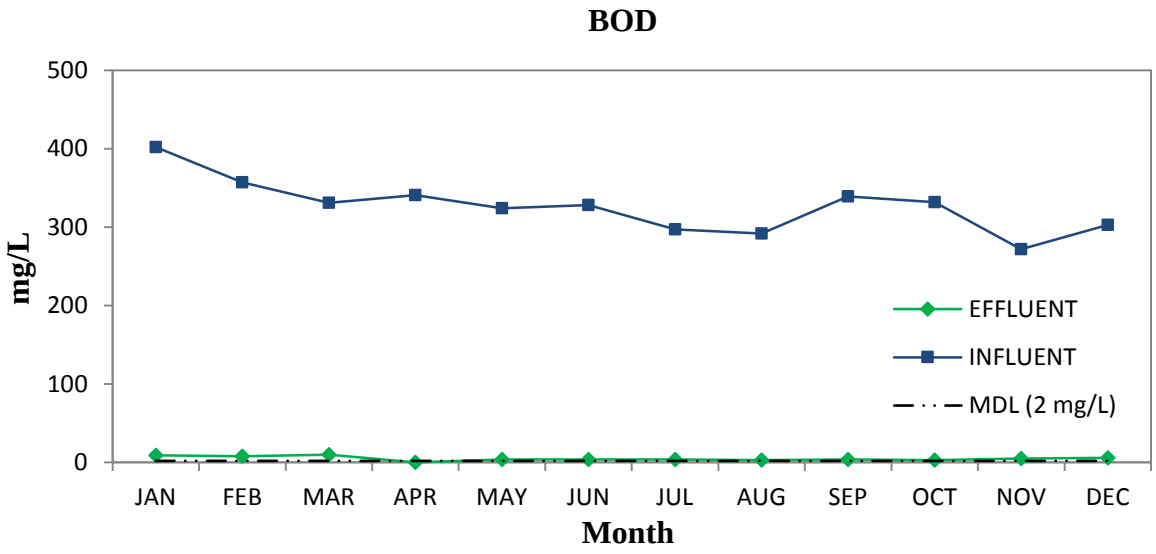
Flows

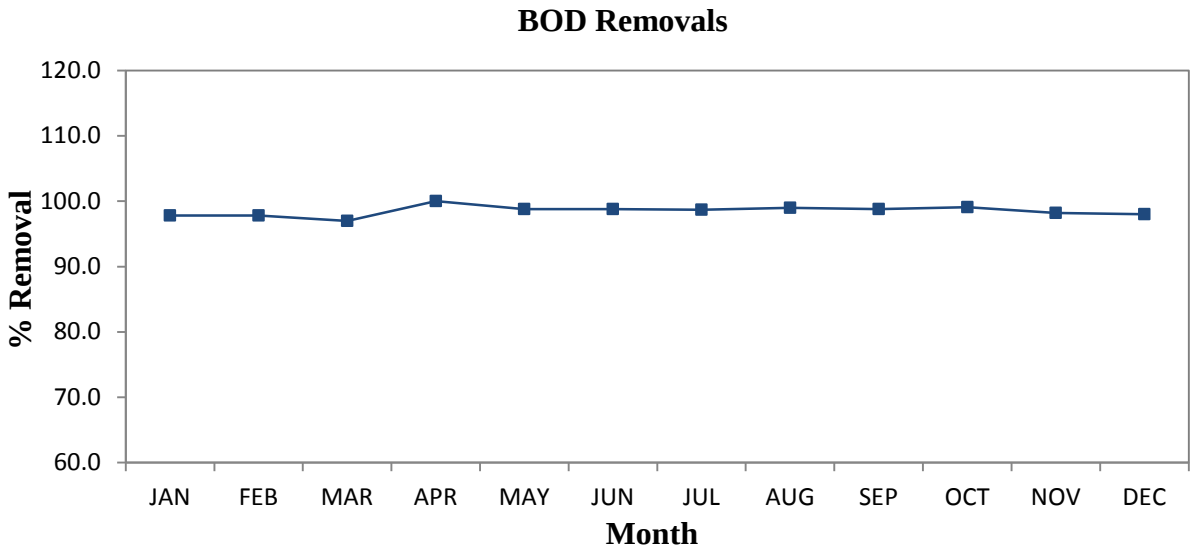


Settleables Solids

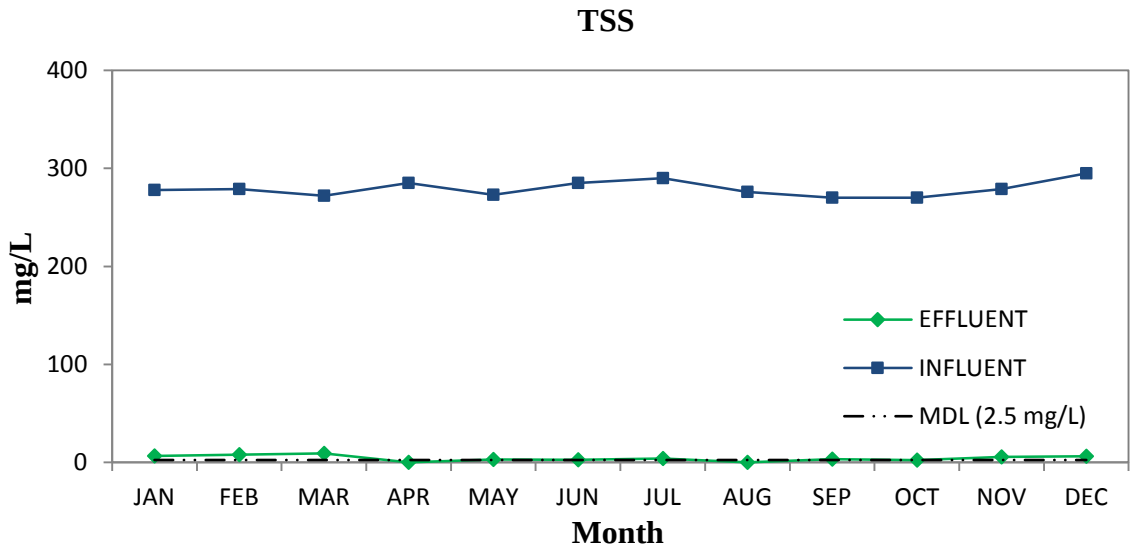


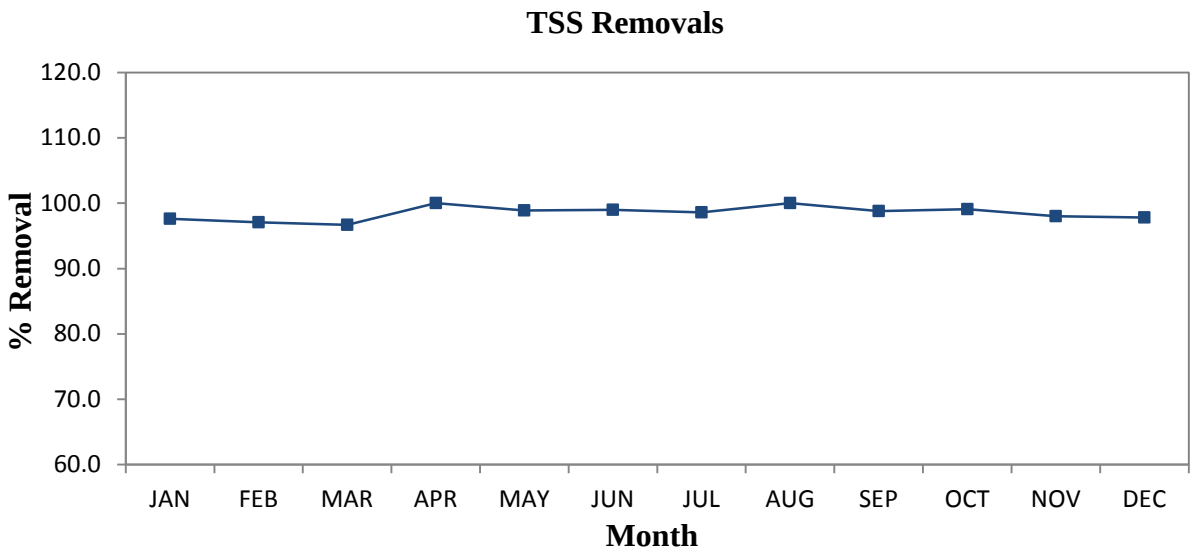
2017 South Bay Water Reclamation Plant
Monthly Averages





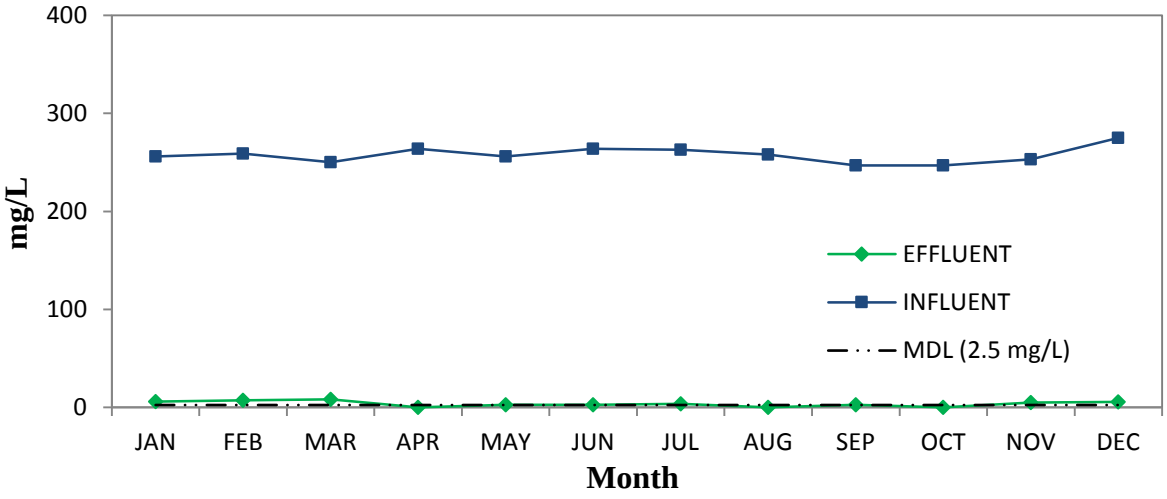
2017 South Bay Water Reclamation Plant
Monthly Averages



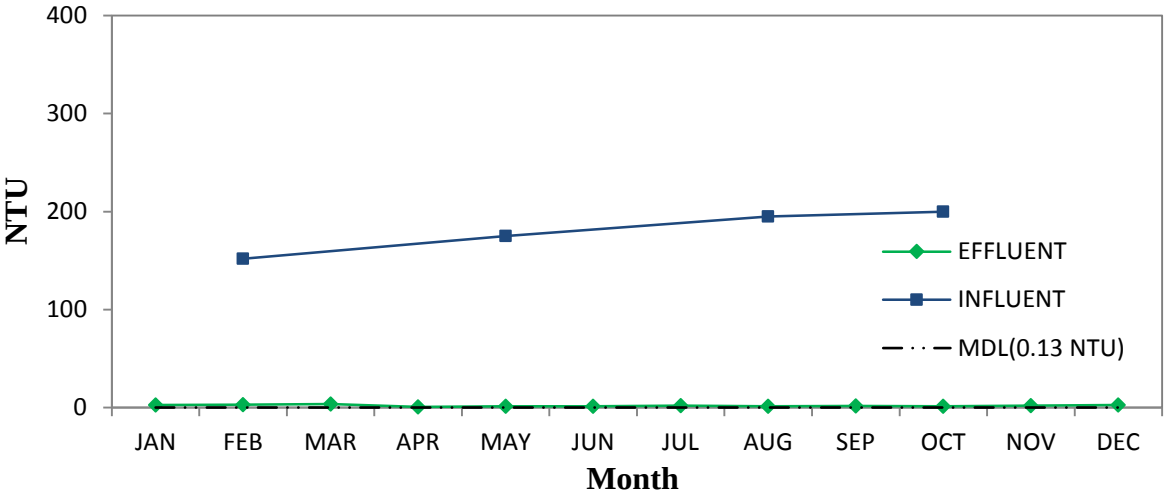


2017 South Bay Water Reclamation Plant
Monthly Averages

VSS

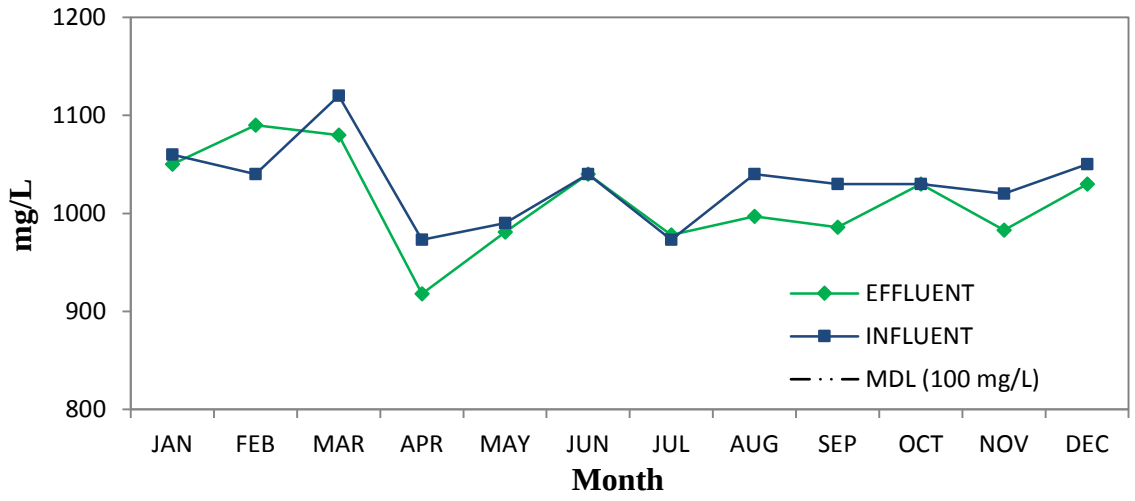


Turbidity

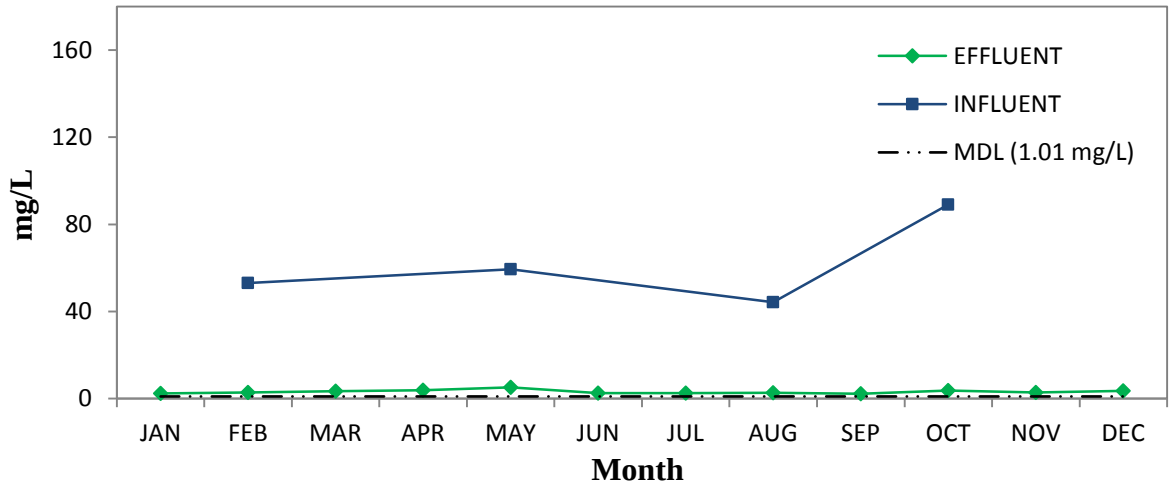


2017 South Bay Water Reclamation Plant
Monthly Averages

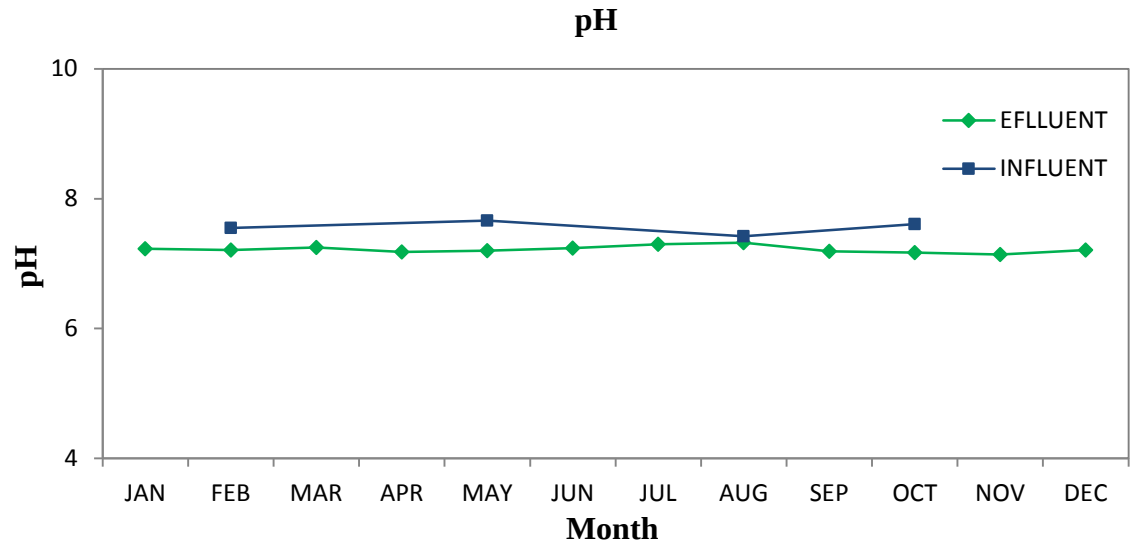
TDS

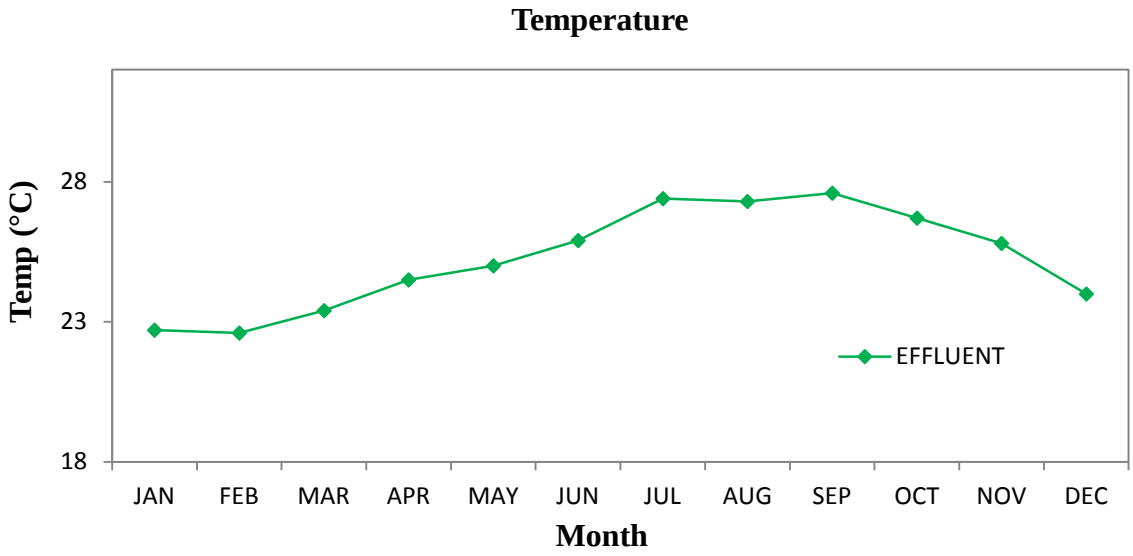


Oil & Grease



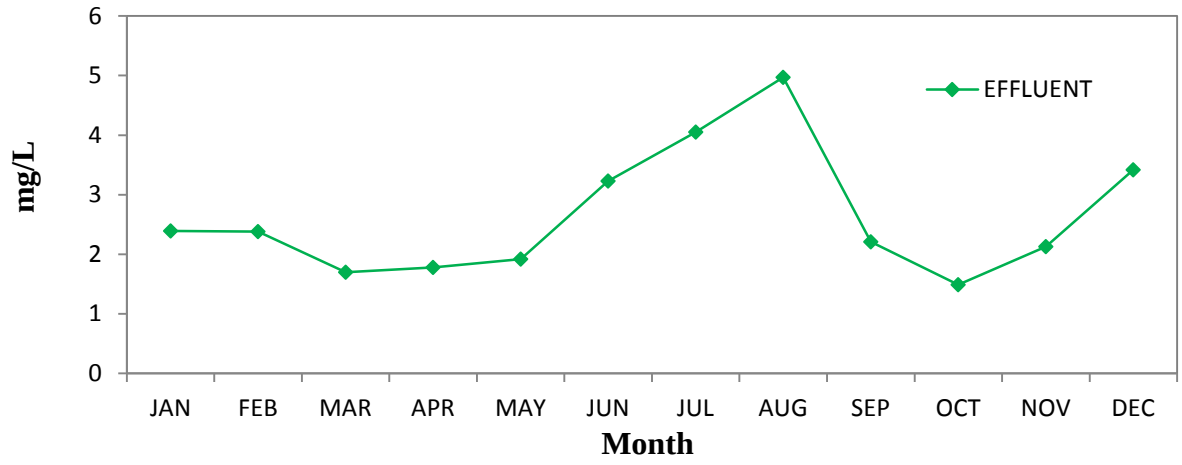
2017 South Bay Water Reclamation Plant
Monthly Averages



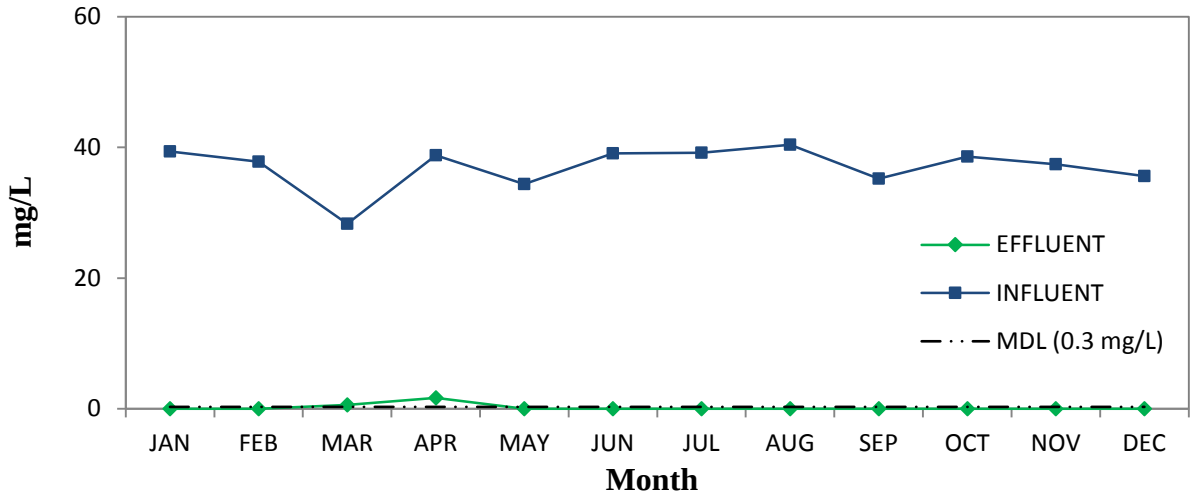


2017 South Bay Water Reclamation Plant
Monthly Averages

Dissolved Oxygen

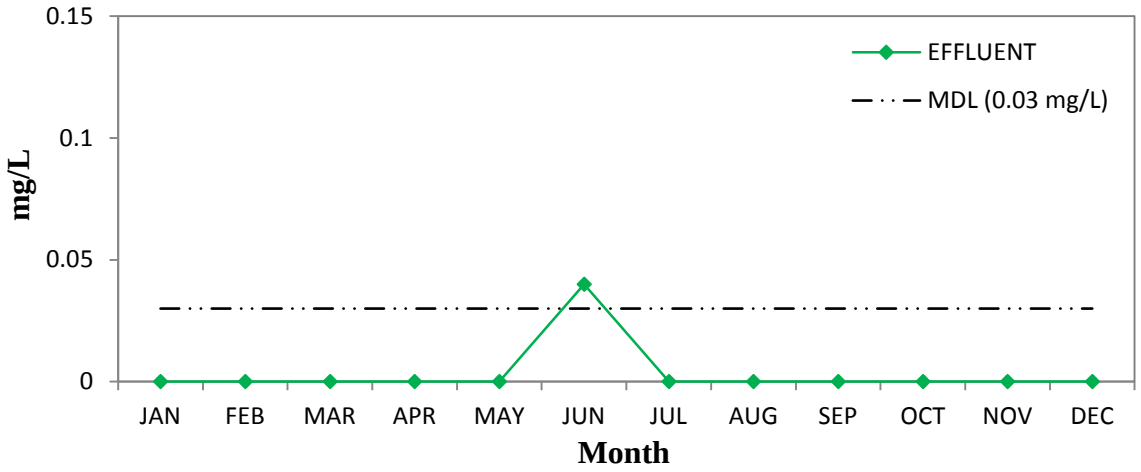


Ammonia-N

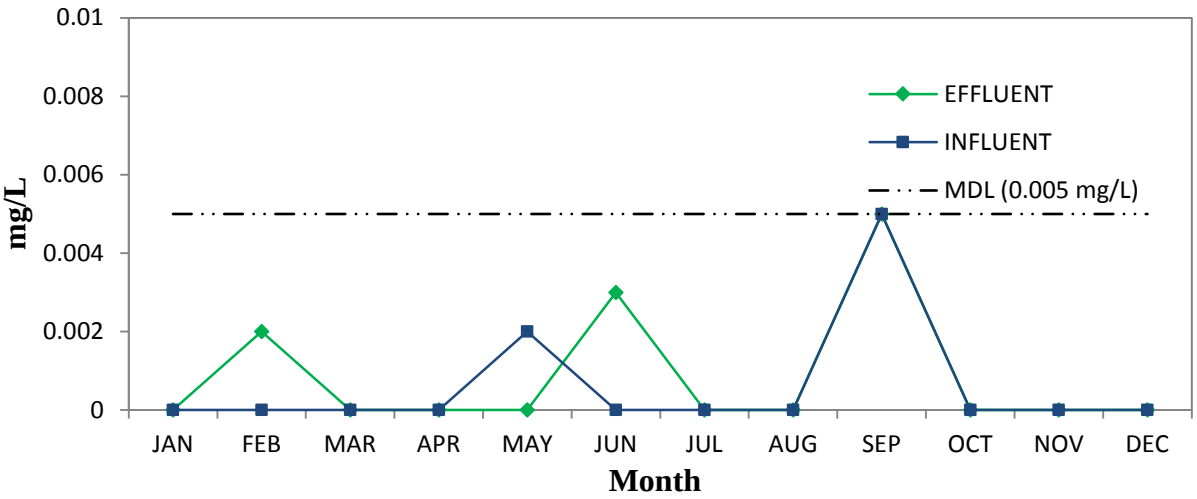


2017 South Bay Water Reclamation Plant
Monthly Averages

Residual Chlorine

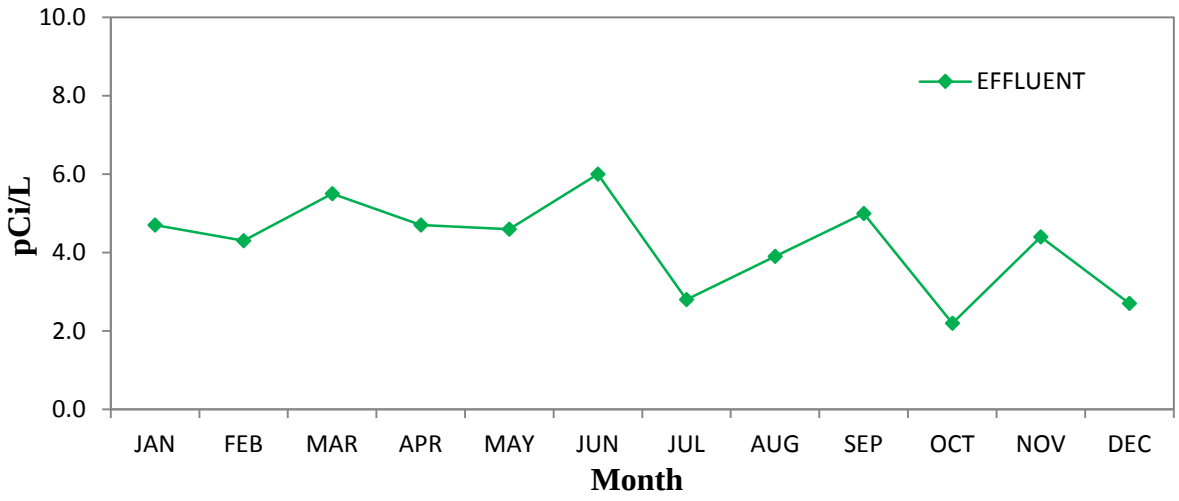


Total Cyanides

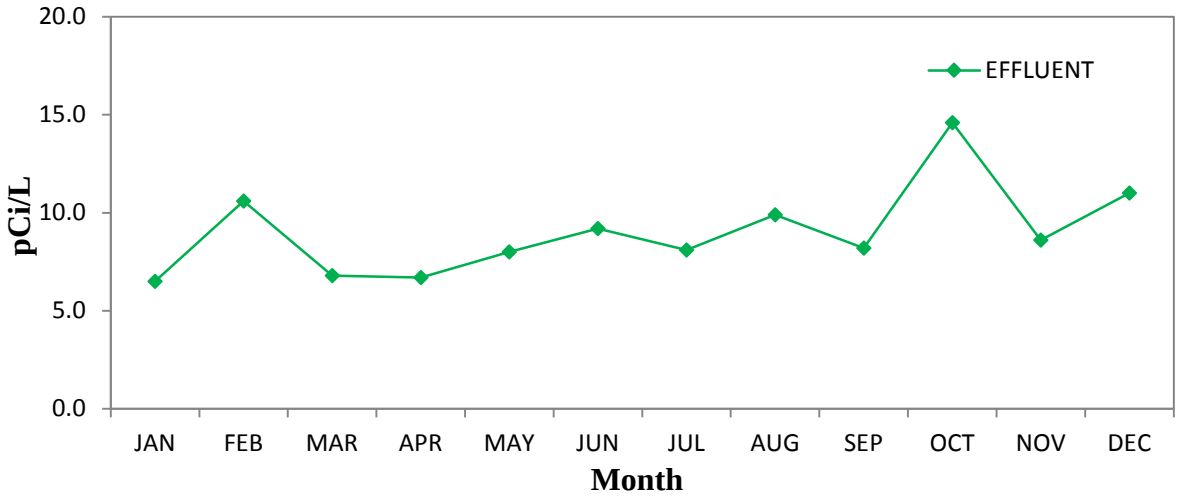


2017 South Bay Water Reclamation Plant
Monthly Averages

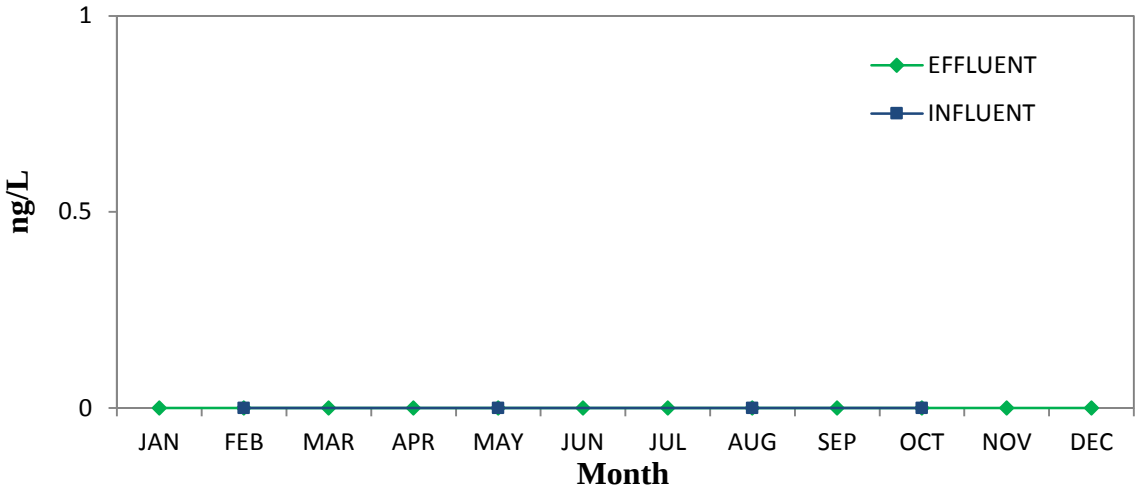
Alpha Radiation



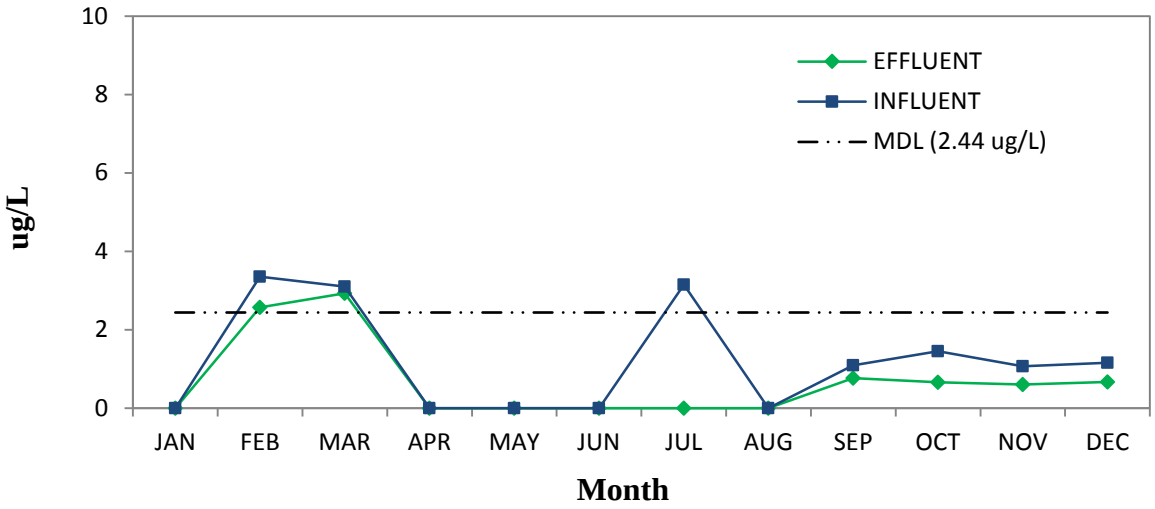
Beta Radiation



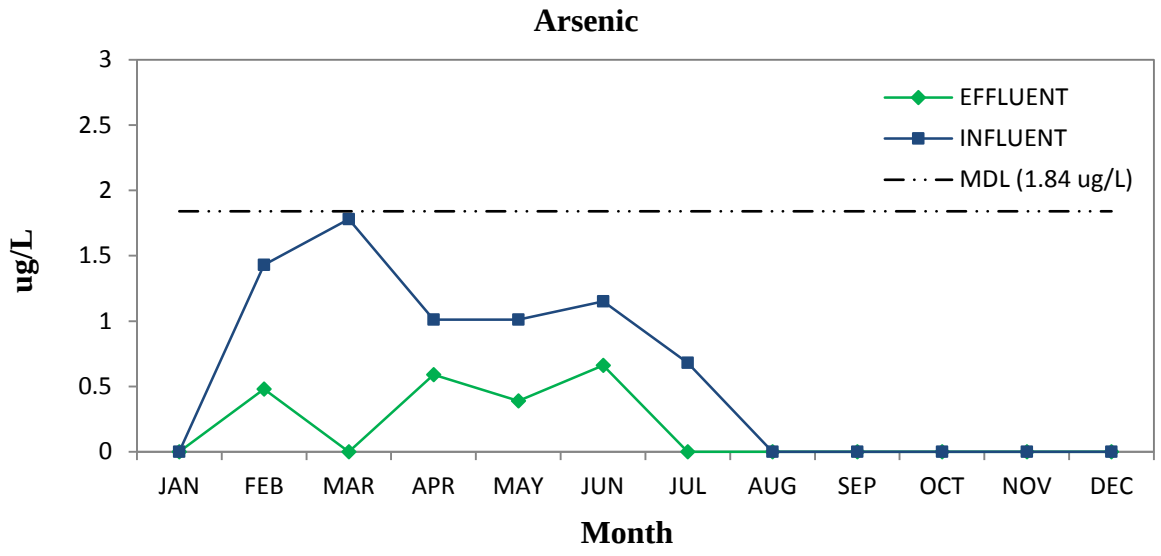
Total Chlorinated Hydrocarbons

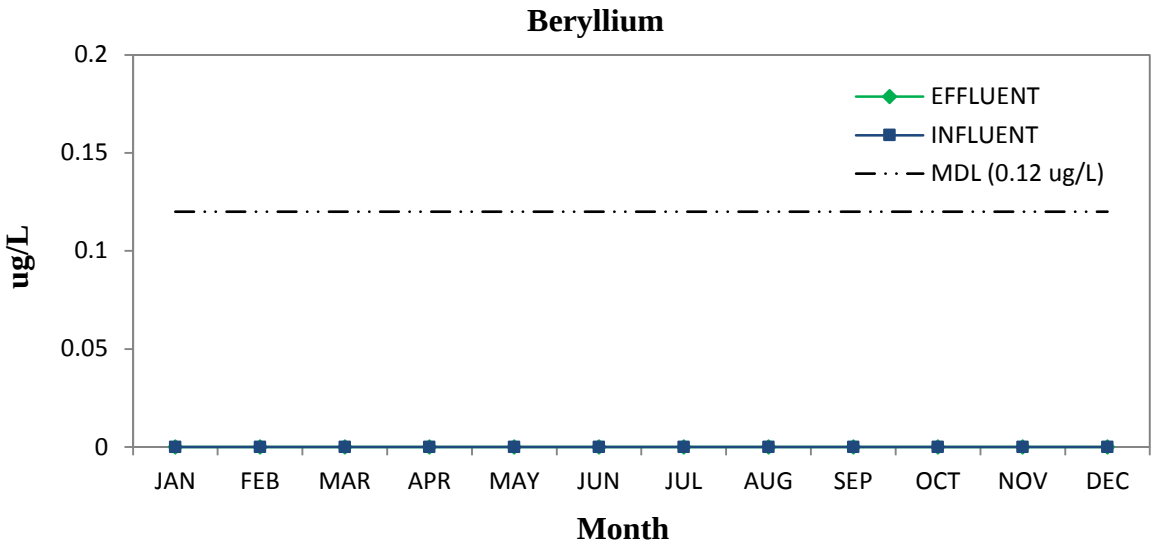


Antimony

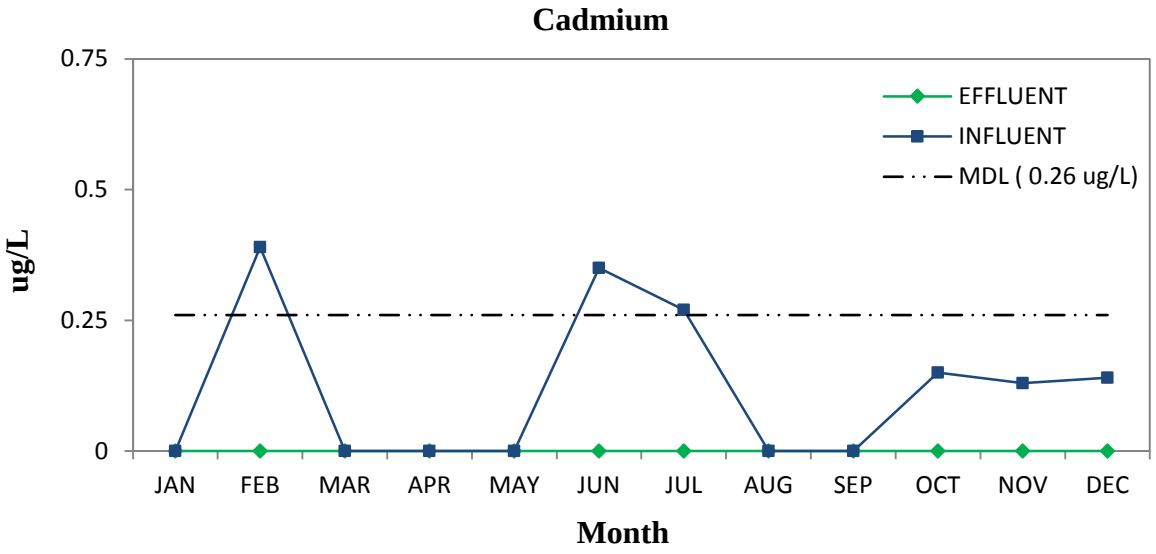


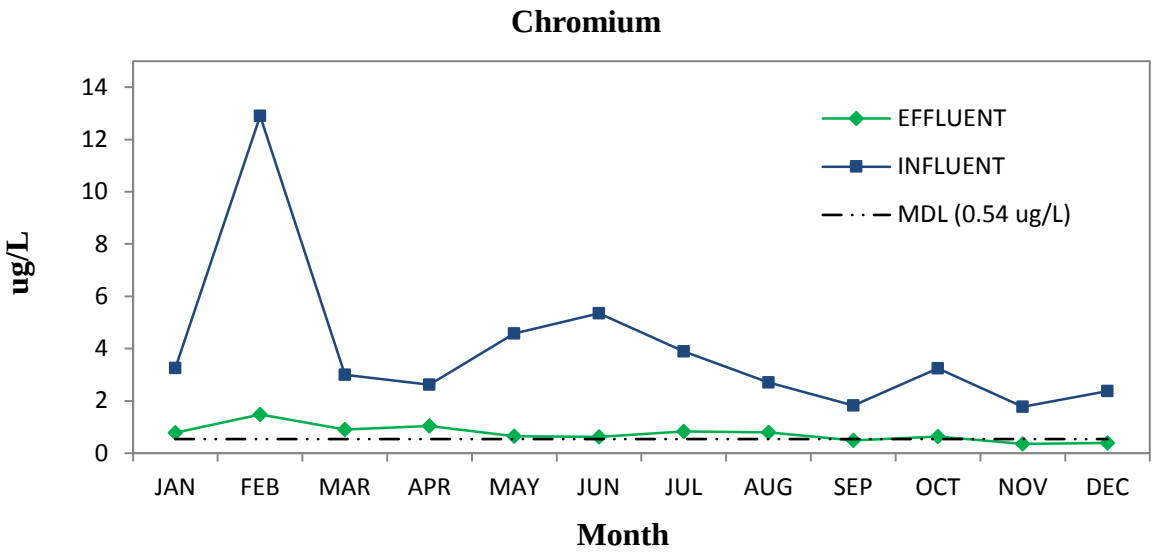
2017 South Bay Water Reclamation Plant
Monthly Averages



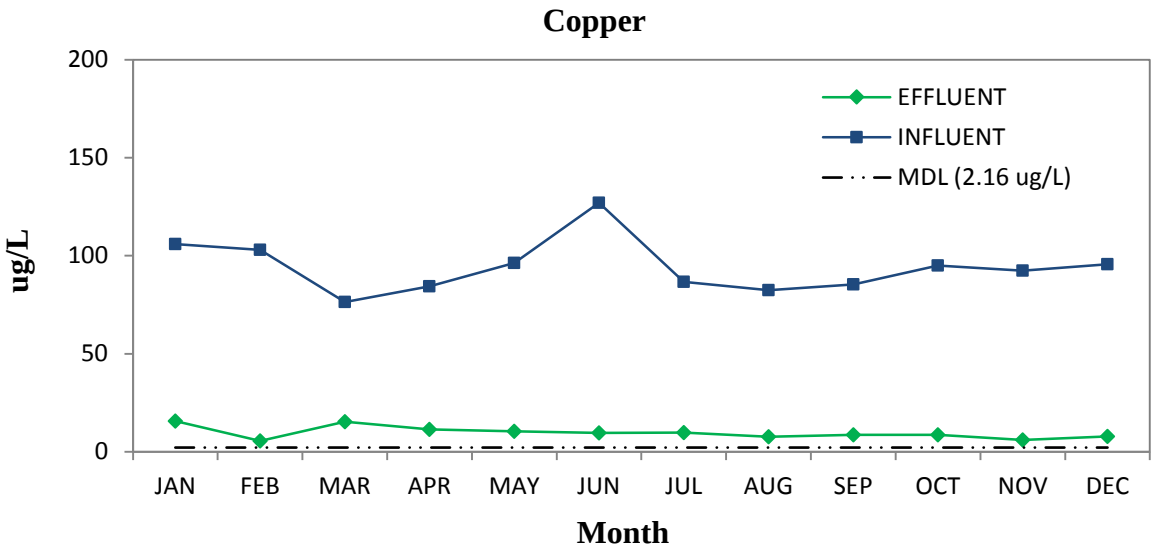


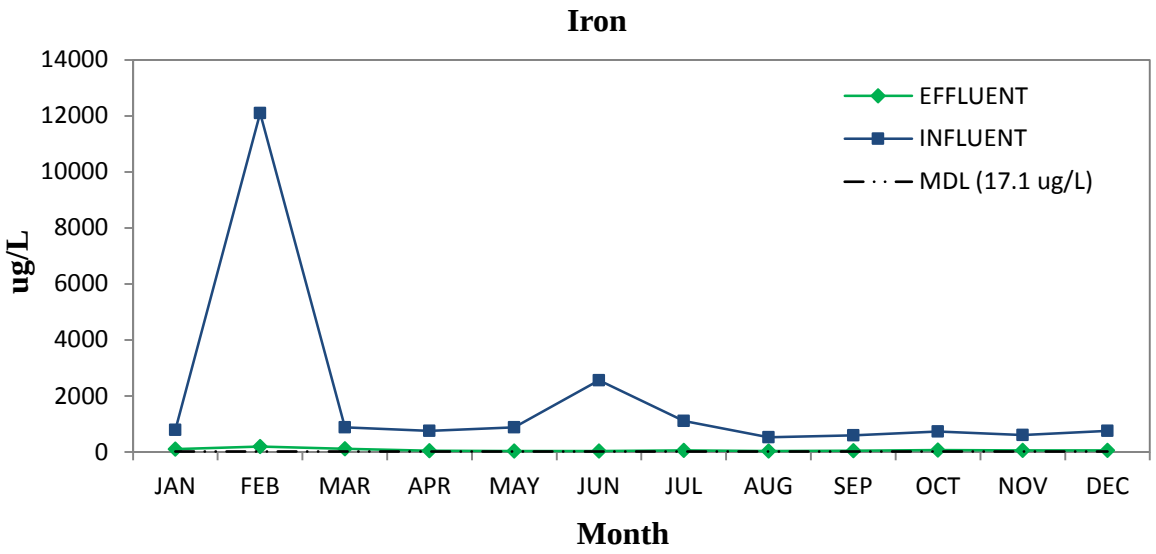
2017 South Bay Water Reclamation Plant
Monthly Averages





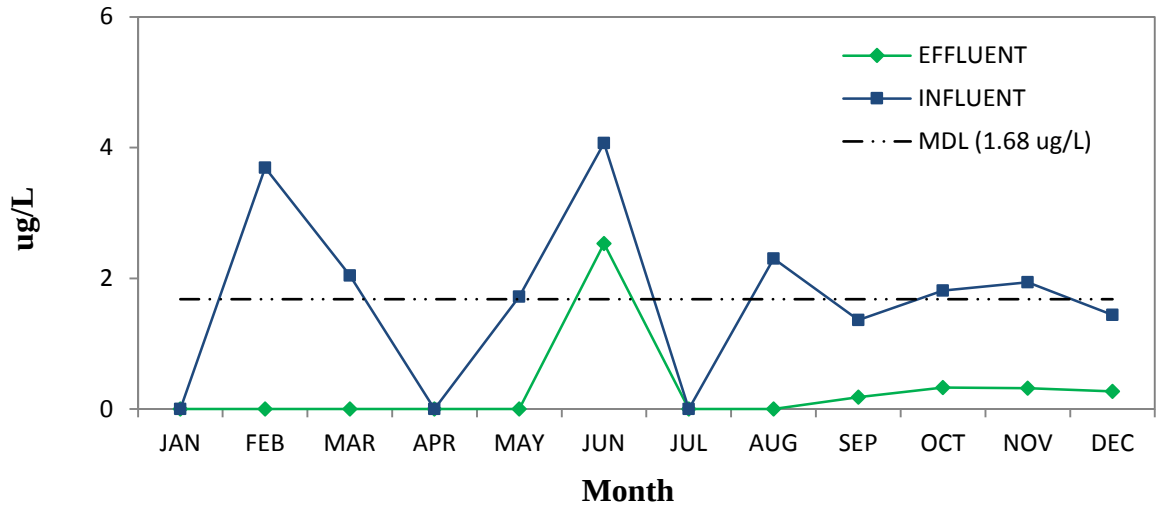
2017 South Bay Water Reclamation Plant
Monthly Averages



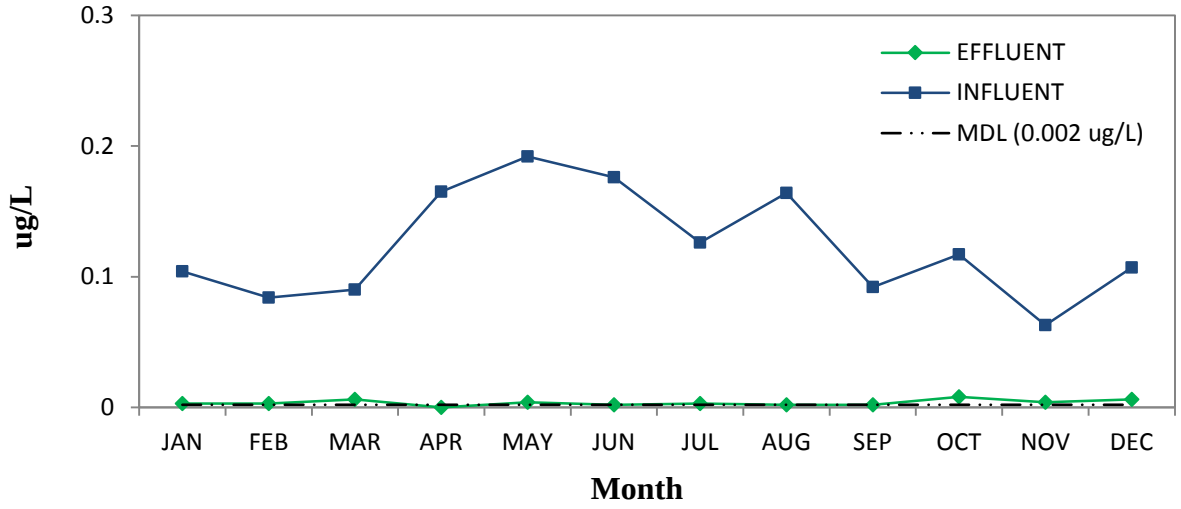


2017 South Bay Water Reclamation Plant
Monthly Averages

Lead

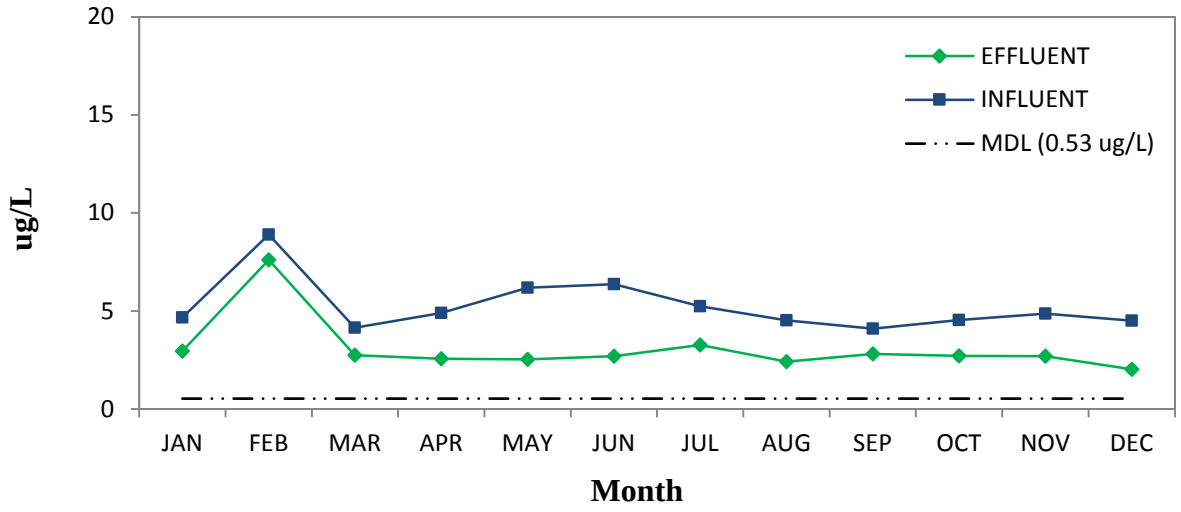


Mercury

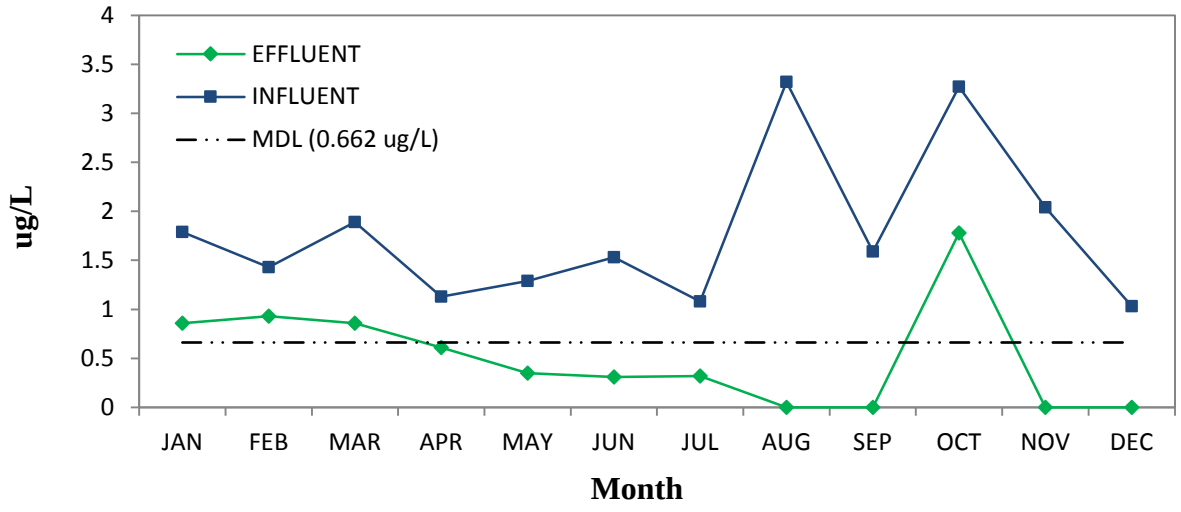


2017 South Bay Water Reclamation Plant
Monthly Averages

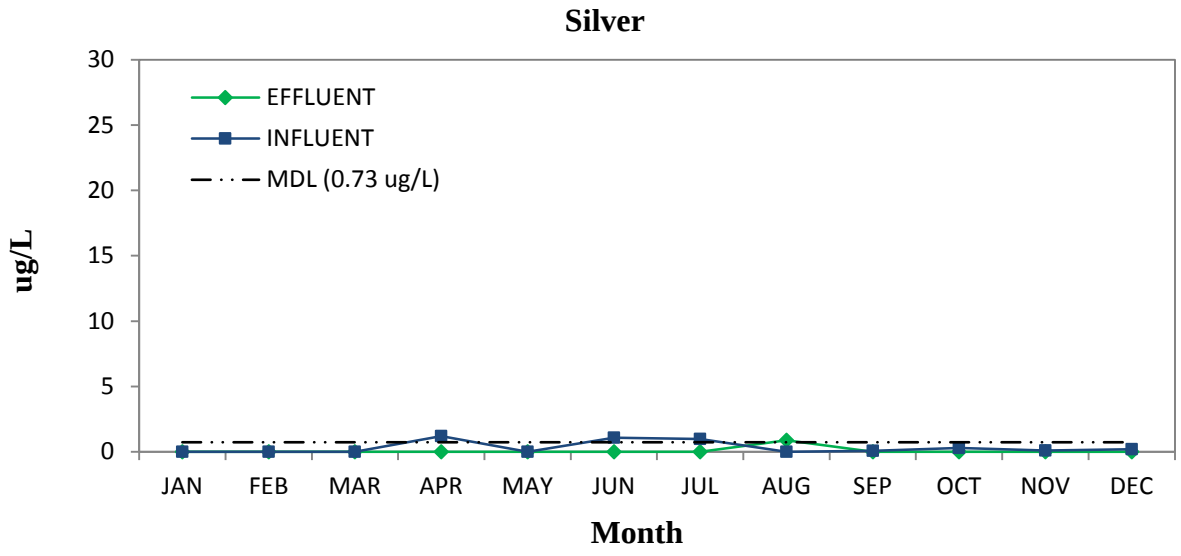
Nickel

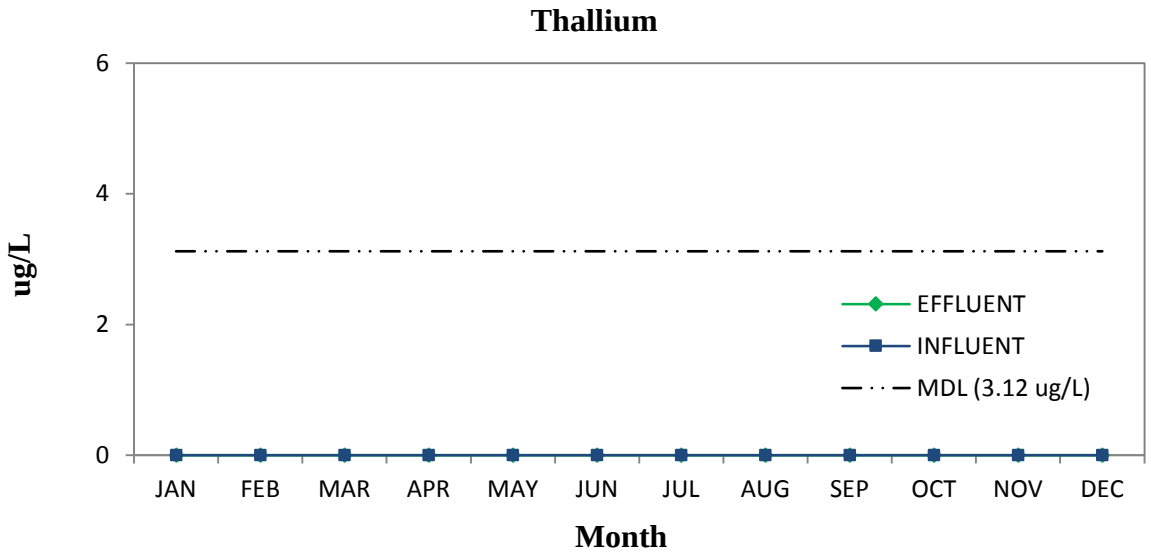


Selenium



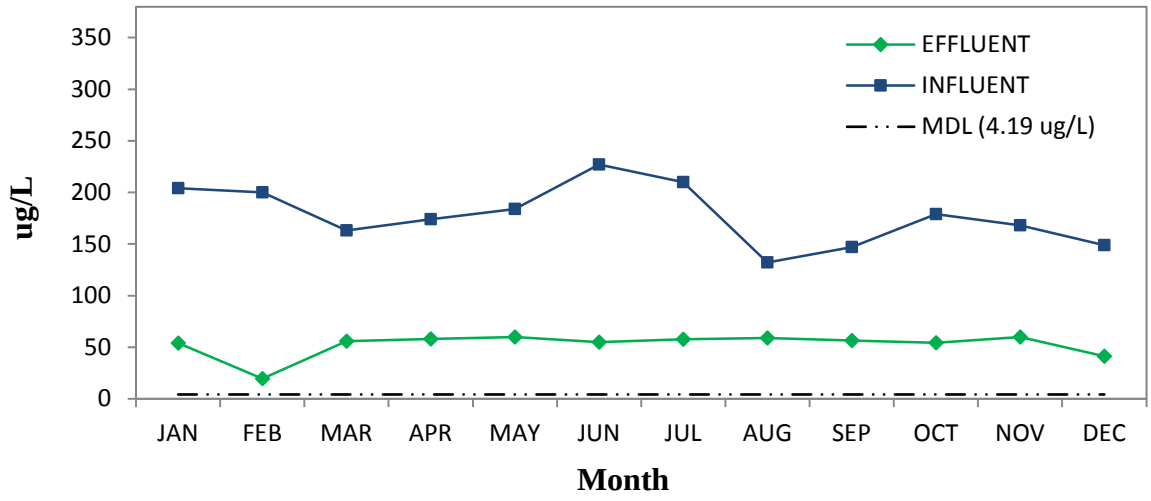
2017 South Bay Water Reclamation Plant
Monthly Averages



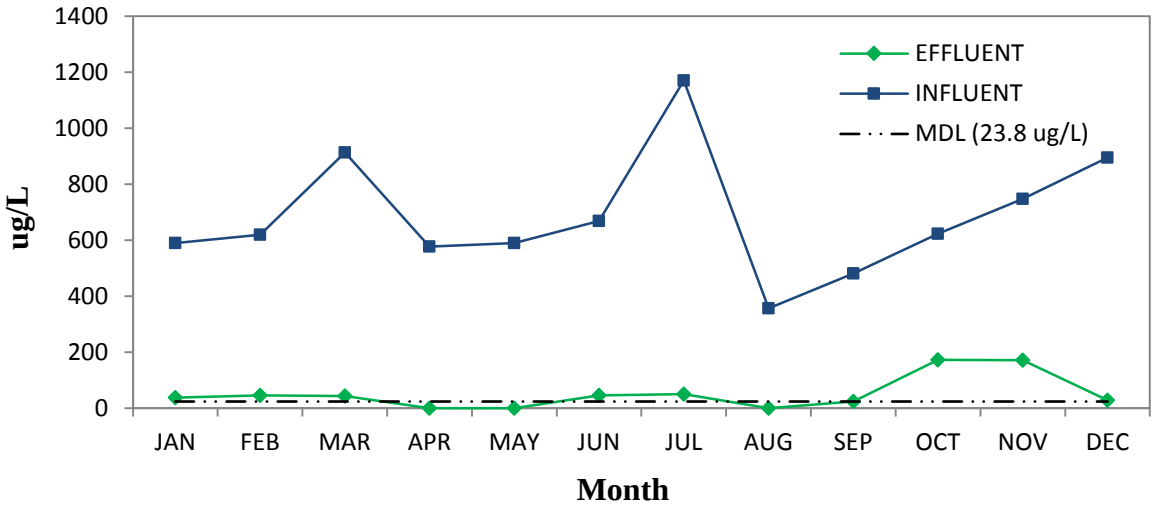


2017 South Bay Water Reclamation Plant
Monthly Averages

Zinc

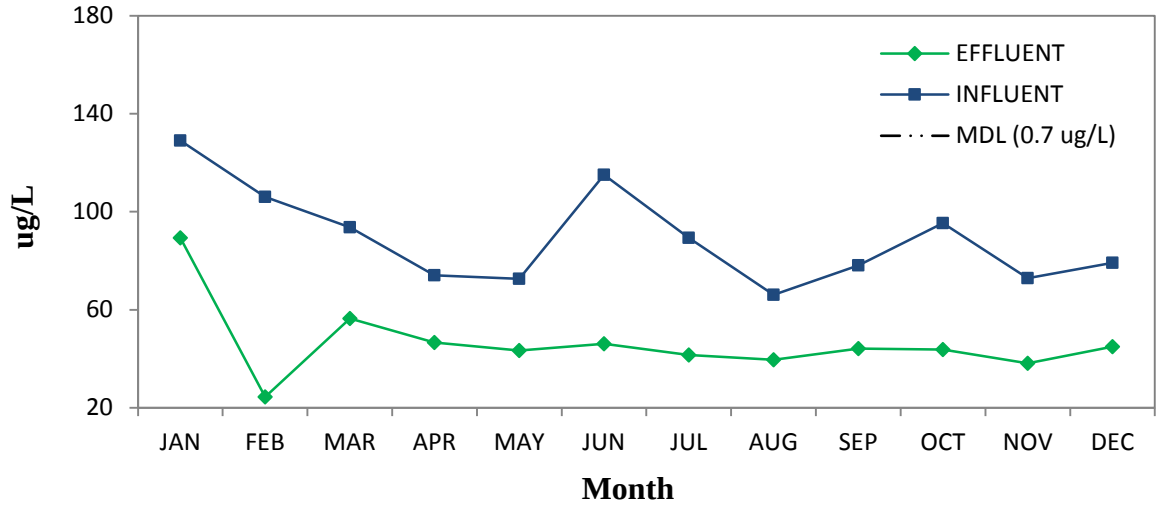


Aluminum

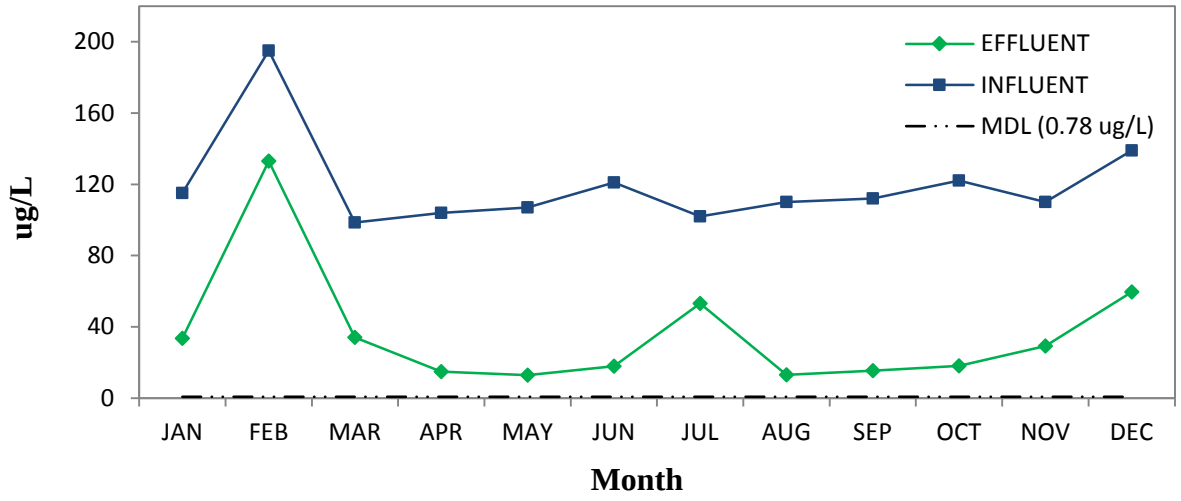


2017 South Bay Water Reclamation Plant
Monthly Averages

Barium

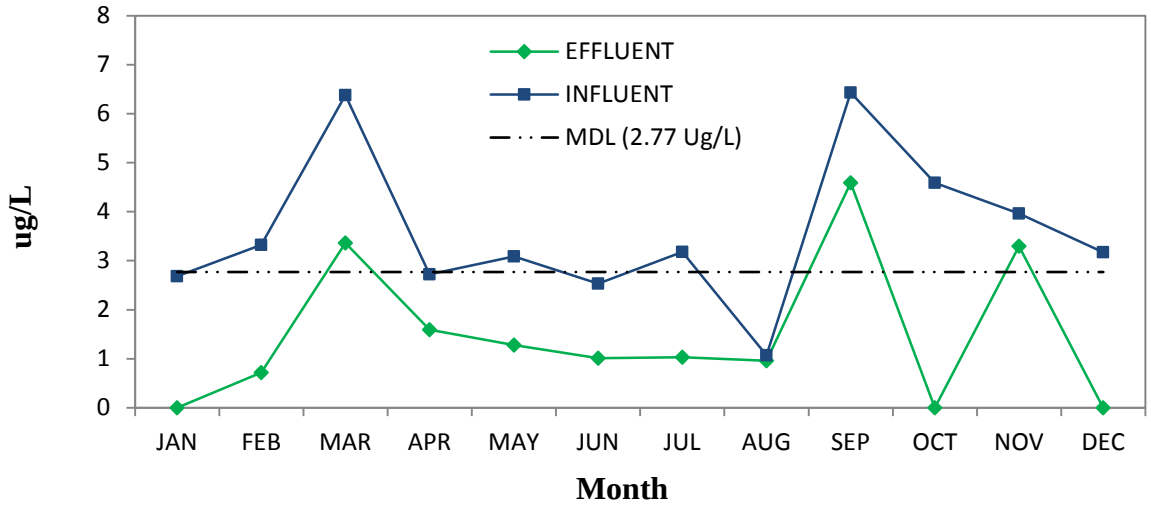


Manganese

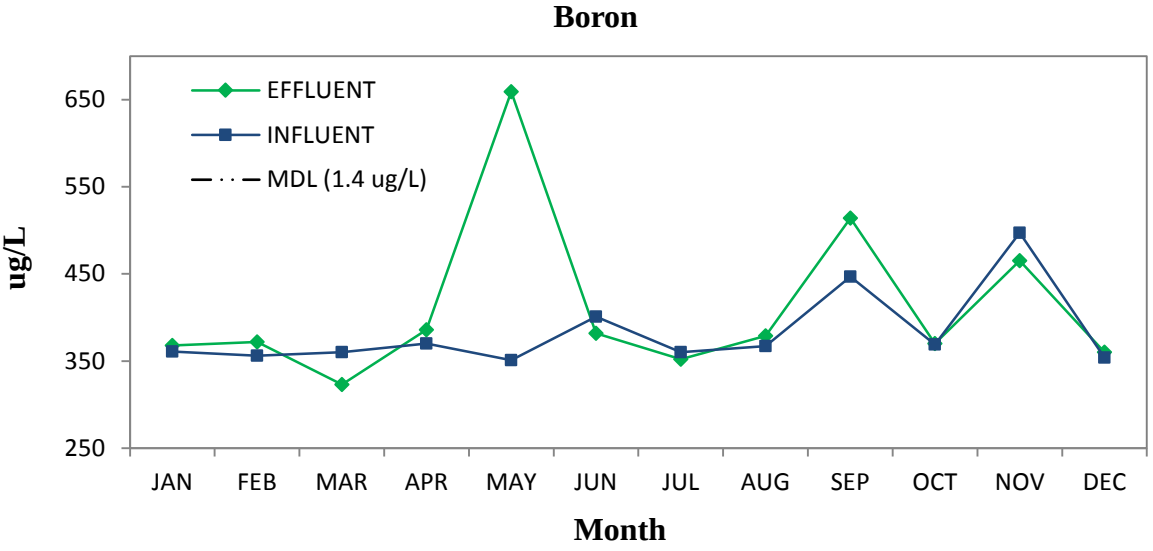


2017 South Bay Water Reclamation Plant
Monthly Averages

Vanadium

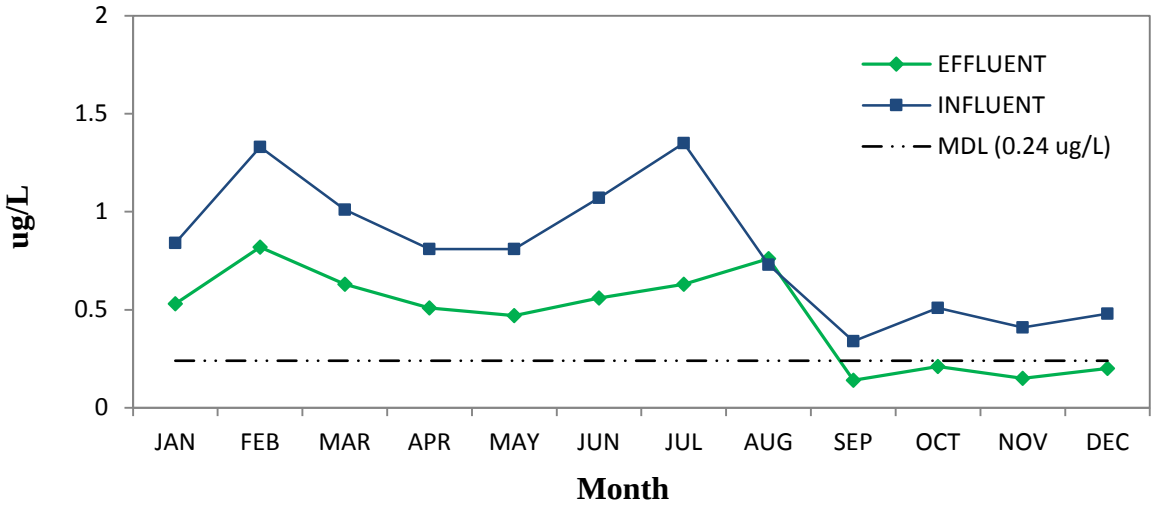


Boron

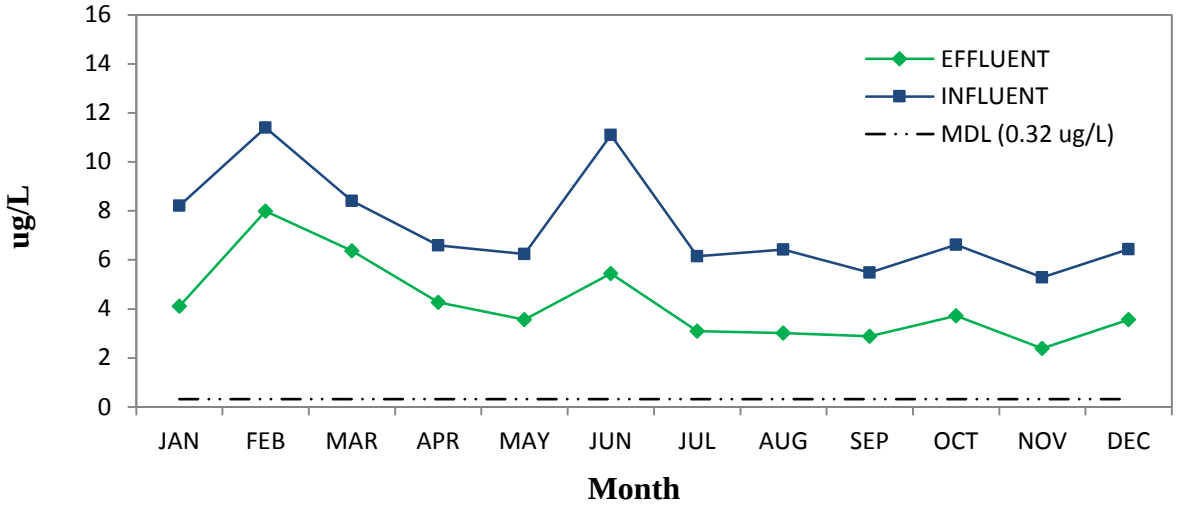


2017 South Bay Water Reclamation Plant
Monthly Averages

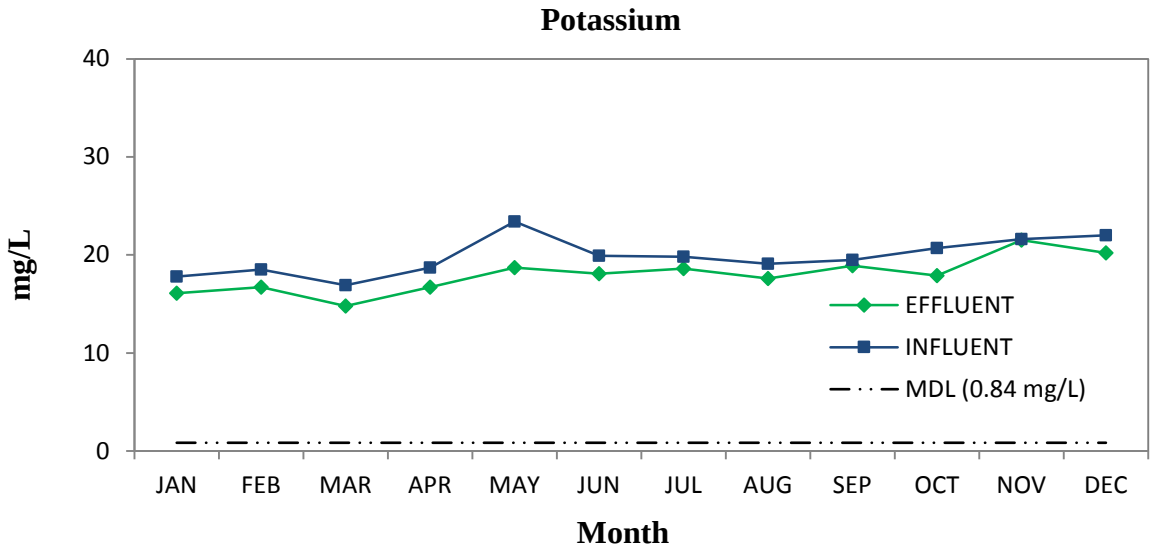
Cobalt

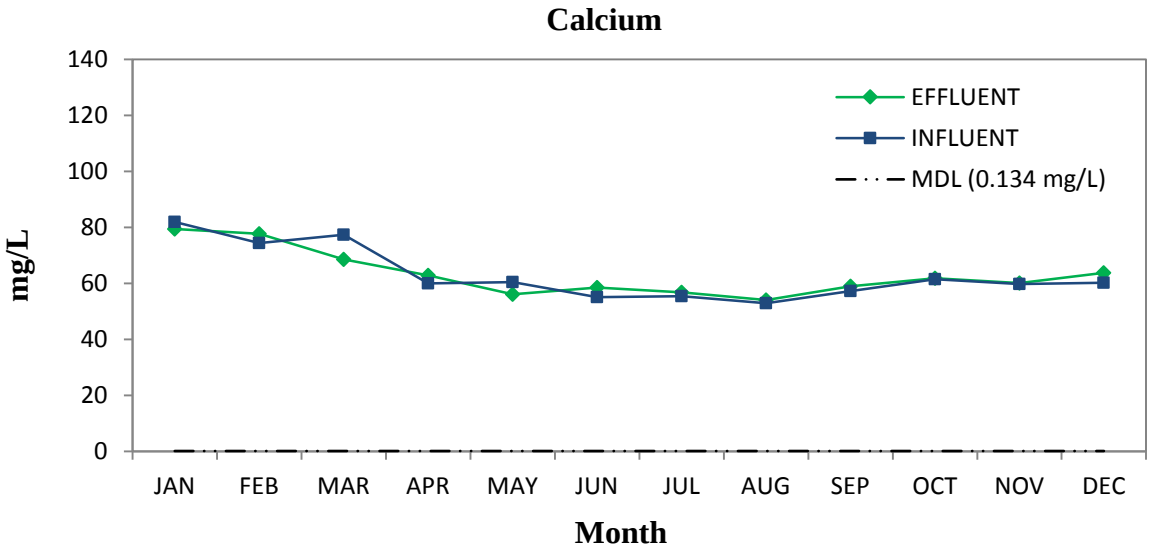


Molybdenum

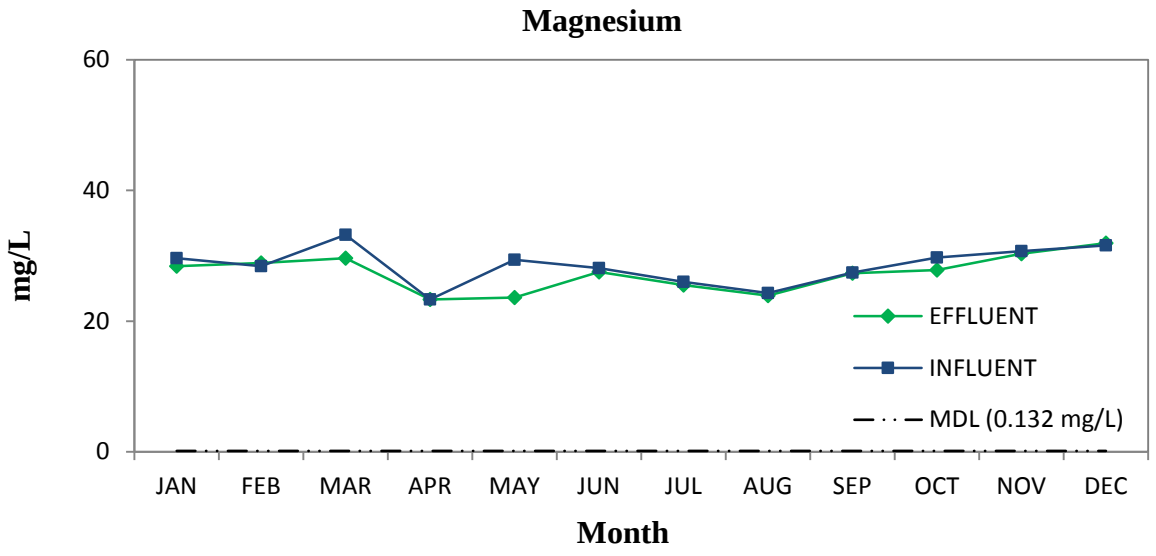


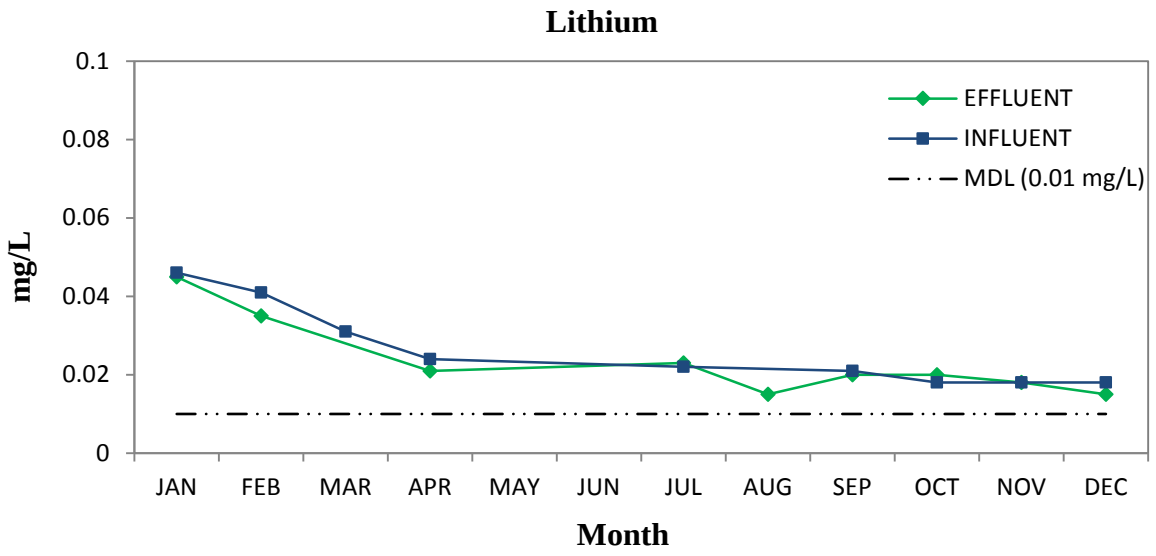
2017 South Bay Water Reclamation Plant
Monthly Averages



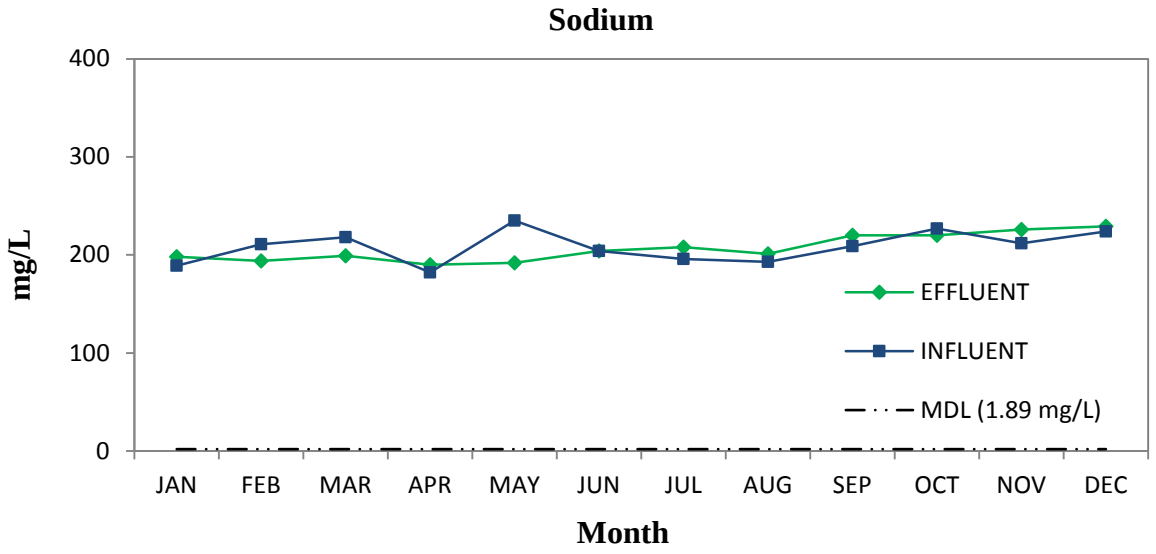


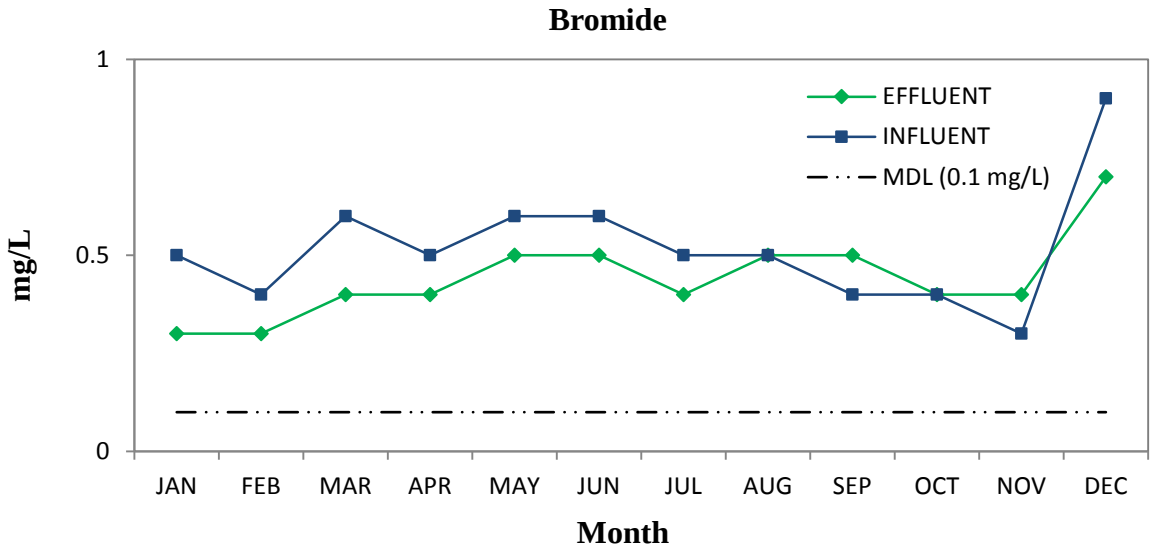
2017 South Bay Water Reclamation Plant
Monthly Averages





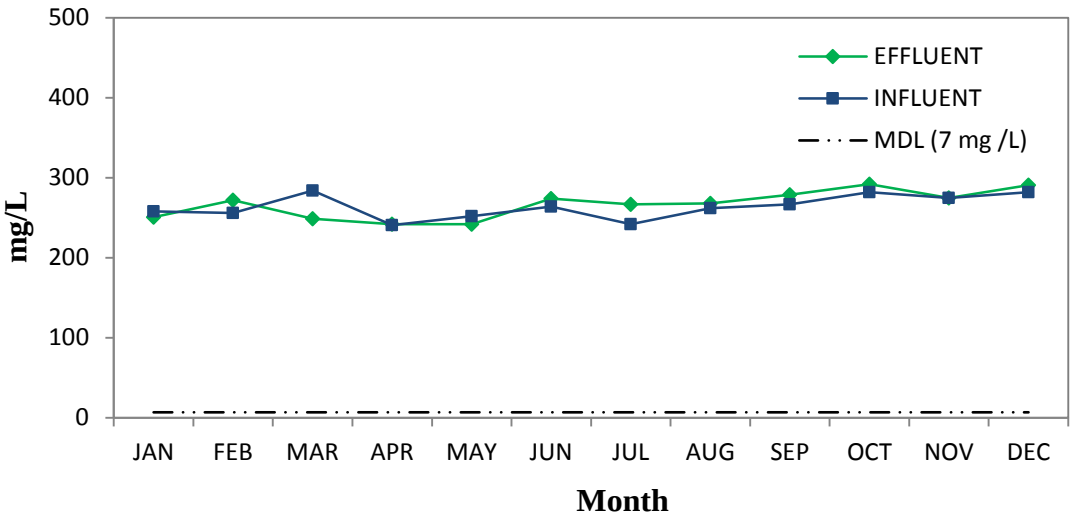
2017 South Bay Water Reclamation Plant
Monthly Averages



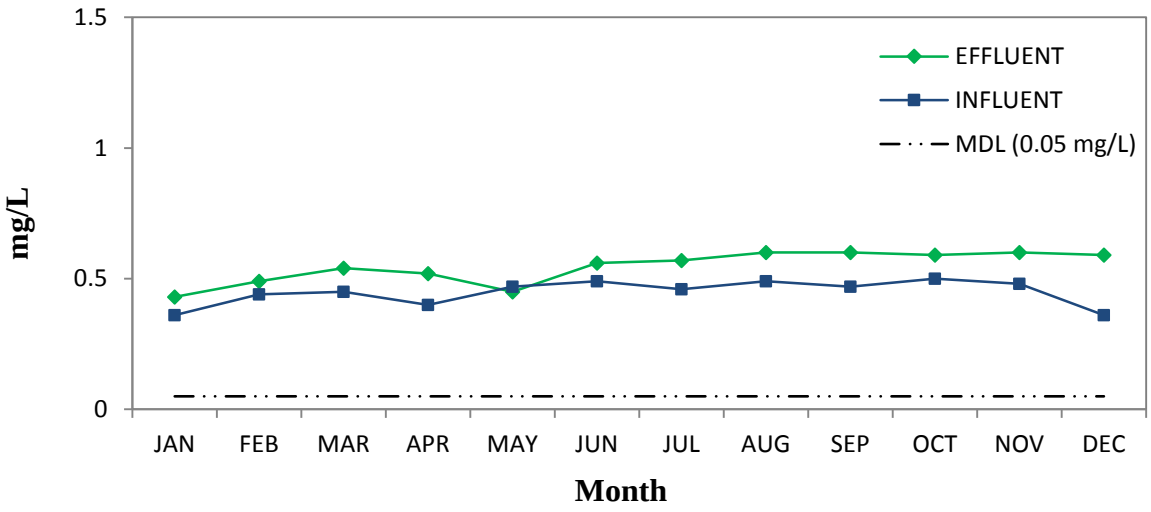


2017 South Bay Water Reclamation Plant
Monthly Averages

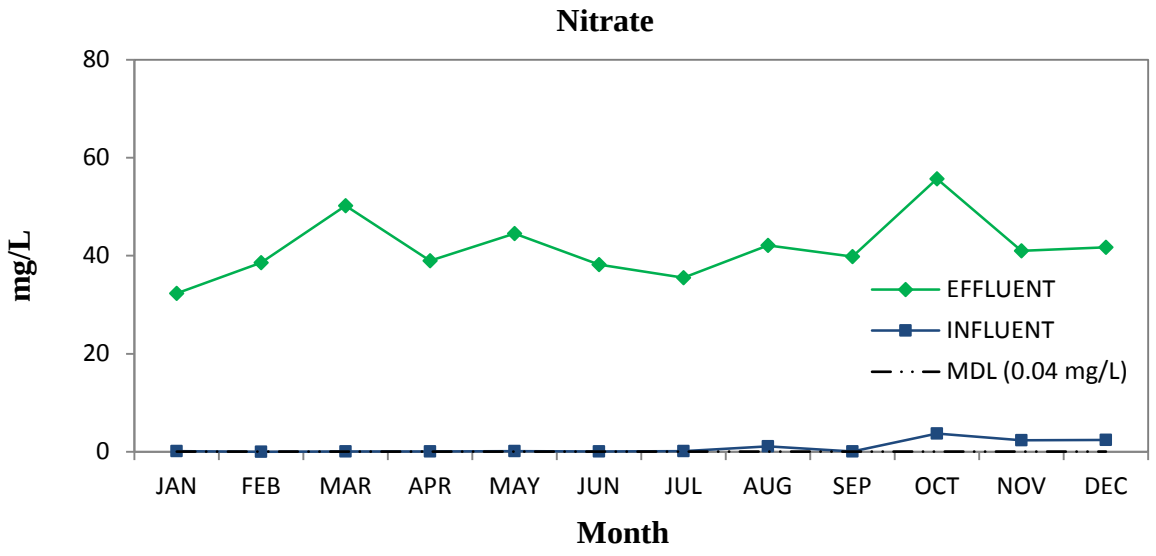
Chloride

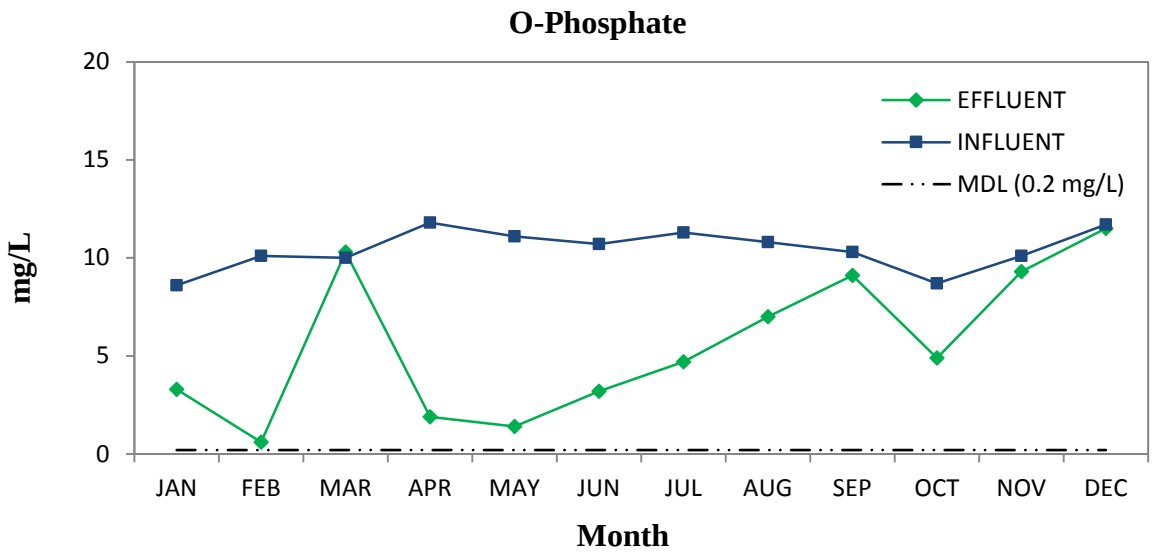


Fluoride

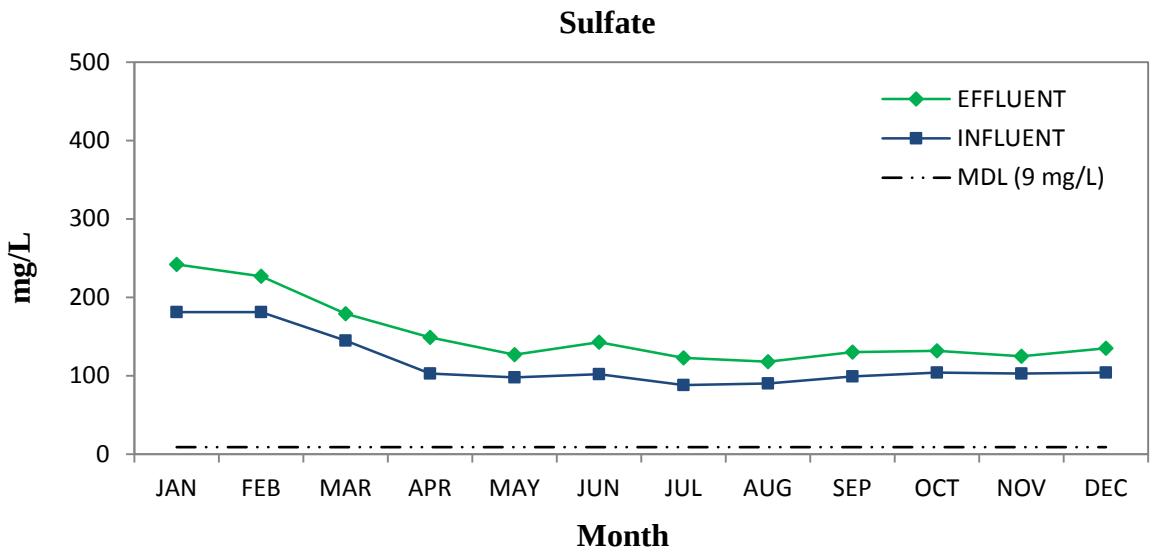


2017 South Bay Water Reclamation Plant
Monthly Averages





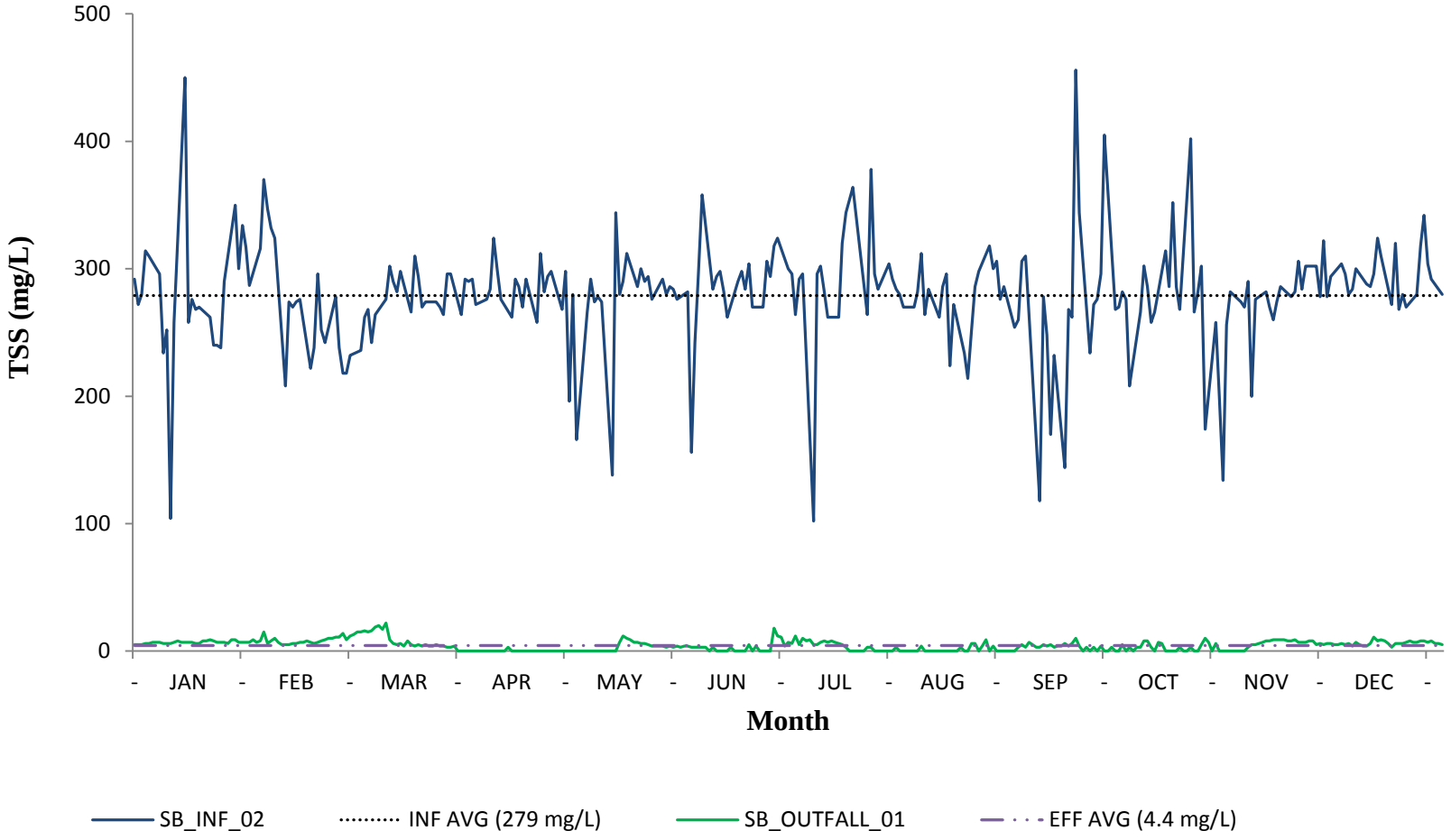
2017 South Bay Water Reclamation Plant
Monthly Averages



E. Daily Values of Selected Parameters.

Daily values of selected parameters (e.g., TSS, Flow, TSS Removals, etc.) are tabulated and presented graphically; statistical summary information is provided.

South Bay Wastewater Reclamation Plant
2017 Total Suspended Solids



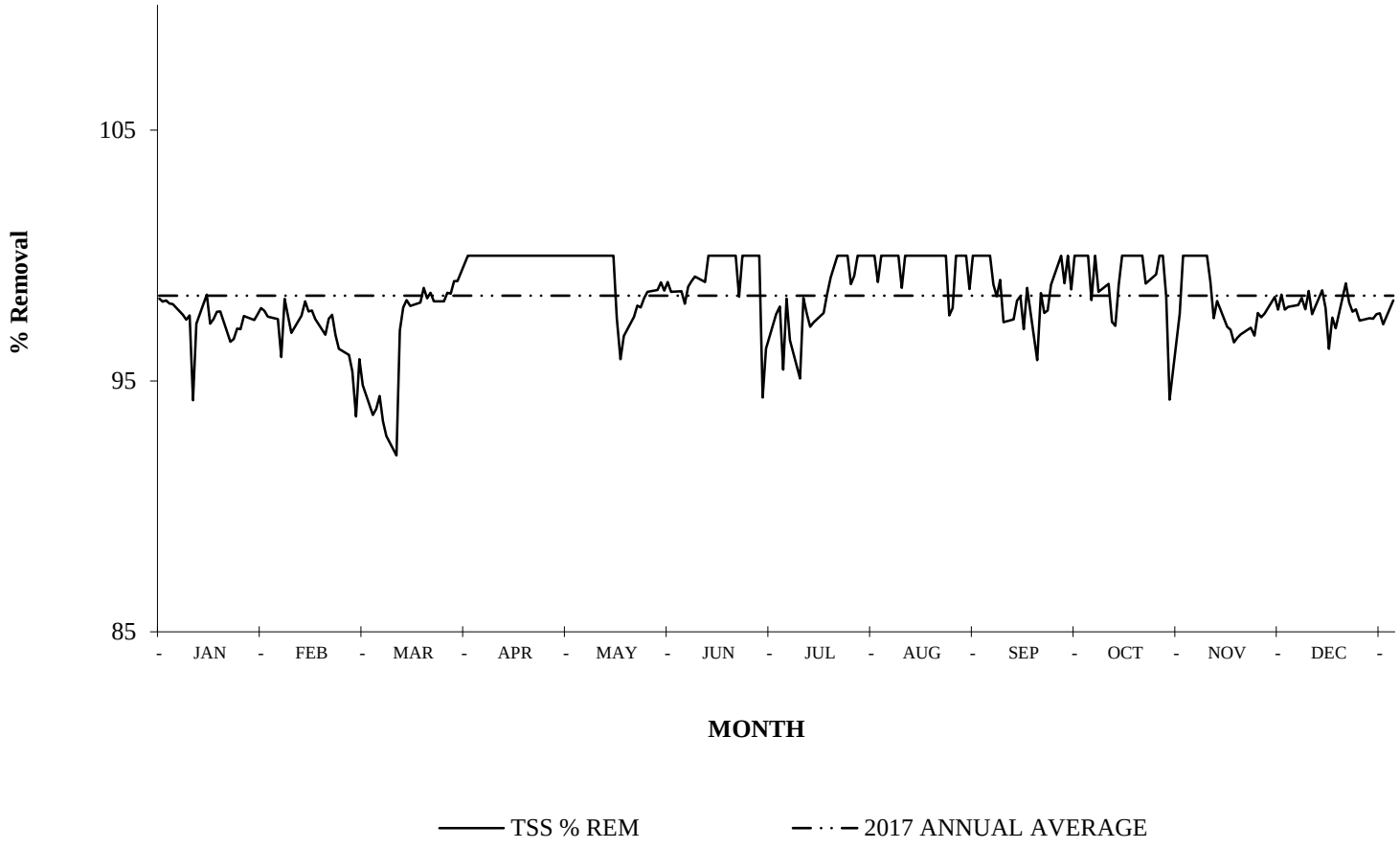
2017 Total Suspended Solids

Daily TSS Values - 2017

	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
Day	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF
1	292	5.0	317	7.0	218	9.0		ND	298	ND	276	4.0		4.0	284	3.0		ND	268	ND	256	ND		5.0
2	272	5.0	287	7.0	232	12.0	264	ND	196	ND		3.0	300	7.0	280	ND		ND	270	ND	282	ND		5.0
3	280	5.0		9.0		13.0	292	ND	280	ND		4.0	296	6.0	270	ND	254	ND	282	5.0		ND	304	6.0
4	314	6.0		7.0		15.0	290	ND	166	ND	282	4.0	264	12.0		ND	260	3.0	276	ND		ND	296	5.0
5	310	6.0	316	8.0	236	15.0	292	ND		ND	156	3.0	292	5.0		ND	306	5.0	208	3.0	274	ND	280	6.0
6		7.0	370	15.0	262	16.0	272	ND		ND	242	3.0	296	10.0	270	ND	310	3.0		ND	270	ND	284	4.0
7		7.0	347	6.0	268	15.0		ND	266	ND	296	3.0		8.0	282	ND	264	7.0		3.0	290	3.0	300	7.0
8	296	7.0	332	8.0	242	16.0		ND	292	ND	358	3.0		9.0	312	4.0		5.0	266	3.0	200	5.0		5.0
9	234	6.0	324	10.0	264	19.0	276	ND	274	ND		3.0	102	5.0	264	ND		3.0	302	8.0	276	5.0		4.0
10	252	6.0		7.0		20.0	284	ND	278	ND		ND	296	5.0	284	ND	118	3.0	286	8.0		6.0	288	4.0
11	104	6.0		5.0		17.0	324	ND	274	ND	284	3.0	302	7.0		ND	278	5.0	258	3.0		7.0	286	6.0
12	258	7.0	208	5.0	276	22.0	298	ND		ND	294	ND	282	8.0		ND	248	4.0	266	ND	282	8.0	296	11.0
13		8.0	274	5.0	302	9.0	276	ND		ND	298	ND	262	7.0	262	ND	170	5.0		7.0	270	8.0	324	8.0
14		7.0	270	6.0	290	6.0		ND	138	ND	282	ND		8.0	286	ND	232	3.0		6.0	260	9.0	310	9.0
15	450	7.0	274	6.0	282	5.0		3.0	344	ND	262	ND		7.0	296	ND		4.0	314	ND	274	9.0		8.0
16	258	7.0	276	7.0	298	6.0	262	ND	280	7.0		3.0	262	6.0	224	ND		4.0	286	ND	286	9.0		6.0
17	276	7.0		7.0		4.0	292	ND	290	12.0		ND	320	5.0	272	ND	144	6.0	352	ND		9.0	272	3.0
18	268	6.0		8.0		8.0	286	ND	312	10.0	290	ND	344	3.0		ND	268	4.0	286	ND		8.0	320	6.0
19	270	6.0	222	7.0	266	5.0	270	ND		9.0	298	ND		ND		3.0	262	6.0	268	3.0	278	8.0	268	6.0
20		8.0	238	6.0	310	4.0	292	ND		7.0	284	ND	364	ND	234	ND	456	10.0		ND	282	9.0	280	6.0
21		8.0	296	7.0	294	5.0		ND	286	7.0	304	5.0		ND	214	ND	344	4.0		ND	306	7.0	270	7.0
22	262	9.0	252	8.0	270	4.0		ND	300	6.0	270	ND		ND	252	6.0		ND	402	3.0	284	7.0		8.0
23	240	8.0	242	9.0	274	5.0	258	ND	290	6.0		4.0	288	ND	286	6.0		3.0	266	ND	302	7.0		7.0
24	240	7.0		10.0		4.0	312	ND	294	5.0		ND	264	3.0	298	ND	234	ND	282	ND		8.0	280	7.0
25	238	7.0		10.0		4.0	282	ND	276	4.0	270	ND	378	3.0		4.0	272	3.0	302	5.0		8.0	318	8.0
26	290	7.0	278	11.0	274	5.0	294	ND		4.0	306	ND	296	ND		9.0	276	ND	174	10.0	302	5.0	342	8.0
27		6.0	238	11.0	270	4.0	298	ND		4.0	294	ND	284	ND	318	ND	296	4.0		7.0	278	6.0	304	7.0
28		9.0	218	14.0	264	4.0		ND	292	4.0	318	18.0		ND	300	4.0	405	ND		ND	322	5.0	292	8.0
29	350	9.0			296	3.0		ND	280	3.0	324	12.0		ND	306	ND		ND	258	6.0	278	6.0		6.0
30	300	7.0			296	3.0	268	ND	286	4.0		11.0	304	ND	276	ND		3.0	200	ND	294	6.0		6.0
31	334	7.0				4.0			284	3.0			292	ND	286	ND			134	ND			280	5.0
Ave	278	6.9	279	8.1	272	9.1	286	0.1	273	3.1	285	2.9	290	4.1	276	1.3	270	3.2	270	2.6	279	5.6	295	6.4
Min	104	5.0	208	5.0	218	3.0	258	3.0	138	3.0	156	3.0	102	3.0	214	3.0	118	3.0	134	3.0	200	3.0	268	3.0
Max	450	9.0	370	15.0	310	22.0	324	3.0	344	12.0	358	18.0	378	12.0	318	9.0	456	10.0	402	10.0	322	9.0	342	11.0

Annual Summary	
INF	EFF
279	4.4
102	3.0
456	22.0

South Bay Wastewater Reclamation Plant
2017 TSS Percent Removal

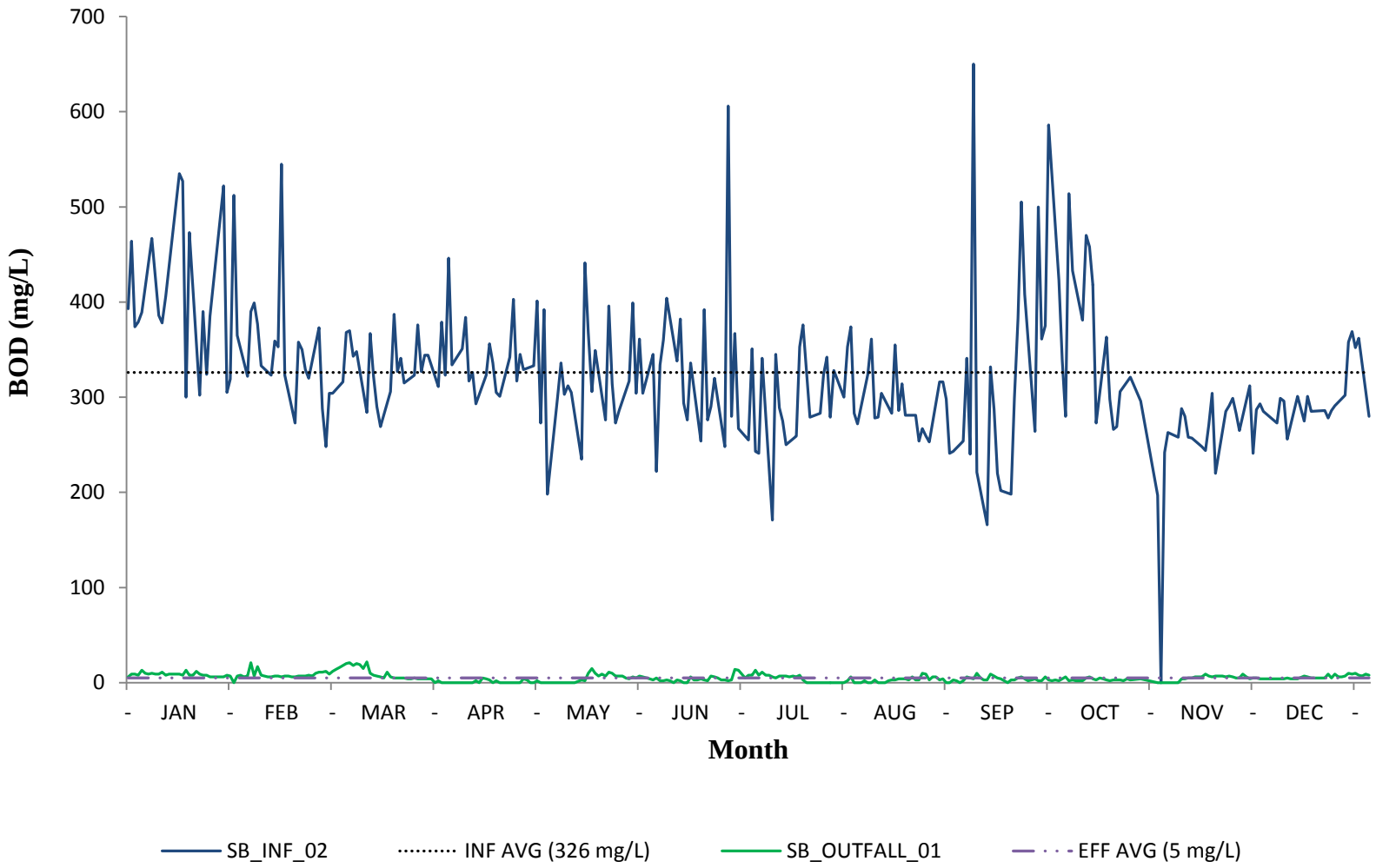


2017 TSS Percent Removals

TSS Removals - 2017

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	98.3	97.8	95.9		100.0	98.6		98.9		100.0	100.0		
2	98.2	97.6	94.8	100.0	100.0		97.7	100.0		100.0	100.0		
3	98.2			100.0	100.0		98.0	100.0	100.0	98.2		98.0	
4	98.1			100.0	100.0	98.6	95.5		98.8	100.0		98.3	
5	98.1	97.5	93.6	100.0		98.1	98.3		98.4	98.6	100.0	97.9	
6		95.9	93.9	100.0		98.8	96.6	100.0	99.0		100.0	98.6	
7		98.3	94.4		100.0	99.0		100.0	97.3		99.0	97.7	
8	97.6	97.6	93.4		100.0	99.2		98.7		98.9	97.5		
9	97.4	96.9	92.8	100.0	100.0		95.1	100.0		97.4	98.2		
10	97.6			100.0	100.0		98.3	100.0	97.5	97.2		98.6	
11	94.2			100.0	100.0	98.9	97.7		98.2	98.8		97.9	
12	97.3	97.6	92.0	100.0		100.0	97.2		98.4	100.0	97.2	96.3	
13		98.2	97.0	100.0		100.0	97.3	100.0	97.1		97.0	97.5	
14		97.8	97.9		100.0	100.0		100.0	98.7		96.5	97.1	
16	98.4	97.8	98.2		100.0	100.0		100.0		100.0	96.7		
16	97.3	97.5	98.0	100.0	97.5		97.7	100.0		100.0	96.9		
17	97.5			100.0	95.9		98.4	100.0	95.8	100.0		98.9	
18	97.8			100.0	96.8	100.0	99.1		98.5	100.0		98.1	
19	97.8	96.8	98.1	100.0		100.0			97.7	98.9	97.1	97.8	
20		97.5	98.7	100.0		100.0	100.0	100.0	97.8		96.8	97.9	
21		97.6	98.3		97.6	98.4		100.0	98.8		97.7	97.4	
22	96.6	96.8	98.5		98.0	100.0		97.6		99.3	97.5		
23	96.7	96.3	98.2	100.0	97.9		100.0	97.9		100.0	97.7		
24	97.1			100.0	98.3		98.9	100.0	100.0	100.0		97.5	
25	97.1			100.0	98.6	100.0	99.2		98.9	98.3		97.5	
26	97.6	96.0	98.2	100.0		100.0	100.0		100.0	94.3	98.3	97.7	
27		95.4	98.5	100.0		100.0	100.0	100.0	98.6		97.8	97.7	
28		93.6	98.5		98.6	94.3		98.7	100.0		98.4	97.3	
29	97.4		99.0		98.9	96.3		100.0		97.7	97.8		
30	97.7		99.0	100.0	98.6		100.0	100.0		100.0	98.0		
31	97.9				98.9		100.0	100.0		100.0		98.2	Annual Summary
Average	97.5	97.0	96.7	100.0	98.9	99.1	98.3	99.6	98.5	99.0	98.0	97.8	98.4
Minimum	94.2	93.6	92.0	100.0	95.9	94.3	95.1	97.6	95.8	94.3	96.5	96.3	92.0
Maximum	98.4	98.3	99.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.9	100.0

South Bay Wastewater Reclamation Plant
2017 Biochemical Oxygen Demand



2017 Biochemical Oxygen Demand

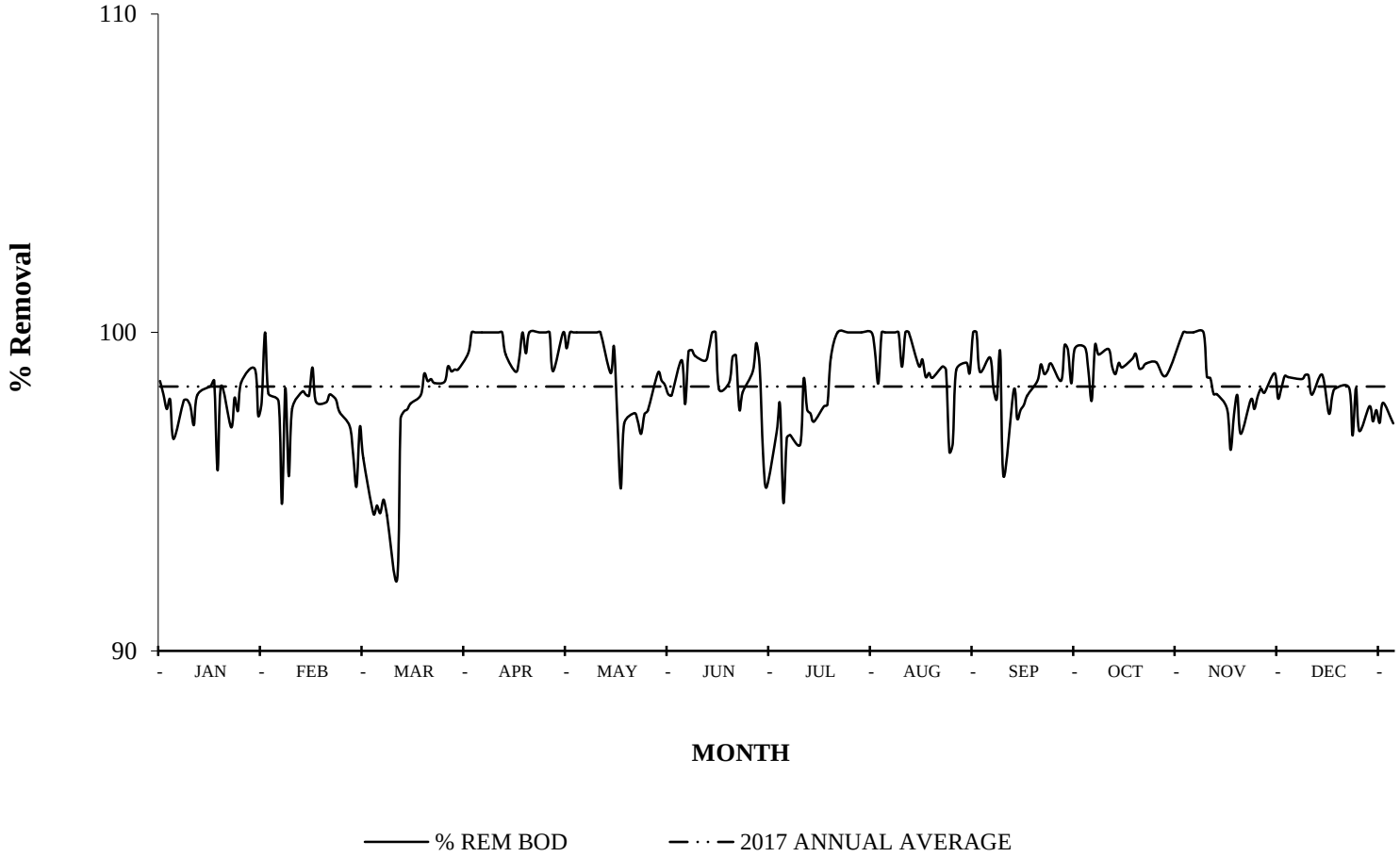
Daily BOD Values - 2017

	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
Day	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF
1	393	6	512	ND	304	9		ND	401	2	304	6		5	374	6		2	423	2	242	ND		4
2	464	9	365	7	304	12	311	2	273	ND			255	8	283	ND		ND	339	4	263	ND		
3	374	9		8		14	379	ND	392	ND		4	351	8	272	ND	254	2	280	6		ND		
4	379	8		6		16	323	ND	198	ND	345	3	243	13		ND	341	6	514	2		ND	273	4
5	389	13	322	7	316	18	446	ND		ND	222	5	241	8		2	240	5	433	3	258	ND	299	4
6		10	390	21	368	20	334	ND		ND	334	2	341	11	324	ND	650	4		2	288	4	296	4
7		9	399	7	370	21		ND	301	ND	360	2		8	361	ND	221	10		2	280	4	256	5
8	467	10	377	17	343	18		ND	336	ND	404	3		8	278	3		5	381	2	258	5		4
9	425	9	333	8	348	20	351	ND	303	ND		2	171	6	279	ND		3	470	5	257	5		4
10	386	9		7		19	384	ND	312	ND		ND	345	5	304	ND	166	3	458	6		6	301	4
11	378	11		6		15	317	ND	305	ND	338	3	289	7		ND	332	9	418	4		6		
12	406	8	323	6	284	22	326	ND		ND	382	2	275	7		2	287	7	273	3	248	6	275	7
13		9	359	7	367	10	293	2			294	ND	250	7	283	3	220	5		5	244	9	301	6
14			353	7	322	8		ND	235	3	276	ND		6	355	3	202	4		4	271	7	285	5
15			545	6	290	7		5	441	2	336	6		7	286	4		0	363	3	304	6		5
16	535	9	323	7	269	6	323	4	368	10		3	259	6	314	4		ND	298	2	220	7		
17	527	8		7		5	356	3	306	15		3	353	8	281	4	198	3	266	3		7		
18	300	13		6		11	336	ND	349	10	254	4	376	3		3	299	3	269	3		7	286	5
19	473	8	273	6	306	6	305	2		7	392	3		ND		6	383	5	306	3	285	6	278	9
20		8	358	7	387	5	301	ND		9	276	2	279	ND	281	3	505	6		2	291	7	286	5
21		12	350	7	327	5		ND	276	7	290	7		ND	254	3	408	4		4	299	6	291	9
22	302	9	329	7	341	5		ND	396	11	320	6		ND	267	10		2	321	3	283	5		6
23	390	8	320	8	315	5	342	ND	314	10		5	283	ND	259	9		3			265	5		6
24	324	8		7		4	403	ND	273	7		3	324	ND	253	3	264	4				9	302	7
25	385	6		10		4	317	ND	286	7	248	3	342	ND		6	500	2	296	4		6	358	10
26			373	11	323	5	345	ND		7	606	2	279	ND		6	361	2			312	4	369	9
27			288	11	376	4	329	4		5	280	3	328	ND	316	3	375	6			241	5	352	10
28		6	248	12	327	4		3	317	4	367	14		ND	316	4	586	3			287	5	362	8
29	522	6			344	4		ND	399	6	267	13		ND	298	ND		2			293	4		7
30	305	8			344	4	333	ND	304	5		9	300	ND	241	ND		3	197	ND	285	4		9
31	319	7				4			361	7			353	2	243	3			ND	ND			280	8
Avg	402	9	357	8	331	10	341	1	324	4	328	4	297	4	292	3	340	4	327	3	272	5	303	6
Min	300	6	248	6	269	4	293	2	198	2	222	2	171	0	241	0	166	0	197	0	220	0	256	0
Max	535	13	545	21	387	22	446	5	441	15	606	14	376	13	374	10	650	10	514	6	312	9	369	10

Annual Summary	
INF	EFF
327	5
166	0
650	22

South Bay Wastewater Reclamation Plant

2017 BOD Percent Removal



2017 BOD Percent Removals

BOD Removals - 2017

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	98.5	100.0	97.0		99.5	98.0		98.4		99.5	100.0		
2	98.1	98.1	96.1	99.4	100.0		96.9	100.0		98.8	100.0		
3	97.6			100.0	100.0		97.7	100.0	99.2	97.9			
4	97.9			100.0	100.0	99.1	94.7		98.2	99.6		98.5	
5	96.7	97.8	94.3	100.0		97.7	96.7		97.9	99.3	100.0	98.7	
6		94.6	94.6	100.0		99.4	96.8	100.0	99.4		98.6	98.6	
7		98.2	94.3		100.0	99.4		100.0	95.5		98.6	98.0	
8	97.9	95.5	94.8		100.0	99.3		98.9		99.5	98.1		
9	97.9	97.6	94.3	100.0	100.0		96.5	100.0		98.9	98.1		
10	97.7			100.0	100.0		98.6	100.0	98.2	98.7		98.7	
11	97.1			100.0	100.0	99.1	97.6		97.3	99.0			
12	98.0	98.1	92.3	100.0		99.5	97.5		97.6	98.9	97.6	97.5	
13		98.1	97.3	99.3		100.0	97.2	98.9	97.7		96.3	98.0	
14		98.0	97.5		98.7	100.0		99.2	98.0		97.4	98.2	
15		98.9	97.6		99.5	98.2		98.6		99.2	98.0		
16	98.3	97.8	97.8	98.8	97.3		97.7	98.7		99.3	96.8		
17	98.5			99.2	95.1		97.7	98.6	98.5	98.9			
18	95.7			100.0	97.1	98.4	99.2		99.0	98.9		98.3	
19	98.3	97.8	98.0	99.3		99.2			98.7	99.0	97.9	96.8	
20		98.0	98.7	100.0		99.3	100.0	98.9	98.8		97.6	98.3	
21		98.0	98.5		97.5	97.6		98.8	99.0		98.0	96.9	
22	97.0	97.9	98.5		97.2	98.1		96.3		99.1	98.2		
23	97.9	97.5	98.4	100.0	96.8		100.0	96.5			98.1		
24	97.5			100.0	97.4		100.0	98.8	98.5			97.7	
25	98.4			100.0	97.6	98.8	100.0		99.6	98.6		97.2	
26		97.1	98.5	100.0		99.7	100.0		99.4		98.7	97.6	
27		96.2	98.9	98.8		98.9	100.0	99.1	98.4		97.9	97.2	
28		95.2	98.8		98.7	96.2		98.7	99.5		98.3	97.8	
29	98.9		98.8		98.5	95.1		100.0			98.6		
30	97.4		98.8	100.0	98.4		100.0	100.0		100.0	98.6		
31	97.8				98.1		99.4	98.8		100.0		97.1	Annual Summary
Average	97.8	97.52	97.0	99.7	98.6	98.6	98.3	99.0	98.4	99.1	98.2	97.8	98.3
Minimum	95.7	94.62	92.3	98.8	95.1	95.1	94.7	96.3	95.5	97.9	96.3	96.8	92.3
Maximum	98.9	100.0	98.9	100.0	100.0	100.0	100.0	100.0	99.6	100.0	100.0	98.7	100.0

F. Toxicity Testing: South Bay Water Reclamation Plant 2017

INTRODUCTION

The City of San Diego's Toxicology Laboratory (CSDTL) performed aquatic toxicity testing (bioassays) of effluent from the South Bay Water Reclamation Plant (SBWRP) during calendar year 2017 as required by Order No. R9-2013-0006, NPDES Permit No. CA0109045, and as amended by Order No. R9-2014-0071. The current testing requirements are designed to determine the chronic toxicity of effluent samples collected from the SBWRP. This chapter presents summaries and discussion of all toxicity tests conducted in the calendar year 2017.

Toxicity testing of wastewater effluent measures the bioavailability of toxicants in a complex mixture, accounts for interactions among potential toxicants, and integrates the effects of all constituents. Acute and chronic bioassays are characterized by the duration of exposure of test organisms to a toxicant as well as the adverse effect (measured response) produced as the result of exposure to a toxicant.

Acute toxicity testing consists of a short-term exposure period, usually 96 hours or less, and the acute effect refers to mortality of the test animals. Annual acute toxicity testing of SBWRP effluent is not required under Order No. R9-2013-0006, as amended by Order No. R9-2014-0071.

Chronic toxicity testing, in the classic sense, refers to long-term exposure of the test organism to a potential toxicant. This may involve exposing the test organism for its entire reproductive life cycle, which may exceed 12 months for organisms such as fish. In general, chronic tests are inherently more sensitive to toxicants than acute tests in that adverse effects are detected at lower toxicant concentrations. The City of San Diego is required to conduct quarterly critical/early life stage chronic tests of SBWRP effluent that are intermediate between the acute and chronic toxicity testing protocols discussed above. These test results serve as short-term estimates of chronic toxicity.

All required toxicity analyses in 2017 were performed by the CSDTL's internal toxicology laboratory. The laboratory is certified by the California State Water Resources Control Board Environmental Laboratory Accreditation Program (Certificate No. 1989).

MATERIALS & METHODS

Test Materials

SBWRP Effluent

Twenty-four hour, flow-weighted, effluent composite samples were collected at the in-stream sampling site (designated SB_Outfall_00) for the SBWRP and stored between 0 – 6 ºC with minimal light exposure until test initiation. All tests were initiated within 36 hours of sample collection. The exposure series consisted 0.26, 0.53, 1.05, 2.10, and 4.20% effluent for the chronic tests. Dilution water for all tests (effluent and reference toxicant) was obtained from the Scripps Institution of Oceanography (SIO), filtered, held at approximately 15 ºC, and used within 96 hours of collection or frozen to produce hypersaline brine. Detailed descriptions for all toxicity test procedures are provided in the City of San Diego Toxicology Laboratory Quality Assurance Manual (City of San Diego 2017).

Chronic Bioassays

In 2016 the City conducted chronic bioassays of the SBWRP effluent in accordance with the biennial species sensitivity re-screening requirement using the red abalone (*Haliotis rufescens)*, giant kelp (*Macrocystis pyrifera)*, and topsmelt (*Atherinops affinis)*. The giant kelp was selected as the most sensitive species for continued monitoring of the SBWRP effluent in accordance with USEPA protocol EPA/600/R-95/136 (USEPA 1995).

Kelp Germination and Growth

During the current reporting period (January–December 2017), chronic bioassays using the giant kelp, *Macrocystis pyrifera*, were conducted for the SBWRP effluent on a quarterly basis in accordance with USEPA protocol EPA/600/R-95/136 (USEPA 1995).

Kelp zoospores were obtained from the reproductive blades (sporophylls) of adult *Macrocystis* plants at the kelp beds near La Jolla, California one day prior to test initiation. The zoospores were exposed in a static system for 48 ± 3 hours to the effluent exposure series. A SIO water control was also tested.

Simultaneous reference toxicant testing was performed using reagent grade copper chloride. The exposure series consisted of 10, 32, 100, 180, 320, and 560 µg/L copper. A SIO seawater control was also tested.

At the end of the exposure period, 100 randomly-selected zoospores from each replicate were examined and the percent germination was recorded. In addition, germ-tube length was measured and recorded for 10 of the germinated zoospores.

Data were analyzed in accordance with “Flowchart for statistical analysis of giant kelp, *Macrocystis pyrifera*, germination data” and “Flowchart for statistical analysis of giant kelp, *Macrocystis pyrifera*, growth data” (see USEPA 1995).

Statistical Methods

All data were analyzed using a combination of multiple comparison and point estimation methods prescribed by USEPA (1995). Comprehensive Environmental Toxicity Information System (CETIS) Software (Tidepool Scientific 2013) was used for statistical analyses. In addition, all multi-concentration tests were subjected to an evaluation of the concentration-response relationship.

In accordance with USEPA guidelines on method variability, the lower "Percent Minimum Significant Difference" (PMSD) bound was also evaluated for chronic toxicity test data in order to minimize Type 1 error (i.e., false positives). If the relative difference between an exposure concentration and the control was smaller than the 10^{th} percentile PMSD value listed for the test method in the USEPA guidance document, then the exposure concentration was further evaluated using other EPA-approved statistical strategies (USEPA 2000).

RESULTS & DISCUSSION

Chronic Toxicity of SBWRP Effluent

All monitoring bioassays in 2017 were conducted with Giant kelp, *Macrocystis pyrifera*, and met the test acceptability criteria and the NPDES permit's chronic toxicity performance goal (Table T.1).

REFERENCES

City of San Diego. 2017. Quality Assurance Manual. City of San Diego Ocean Monitoring Program, Metropolitan Wastewater Department, Environmental Monitoring and Technical Services Division, San Diego, CA

Hemmer, MJ, DP Middaugh, V Comparetta. 1992. Comparative Acute Sensitivity of Larval Topsmelt, *Atherinops affinis*, and Inland Silverside, *Menidia beryllina*, to 11 Chemicals. Environmental Toxicology and Chemistry, 11(3): 401-408.

Tidepool Scientific Software. 2013. Comprehensive Environmental Toxicity Information System Software.

USEPA. 1995. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, OH, EPA/600/R-95/136.

USEPA. 2000. Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program. U.S. Environmental Protection Agency, Office of Water (4203), EPA 833-R-00-003.

Table T.1
Results of SBWRP effluent chronic toxicity tests conducted in 2017. Data are presented as chronic toxic units (TUc).

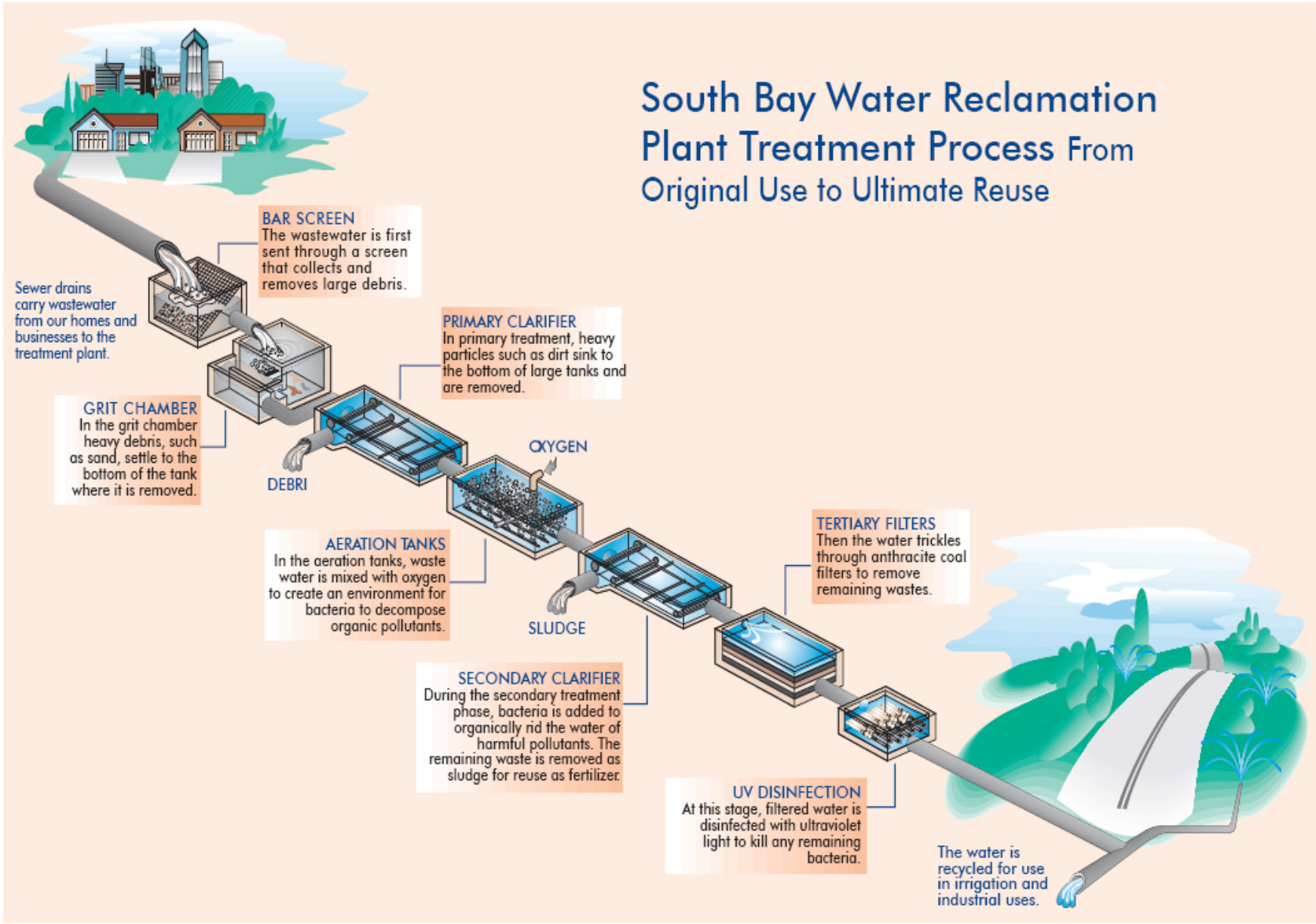
Sample Date	Red Abalone	Giant Kelp		Topsmelt	
	Development	Germination	Growth	Survival	Growth
01/17/2017	-	<23.8	<23.8	-	-
04/17/2017	-	<23.8	<23.8	-	-
09/11/2017	-	<23.8	<23.8	-	-
10/16/2017	-	<23.8	<23.8	-	-
N	0	4	4	0	0
No. in compliance	-	4	4	-	-
Mean TUc	-	<23.8	<23.8	-	-

NPDES permit performance goal: 96 TUc

III. Plant Operations Summary

A. Flows
B. Rain Days
C. Chemical Report
D. Facilities Out of Service Report

This page is intentionally left blank.


South Bay Water Reclamation Plant Treatment Process From Original Use to Ultimate Reuse
Sewer drains carry wastewater from our homes and businesses to the treatment plant.
BAR SCREEN
The wastewater is first sent through a screen that collects and removes large debris.
GRIT CHAMBER
In the grit chamber heavy debris, such as sand, settle to the bottom of the tank where it is removed.
PRIMARY CLARIFIER
In primary treatment, heavy particles such as dirt sink to the bottom of large tanks and are removed.
DEBRI
OXYGEN
AERATION TANKS
In the aeration tanks, waste water is mixed with oxygen to create an environment for bacteria to decompose organic pollutants.
SLUDGE
SECONDARY CLARIFIER
During the secondary treatment phase, bacteria is added to organically rid the water of harmful pollutants. The remaining waste is removed as sludge for reuse as fertilizer.
TERTIARY FILTERS
Then the water trickles through anthracite coal filters to remove remaining wastes.
UV DISINFECTION
At this stage, filtered water is disinfected with ultraviolet light to kill any remaining bacteria.
The water is recycled for use in irrigation and industrial uses.

Overview of the Wastewater Treatment Process

Please see the treatment process flow diagram on the preceding page.

Debris, large particulates, and sand are removed in the headworks by mechanical bar-screens and aerated grit removal systems. The process then consists of classical primary sedimentation and secondary treatment by activated sludge. While secondary effluent may be discharged directly to the ocean outfall the usual process directs the treated secondary effluent to reclamation and beneficial reuse by tertiary treatment and disinfection. Even if not beneficially reused, most of the flow goes through tertiary treatment. Tertiary treatment consists of filtration through Anthracite Coal Beds followed by disinfection with high intensity UV (ultraviolet) light. At this stage the "reclaimed" water meets California Title 22 full body contact requirements.

Untreated wastewater (Influent) enters the plant's Headworks from the South Bay region. In the Headworks, the wastewater passes through large, rake-like Bar Screens to remove solid debris and floating material (called "Rags") such as cloth, wood, and plastic material. These "rags" are dewatered and trucked to a landfill.

Following the headworks, the screened wastewater then passes through aerated Grit Chambers where heavier solids such as sand, gravel, coffee grounds and eggshells settle out and are removed. The grit is then dewatered and taken to landfills.

Wastewater then flows into the Primary Sedimentation Basins where the sedimentation process starts. Solids sink to the bottom of the tanks and "scum" (grease and cooking oils) float to the surface. "Raw Sludge" which has settled to the bottom of the basins is returned to the sewer system and sent to the Point Loma Wastewater Treatment Plant. Similarly, the scum is skimmed from the surface and returned to the sewer system.

The wastewater then enters Anoxic Zone Chambers that are oxygen depleted. The wastewater mixes with bacteria ("Bugs") that eat soluble organic material. The wastewater then flows into Aeration Basins where diffused air is pumped into the water. Here, the bugs begin to ingest and digest the organic solids while increasing in number and density.

Wastewater flows from the Aeration Basin into the Secondary Clarifiers where the bacteria and digested solids settle to the bottom as "Secondary Sludge." Some of this Sludge and any remaining scum are removed and returned to the sewer system for treatment at the Point Loma Wastewater Treatment Plant. The remaining sludge is returned to the Anoxic Basins and again mixed with the wastewater.

The water, now treated to a Secondary Treatment level, can either be discharged into the ocean though the South Bay Ocean Outfall or moved on to Tertiary Treatment for reclaimed water applications and beneficial reuse[5].

In Tertiary Treatment, the treated wastewater (effluent) flows into Anthracite Coal Beds where it is filtered of remaining solids as it passes through the coal medium. The filtered water then passes through chambers where it is disinfected through exposure to high-intensity UV (ultraviolet) light.

[5] The Recycled Water Users Summary Report as described in Permit No. 2000-203 is submitted separately.

SBWRP Annual Monitoring Report
2017 Flow Report

(Million Gallons / Day)

Mon	Influent	Outfall	Secondary Effluent	South Metro Interceptor Return	Recycled Production	Distributed Recycled	Dilution Water Added Recycled	Recycled Plant Internal use
01	7.27	6.20	2.43	.99	4.65	.06	.00	.82
02	7.32	6.24	3.28	.90	3.97	.18	.00	.83
03	7.88	5.72	3.31	1.00	4.43	1.18	.00	.84
04	7.90	3.04	1.52	1.11	6.16	3.75	.00	.89
05	7.76	3.64	1.56	.96	6.18	3.19	.00	.91
06	7.89	2.54	.62	.96	7.07	4.38	.00	.77
07	7.63	1.91	.07	1.01	7.60	4.79	.00	.96
08	7.37	1.63	.10	.90	7.33	4.91	.00	.88
09	6.97	1.99	.01	1.00	7.14	4.18	.00	.99
10	6.98	2.09	.15	1.13	6.96	3.95	.00	1.08
11	6.94	3.53	1.64	.83	5.49	2.73	.00	.86
12	6.82	3.32	1.53	.94	5.31	2.63	.00	.88
avg	7.39	3.49	1.35	.98	6.02	2.99	.00	.89

(Million Gallons / Month)

Mon	Influent	Outfall	Secondary Effluent	South Metro Interceptor Return	Recycled Production	Distributed Recycled	Dilution Water Added Recycled	Recycled Plant Internal use
01	225.50	192.20	75.37	30.76	144.18	1.77	.00	25.57
02	204.98	174.62	91.91	25.16	111.07	5.15	.00	23.16
03	244.13	177.31	102.69	31.08	137.24	36.54	.01	26.06
04	237.06	91.33	45.53	33.40	184.94	112.42	.05	26.81
05	240.52	112.98	48.43	29.79	191.55	98.75	.00	28.24
06	236.67	76.18	18.69	28.90	212.12	131.39	.00	23.24
07	236.54	59.35	2.06	31.18	235.63	148.59	.00	29.70
08	228.50	50.63	3.03	28.04	227.25	152.20	.00	27.42
09	209.11	59.58	.43	30.03	214.28	125.52	.00	29.61
10	216.47	64.82	4.72	35.01	215.83	122.37	.00	33.36
11	208.15	106.03	49.21	24.92	164.56	81.88	.00	25.90
12	211.53	103.01	47.31	29.02	164.51	81.47	.00	27.41
avg	224.93	105.67	40.78	29.77	183.60	91.50	.01	27.21
sum	2699.16	1268.04	489.38	357.29	2203.16	1098.05	.06	326.48

A. Flows

South Bay Water Reclamation Plant

Effluent flows (mgd) 2017

Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	5.94	6.54	6.64	5.97	2.81	3.83	3.15	0.24	0.11	4.26	3.55	3.20	
2	6.36	6.54	6.46	4.58	0.84	2.01	3.71	0.82	2.77	2.06	3.34	4.44	
3	6.23	6.70	6.42	3.45	2.57	2.69	1.48	1.40	3.67	1.60	2.80	5.17	
4	6.37	6.15	5.99	2.69	3.03	5.95	1.77	1.64	1.07	1.59	4.18	3.74	
5	6.23	5.68	6.15	2.06	1.88	3.99	1.99	2.88	1.79	0.94	5.24	3.53	
6	4.32	6.59	6.65	4.45	4.87	1.75	1.87	3.57	0.93	4.25	2.76	3.44	
7	6.12	3.69	7.00	5.03	6.57	2.45	0.12	2.71	0.85	3.27	3.29	2.64	
8	5.98	6.16	7.22	2.61	5.32	3.64	3.70	3.20	1.13	5.13	6.00	2.73	
9	6.32	6.18	7.39	3.99	7.17	3.11	5.46	0.98	2.33	2.11	3.90	4.38	
10	6.14	6.37	7.39	5.11	6.64	2.72	1.71	0.12	5.68	3.67	3.48	5.53	
11	6.32	6.00	7.39	2.10	6.53	4.51	1.40	0.93	0.26	0.51	4.74	3.86	
12	6.39	5.94	6.77	0.95	2.99	3.09	1.41	2.50	1.36	1.74	5.78	2.74	
13	6.49	4.92	3.80	1.26	4.42	2.63	1.39	3.86	2.25	1.20	2.97	3.17	
14	6.07	4.77	4.66	1.33	5.14	1.71	0.13	0.17	2.57	1.07	3.24	3.56	
15	5.41	6.36	3.48	1.12	4.68	4.57	0.10	1.14	1.14	2.63	3.07	1.12	
16	5.40	6.76	7.19	1.22	3.86	2.80	1.48	1.14	1.72	0.63	2.42	0.29	
17	6.01	7.00	3.06	1.89	2.77	1.19	2.02	1.11	3.61	0.52	2.28	4.81	
18	6.62	6.67	3.89	6.43	2.51	3.86	2.04	1.25	1.62	0.85	4.01	0.41	
19	6.59	6.63	6.37	6.82	2.43	0.16	2.02	1.46	1.09	1.26	3.93	3.91	
20	6.47	7.11	4.68	4.44	4.06	3.87	1.35	3.27	2.12	1.52	2.33	3.21	
21	5.18	7.01	3.54	0.85	5.04	0.13	0.13	1.09	2.01	1.68	2.77	3.92	
22	6.34	6.30	7.17	0.10	2.55	0.13	0.92	1.50	0.86	3.48	2.34	3.65	
23	6.77	6.45	7.23	3.40	3.15	1.56	3.95	0.55	3.43	1.78	2.38	4.46	
24	6.73	6.51	5.33	1.00	1.89	3.47	2.22	1.37	4.55	1.85	2.59	5.22	
25	7.09	5.99	6.99	1.52	1.75	3.62	1.54	1.89	1.39	2.70	4.52	3.71	
26	7.01	5.96	6.41	3.17	3.16	1.50	1.75	2.13	0.40	2.01	4.63	2.79	
27	6.44	6.72	6.21	4.44	2.03	1.52	1.52	4.08	1.12	0.55	3.94	2.29	
28	6.02	6.92	5.38	4.53	4.05	1.36	0.88	1.50	2.23	0.55	2.91	2.29	
29	6.06		4.72	0.10	2.03	1.43	2.67	0.84	1.57	4.88	3.88	2.43	
30	6.38		3.41	4.72	3.52	0.93	3.47	0.57	3.95	1.44	2.76	2.01	
31	6.40		2.32		2.72		2.00	0.72		3.09		4.36	Annual Summary
Average	6.20	6.24	5.72	3.04	3.64	2.54	1.91	1.63	1.99	2.09	3.53	3.32	3.47
Minimum	4.32	3.69	2.32	0.10	0.84	0.13	0.10	0.12	0.11	0.51	2.28	0.29	0.10
Maximum	7.09	7.11	7.39	6.82	7.17	5.95	5.46	4.08	5.68	5.13	6.00	5.53	7.39
Total	192.20	174.62	177.31	91.33	112.98	76.18	59.35	50.63	59.58	64.82	106.03	103.01	1,268

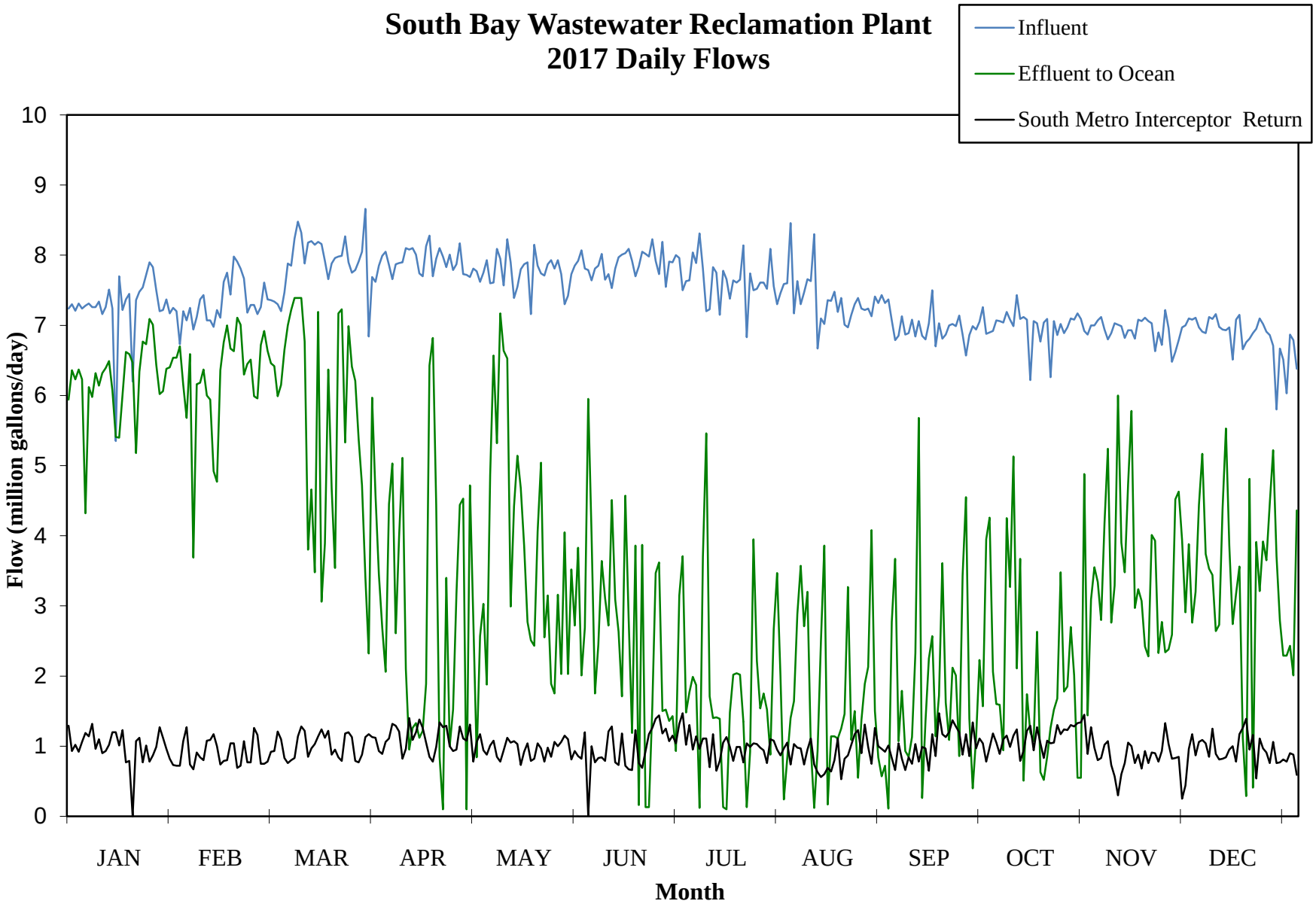
South Bay Water Reclamation Plant
Influent Flows (mgd) 2017

Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	7.24	7.25	7.37	7.69	7.81	7.92	7.96	7.59	7.37	6.90	7.00	7.11	
2	7.30	7.20	7.36	7.62	7.77	8.07	7.50	7.60	7.07	6.92	7.07	6.97	
3	7.21	6.73	7.34	7.85	7.62	7.81	7.63	8.46	6.79	7.07	7.12	6.91	
4	7.31	7.20	7.30	7.99	7.75	7.79	7.64	7.17	6.85	7.06	6.94	6.89	
5	7.24	7.07	7.20	8.05	7.93	7.64	8.04	7.63	7.13	7.04	6.80	7.12	
6	7.28	7.25	7.47	7.86	7.60	7.81	7.89	7.30	6.87	7.19	6.89	7.09	
7	7.31	6.94	7.88	7.66	7.61	7.85	8.31	7.47	6.89	7.08	7.03	7.16	
8	7.26	7.12	7.85	7.87	8.09	8.02	7.81	7.66	7.08	6.99	7.01	6.98	
9	7.26	7.37	8.24	7.89	7.95	7.65	7.20	7.63	6.84	7.43	6.99	6.94	
10	7.34	7.43	8.48	7.90	7.57	7.73	7.23	8.30	7.06	7.09	6.82	6.93	
11	7.16	7.07	8.32	8.10	8.23	7.53	7.83	6.67	6.85	7.12	6.93	6.97	
12	7.26	7.07	7.88	8.08	7.90	7.81	7.75	7.10	6.80	7.08	6.93	6.51	
13	7.51	6.98	8.18	8.10	7.39	7.97	7.15	7.02	7.03	6.22	6.81	7.08	
14	7.24	7.22	8.20	8.01	7.55	8.01	7.78	7.36	7.50	7.06	7.08	7.15	
15	5.35	7.11	8.15	7.74	7.80	8.03	7.66	7.35	6.70	7.03	7.06	6.66	
16	7.70	7.62	8.19	7.70	7.87	8.09	7.38	7.48	7.03	6.77	7.11	6.76	
17	7.22	7.75	8.16	8.13	7.90	7.92	7.64	7.19	6.81	7.04	7.06	6.81	
18	7.37	7.44	7.92	8.28	7.16	7.70	7.61	7.39	6.87	7.09	7.03	6.89	
19	7.45	7.98	7.66	7.70	8.15	7.84	7.65	7.01	7.00	6.26	6.63	6.95	
20	6.20	7.91	7.88	7.95	7.85	8.05	8.14	6.97	7.02	7.06	6.90	7.10	
21	7.36	7.81	7.96	8.10	7.74	8.02	6.83	7.15	6.99	6.86	6.72	7.02	
22	7.48	7.67	7.98	7.98	7.71	7.98	7.74	7.30	7.14	7.02	7.22	6.91	
23	7.54	7.18	7.99	7.83	7.87	8.23	7.50	7.39	6.87	6.89	6.96	6.86	
24	7.72	7.29	8.27	8.01	7.93	7.92	7.52	7.24	6.57	6.97	6.48	6.71	
25	7.90	7.29	7.90	7.79	7.81	7.73	7.61	7.22	6.86	7.10	6.62	5.80	
26	7.83	7.16	7.75	7.87	7.93	8.19	7.61	7.24	6.99	7.08	6.79	6.67	
27	7.50	7.26	7.79	8.17	7.73	7.55	7.52	7.13	6.94	7.17	6.97	6.51	
28	7.20	7.61	7.91	7.73	7.30	7.91	8.09	7.41	7.05	7.09	7.00	6.03	
29	7.22		8.05	7.72	7.42	7.90	7.56	7.32	7.26	6.92	7.10	6.87	
30	7.37		8.66	7.69	7.73	8.00	7.30	7.43	6.88	6.87	7.08	6.79	
31	7.17		6.84		7.85		7.46	7.32		7.00		6.38	Annual Summary
Average	7.27	7.32	7.88	7.90	7.76	7.89	7.63	7.37	6.97	6.98	6.94	6.82	7.39
Minimum	5.35	6.73	6.84	7.62	7.16	7.53	6.83	6.67	6.57	6.22	6.48	5.80	5.35
Maximum	7.90	7.98	8.66	8.28	8.23	8.23	8.31	8.46	7.50	7.43	7.22	7.16	8.66
Total	225.50	204.98	244.13	237.06	240.52	236.67	236.54	228.50	209.11	216.47	208.15	211.53	2,699

South Bay Water Reclamation Plant

Blended Sludge Discharge to South Metro Interceptor (mgd) 2017

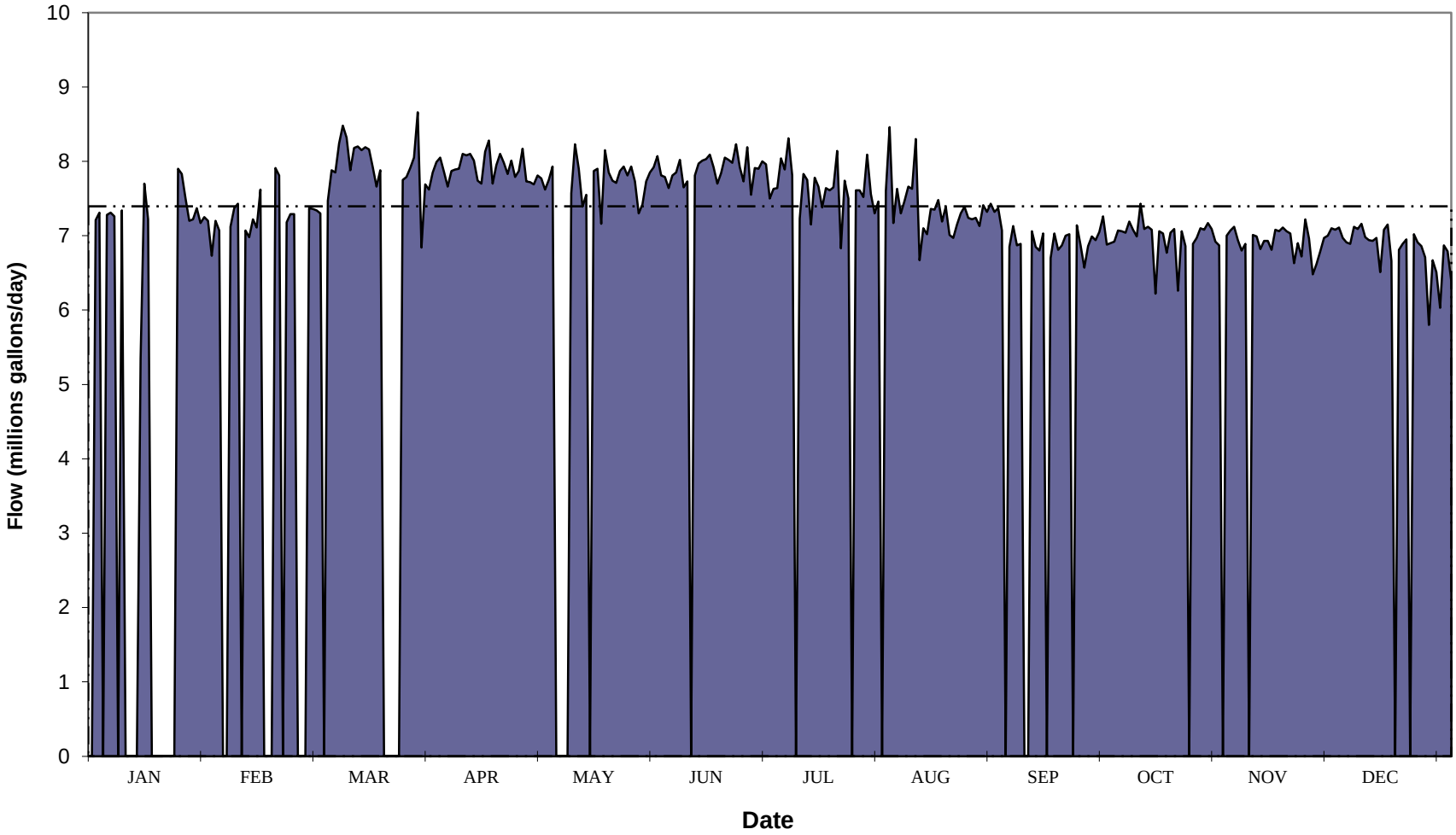
Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	1.29	0.73	0.78	1.13	0.78	0.86	1.32	0.97	1.01	0.98	0.98	0.87	
2	0.93	0.72	0.92	1.12	1.06	0.82	1.47	1.05	0.83	1.18	0.80	1.06	
3	1.02	0.72	0.93	0.93	1.17	1.20	1.02	0.74	0.66	1.05	0.83	1.09	
4	0.92	1.07	1.21	0.89	0.94	0.01	1.30	1.03	1.04	0.89	1.02	1.04	
5	1.06	1.27	1.10	1.06	0.88	1.00	0.95	0.98	0.82	1.10	1.07	0.85	
6	1.19	0.74	0.83	1.11	1.01	0.77	1.14	0.97	0.66	1.15	0.73	1.25	
7	1.14	0.67	0.76	1.32	1.08	0.83	0.96	0.74	0.84	0.99	0.57	0.89	
8	1.32	0.91	0.80	1.29	0.85	0.84	1.11	0.95	0.75	1.15	0.30	0.81	
9	0.96	0.84	0.83	1.21	0.78	0.79	1.11	1.11	1.03	1.24	0.60	0.82	
10	1.10	0.80	1.14	0.82	0.94	1.21	0.70	0.74	0.78	0.79	0.76	0.84	
11	0.90	1.08	1.28	0.96	1.12	1.28	1.17	0.63	0.99	0.93	1.05	0.95	
12	0.93	1.09	1.22	1.40	1.05	0.77	0.65	0.56	0.97	1.22	1.00	1.00	
13	1.02	1.17	0.85	1.09	1.07	0.73	0.79	0.60	0.65	1.29	0.76	0.78	
14	1.20	1.00	0.97	1.20	1.03	1.18	1.05	0.69	1.17	0.94	0.88	1.17	
15	1.20	0.74	1.03	1.38	0.73	0.72	1.13	0.64	0.86	1.27	0.68	1.26	
16	1.01	0.79	1.14	1.26	0.92	0.67	0.99	0.80	1.47	1.04	0.93	1.39	
17	1.23	0.80	1.24	1.05	1.04	0.66	0.79	1.11	1.17	0.83	0.76	0.95	
18	0.77	1.04	1.12	0.85	0.79	1.23	0.99	0.53	1.13	1.08	0.91	1.16	
19	0.79	1.04	1.22	0.78	0.82	0.76	0.99	0.82	1.20	1.04	0.90	0.54	
20	0.00	0.69	0.88	0.99	1.04	0.69	0.77	0.87	1.37	1.05	0.78	1.11	
21	1.07	0.72	0.95	1.34	0.97	0.93	1.04	1.02	1.28	1.30	0.93	0.97	
22	1.12	1.07	0.84	1.27	0.78	1.17	0.99	1.17	1.20	1.17	1.33	0.91	
23	0.77	0.77	0.79	1.29	0.98	1.26	1.04	1.23	0.88	1.24	1.03	0.76	
24	1.01	0.77	1.18	1.00	0.85	1.39	1.03	0.90	1.17	1.23	0.82	1.06	
25	0.78	1.26	1.20	0.93	1.06	1.44	0.98	1.31	0.86	1.30	0.83	0.76	
26	0.87	1.16	1.13	0.95	1.00	1.18	0.94	0.99	1.34	1.28	0.85	0.77	
27	0.99	0.75	0.79	1.28	1.06	1.25	0.76	0.75	0.97	1.33	0.25	0.81	
28	1.27	0.75	0.77	1.11	1.15	1.07	1.10	1.26	1.11	1.34	0.44	0.78	
29	1.12		0.88	1.08	1.10	1.15	1.08	1.00	1.04	1.45	0.96	0.90	
30	0.96		1.13	1.31	0.81	1.04	0.95	0.96	0.78	0.89	1.17	0.88	
31	0.82		1.17		0.93		0.87	0.92		1.27		0.59	Annual Summary
Average	0.99	0.90	1.00	1.11	0.96	0.96	1.01	0.90	1.00	1.13	0.83	0.94	0.98
Minimum	0.00	0.67	0.76	0.78	0.73	0.01	0.65	0.53	0.65	0.79	0.25	0.54	0.00
Maximum	1.32	1.27	1.28	1.40	1.17	1.44	1.47	1.31	1.47	1.45	1.33	1.39	1.47
Total	30.76	25.16	31.08	33.40	29.79	28.90	31.18	28.04	30.03	35.01	24.92	29.02	357


South Bay Wastewater Reclamation Plant
2017 Daily Flows
Influent
Effluent to Ocean
South Metro Interceptor Return
Flow (million gallons/day)
0
1
2
3
4
5
6
7
8
9
10
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Month

South Bay Water Reclamation Plant
Influent Dry Weather Flows (mgd) 2017

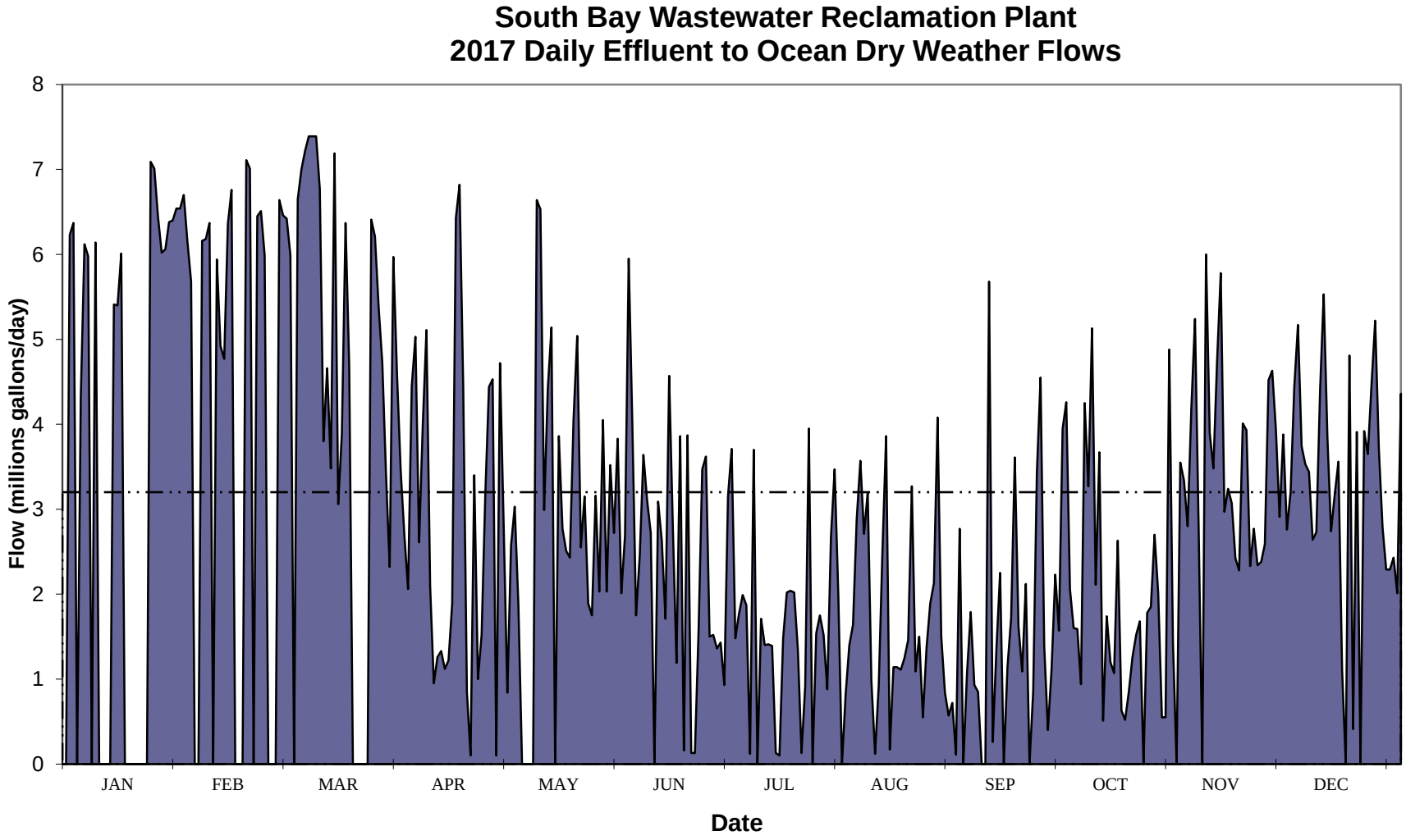
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1		7.25	7.37	7.69	7.81	7.92	7.96		7.37	6.90	7.00	7.11	
2		7.20	7.36	7.62	7.77	8.07	7.50	7.60	7.07	6.92	7.07	6.97	
3	7.21	6.73	7.34	7.85	7.62	7.81	7.63	8.46		7.07	7.12	6.91	
4	7.31	7.20	7.30	7.99	7.75	7.79	7.64	7.17	6.85	7.06	6.94	6.89	
5		7.07		8.05	7.93	7.64	8.04	7.63	7.13	7.04	6.80	7.12	
6	7.28		7.47	7.86		7.81	7.89	7.30	6.87	7.19	6.89	7.09	
7	7.31		7.88	7.66		7.85	8.31	7.47	6.89	7.08		7.16	
8	7.26	7.12	7.85	7.87		8.02	7.81	7.66		6.99	7.01	6.98	
9		7.37	8.24	7.89		7.65		7.63		7.43	6.99	6.94	
10	7.34	7.43	8.48	7.90	7.57	7.73	7.23	8.30	7.06	7.09	6.82	6.93	
11			8.32	8.10	8.23		7.83	6.67	6.85	7.12	6.93	6.97	
12		7.07	7.88	8.08	7.90	7.81	7.75	7.10	6.80	7.08	6.93	6.51	
13		6.98	8.18	8.10	7.39	7.97	7.15	7.02	7.03	6.22	6.81	7.08	
14		7.22	8.20	8.01	7.55	8.01	7.78	7.36		7.06	7.08	7.15	
15	5.35	7.11	8.15	7.74		8.03	7.66	7.35	6.70	7.03	7.06	6.66	
16	7.70	7.62	8.19	7.70	7.87	8.09	7.38	7.48	7.03	6.77	7.11		
17	7.22		8.16	8.13	7.90	7.92	7.64	7.19	6.81	7.04	7.06	6.81	
18			7.92	8.28	7.16	7.70	7.61	7.39	6.87	7.09	7.03	6.89	
19			7.66	7.70	8.15	7.84	7.65	7.01	7.00	6.26	6.63	6.95	
20		7.91	7.88	7.95	7.85	8.05	8.14	6.97	7.02		6.90		
21		7.81		8.10	7.74	8.02	6.83	7.15		6.86	6.72	7.02	
22				7.98	7.71	7.98	7.74	7.30	7.14	0.00	7.22	6.91	
23		7.18		7.83	7.87	8.23	7.50	7.39	6.87	6.89	6.96	6.86	
24		7.29		8.01	7.93	7.92		7.24	6.57	6.97	6.48	6.71	
25	7.90	7.29		7.79	7.81	7.73	7.61	7.22	6.86	7.10	6.62	5.80	
26	7.83		7.75	7.87	7.93	8.19	7.61	7.24	6.99	7.08	6.79	6.67	
27	7.50		7.79	8.17	7.73	7.55	7.52	7.13	6.94	7.17	6.97	6.51	
28	7.20		7.91	7.73	7.30	7.91	8.09	7.41	7.05	7.09	7.00	6.03	
29	7.22		8.05	7.72	7.42	7.90	7.56	7.32	7.26	6.92	7.10	6.87	
30	7.37		8.66	7.69	7.73	8.00	7.30	7.43	6.88	6.87	7.08	6.79	
31	7.17		6.84		7.85		7.46	7.32				6.38	Annual Summary
Average	7.26	7.27	7.87	7.90	7.75	7.90	7.65	7.36	6.96	6.74	6.94	6.82	7.37
Minimum	5.35	6.73	6.84	7.62	7.16	7.55	6.83	6.67	6.57	0.00	6.48	5.80	0.00
Maximum	7.90	7.91	8.66	8.28	8.23	8.23	8.31	8.46	7.37	7.43	7.22	7.16	8.66
Total	116	131	197	237	201	229	222	221	174	195	201	198	2322

South Bay Wastewater Reclamation Plant
2017 Daily Influent Dry Weather Flows

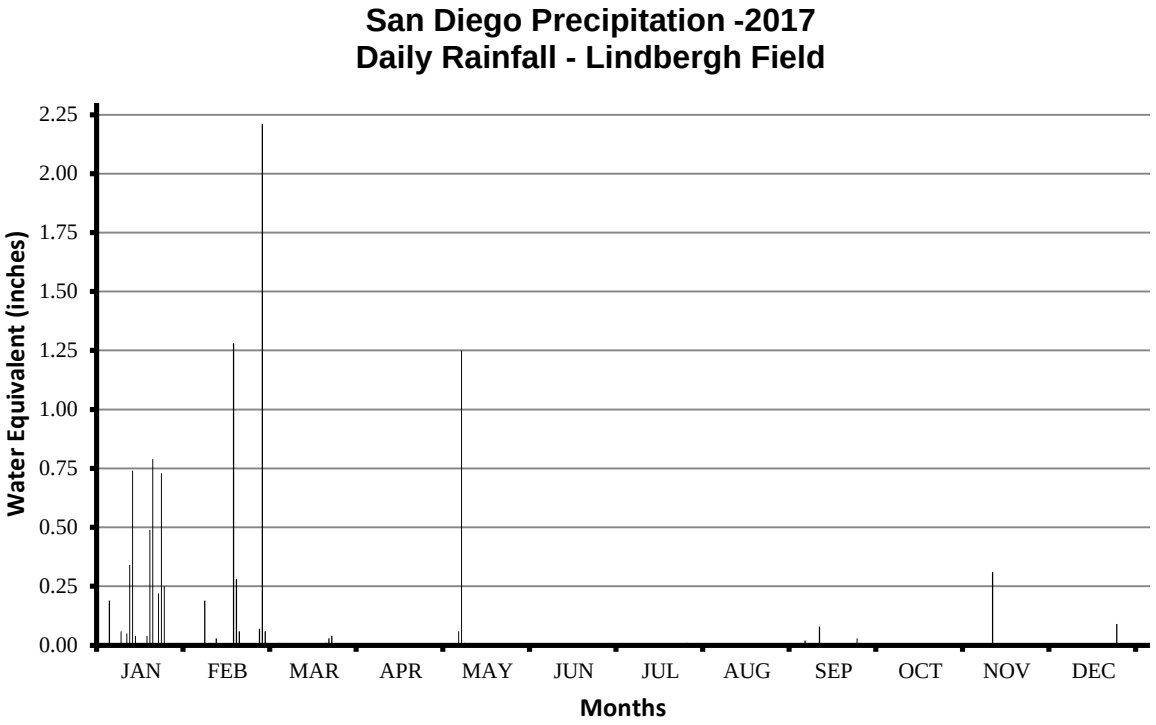


South Bay Water Reclamation Plant
Effluent Dry Weather Flows (mgd) 2017

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1		6.54	6.64	5.97	2.81	3.83	3.15		0.11	4.26	3.55	3.20	
2		6.54	6.46	4.58	0.84	2.01	3.71	0.82	2.77	2.06	3.34	4.44	
3	6.23	6.70	6.42	3.45	2.57	2.69	1.48	1.40		1.60	2.80	5.17	
4	6.37	6.15	5.99	2.69	3.03	5.95	1.77	1.64	1.07	1.59	4.18	3.74	
5		5.68		2.06	1.88	3.99	1.99	2.88	1.79	0.94	5.24	3.53	
6	4.32		6.65	4.45		1.75	1.87	3.57	0.93	4.25	2.76	3.44	
7	6.12		7.00	5.03		2.45	0.12	2.71	0.85	3.27		2.64	
8	5.98	6.16	7.22	2.61		3.64	3.70	3.20		5.13	6.00	2.73	
9		6.18	7.39	3.99		3.11		0.98		2.11	3.90	4.38	
10	6.14	6.37	7.39	5.11	6.64	2.72	1.71	0.12	5.68	3.67	3.48	5.53	
11			7.39	2.10	6.53		1.40	0.93	0.26	0.51	4.74	3.86	
12		5.94	6.77	0.95	2.99	3.09	1.41	2.50	1.36	1.74	5.78	2.74	
13		4.92	3.80	1.26	4.42	2.63	1.39	3.86	2.25	1.20	2.97	3.17	
14		4.77	4.66	1.33	5.14	1.71	0.13	0.17		1.07	3.24	3.56	
15	5.41	6.36	3.48	1.12		4.57	0.10	1.14	1.14	2.63	3.07	1.12	
16	5.40	6.76	7.19	1.22	3.86	2.80	1.48	1.14	1.72	0.63	2.42		
17	6.01		3.06	1.89	2.77	1.19	2.02	1.11	3.61	0.52	2.28	4.81	
18			3.89	6.43	2.51	3.86	2.04	1.25	1.62	0.85	4.01	0.41	
19			6.37	6.82	2.43	0.16	2.02	1.46	1.09	1.26	3.93	3.91	
20		7.11	4.68	4.44	4.06	3.87	1.35	3.27	2.12		2.33		
21		7.01		0.85	5.04	0.13	0.13	1.09		1.68	2.77	3.92	
22				0.10	2.55	0.13	0.92	1.50	0.86	0.00	2.34	3.65	
23		6.45		3.40	3.15	1.56	3.95	0.55	3.43	1.78	2.38	4.46	
24		6.51		1.00	1.89	3.47		1.37	4.55	1.85	2.59	5.22	
25	7.09	5.99		1.52	1.75	3.62	1.54	1.89	1.39	2.70	4.52	3.71	
26	7.01		6.41	3.17	3.16	1.50	1.75	2.13	0.40	2.01	4.63	2.79	
27	6.44		6.21	4.44	2.03	1.52	1.52	4.08	1.12	0.55	3.94	2.29	
28	6.02		5.38	4.53	4.05	1.36	0.88	1.50	2.23	0.55	2.91	2.29	
29	6.06		4.72	0.10	2.03	1.43	2.67	0.84	1.57	4.88	3.88	2.43	
30	6.38		3.41	4.72	3.52	0.93	3.47	0.57	3.95	1.44	2.76	2.01	
31	6.40		2.32		2.72		2.00	0.72				4.36	Annual Summary
Average	6.09	6.23	5.64	3.04	3.25	2.47	1.78	1.68	1.91	1.96	3.54	3.43	3.20
Minimum	4.32	4.77	2.32	0.10	0.84	0.13	0.10	0.12	0.11	0.00	2.28	0.41	0.00
Maximum	7.09	7.11	7.39	6.82	6.64	5.95	3.95	4.08	5.68	5.13	6.00	5.53	7.39
Total	97.4	112.1	141	91	84.4	71.7	51.7	50.4	47.9	56.7	102.7	99.5	1007


South Bay Wastewater Reclamation Plant
2017 Daily Effluent to Ocean Dry Weather Flows
Flow (millions gallons/day)
0
1
2
3
4
5
6
7
8
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Date

B. Rain Days


San Diego Precipitation -2017
Daily Rainfall - Lindbergh Field
Water Equivalent (inches)
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Months

San Diego Precipitation – 2017
Daily Rainfall – Lindbergh Field

Total Annual Precipitation = 10.1 **Maximum=2.21** **Trace=0**

First Quarter		Second Quarter		Third Quarter		Fourth Quarter	
Date	Rain	Date	Rain	Date	Rain	Date	Rain
1-Jan-17	0.03	6-May-17	0.06	9-Jul-17	T	20-Oct-17	T
2-Jan-17	T	7-May-17	1.25	24-Jul-17	0.01	31-Oct-17	T
5-Jan-17	0.19	8-May-17	0.01	1-Aug-17	T	7-Nov-17	0.31
9-Jan-17	0.06	9-May-17	T	3-Sep-17	0.02	16-Dec-17	T
11-Jan-17	0.05	15-May-17	T	8-Sep-17	0.08	20-Dec-17	0.09
12-Jan-17	0.34	11-Jun-17	T	9-Sep-17	T		
13-Jan-17	0.74			14-Sep-17	T		
14-Jan-17	0.04			21-Sep-17	0.03		
18-Jan-17	0.04						
19-Jan-17	0.49						
20-Jan-17	0.79						
21-Jan-17	T						
22-Jan-17	0.22						
23-Jan-17	0.73						
24-Jan-17	0.25						
6-Feb-17	T						
7-Feb-17	0.19						
11-Feb-17	0.03						
17-Feb-17	1.28						
18-Feb-17	0.28						
19-Feb-17	0.06						
22-Feb-17	T						
26-Feb-17	0.07						
27-Feb-17	2.21						
28-Feb-17	0.06						
5-Mar-17	0.01						
21-Mar-17	0.01						
22-Mar-17	0.03						
23-Mar-17	0.04						
24-Mar-17	T						
25-Mar-17	T						
TOTALS	8.24		1.32		0.14		0.4

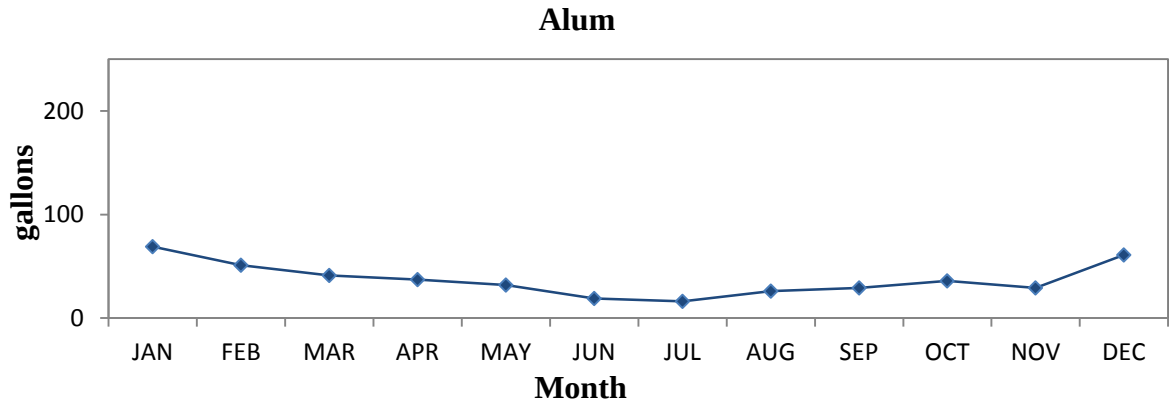
C. Chemical Report

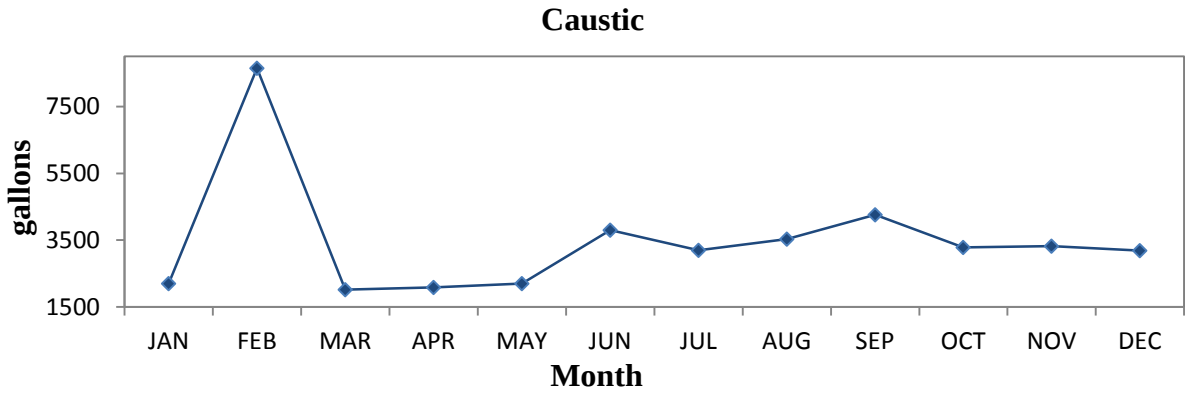
South Bay Water Reclamation Plant - Annual Chemical Usage Report

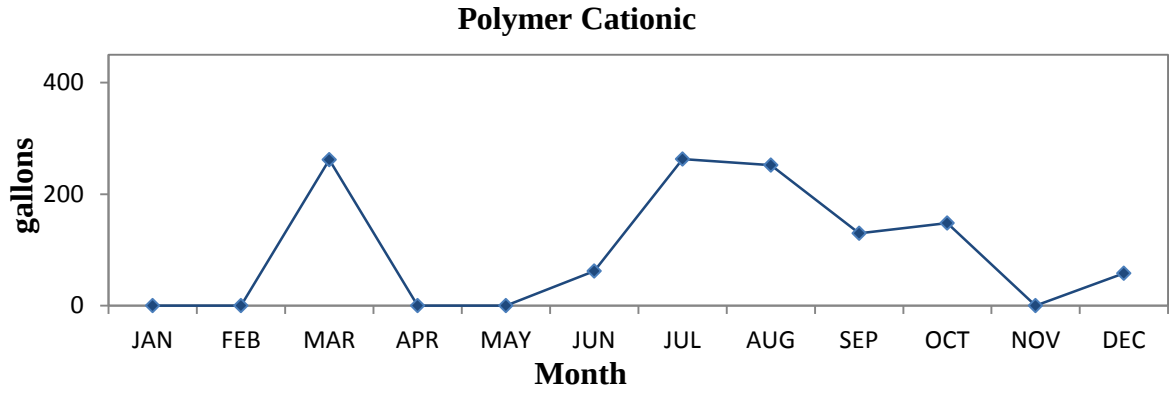
Year 2017

Date	Hypochlorite Gallons	Alum Chloride Gallons	Polymer Cationic Gallons	Sodium Hydroxide Gallons
JAN	16,754	69	0	2,205
FEB	12,512	51	0	8,646
MAR	14,754	41	262	2,024
APR	16,389	37	0	2,083
MAY	20,301	32	0	2,204
JUN	27,324	19	62	3,803
JUL	29,411	16	263	3,199
AUG	33,502	26	252	3,538
SEP	31,237	29	130	4,260
OCT	23,165	36	148	3,289
NOV	25,435	29	0	3,324
DEC	23,729	61	58	3187
Avg	22,876	37	98	3480
Sum	274,513	446	1175	41762

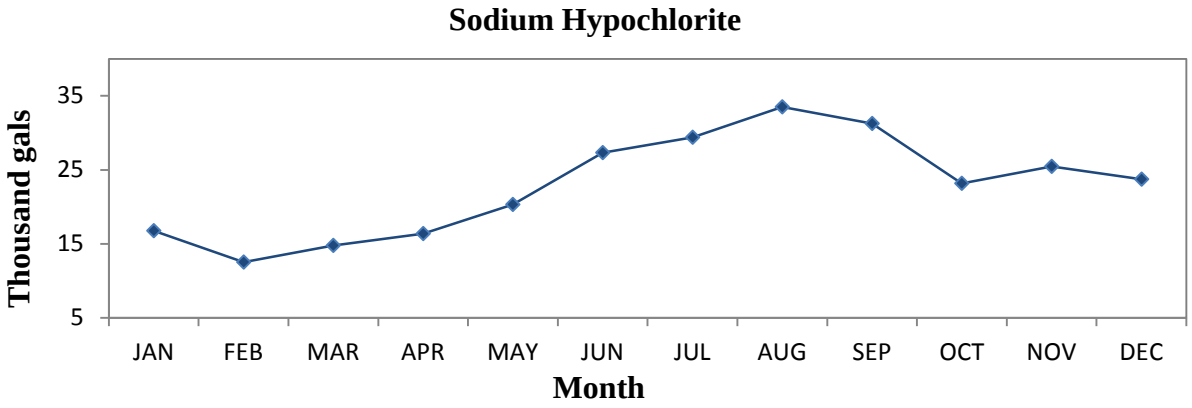
South Bay Water Reclamation Plant
2017 Monthly Chemical Usage







South Bay Water Reclamation Plant
2017 Monthly Chemical Usage



D. Facilities Out of Service Report

2017 SBWRP FACILITIES OUT OF SERVICE REPORT
FACILITIES OOS BY DATE

Barscreens

	FROM	TO	REASON
Barscreen 1	2/6/2017	8/31/2017	Screen rag presser shoot has multiple holes displacing rags out of the vertical conveyor. Rake pin rack rusted and deteriorated, requires major repair.
Barscreen 1	3/22/2017	3/22/2017	Clean tines on traveling screen.
Barscreen 1	3/22/2017	3/23/2017	Bar screen high torque alarm will not clear. Please investigate and repair as necessary.
Barscreen 1	3/23/2017	7/17/2017	Overhaul traveling screen #1 at SBWRP.
Barscreen 1	5/5/2017	5/15/2017	Cut keyway into sprocket to mirror matching sprocket. SBWRP maintenance personnel will deliver sprockets to CSF Shop and provide details.
Barscreen 1	7/17/2017	7/24/2017	Cut keyway into sprocket to mirror matching sprocket. SBWRP maintenance personnel will deliver sprockets to CSF Shop and provide details.
Barscreen 1	7/31/2017	8/9/2017	Overhaul Rake arm track, sprockets and all related worn parts.
Barscreen 1	8/7/2017	8/8/2017	Welder tack weld keyway on sprocket.
Barscreen 1	10/20/2017	11/30/2017	Barscreen #1 needs a channel cleaning. There is a 12 inch thick layer of floating scum
Barscreen 1	11/15/2017	11/28/2017	Bar Screen not collecting trash. Needed tending, brake not working and off track.
Barscreen 2	4/1/2017	4/4/2017	Control power alarm will not clear. Please repair as necessary.
Barscreen 2	5/11/2017	5/15/2017	Bar screen is not fully racking. Please investigate and repair as necessary. Thank you
Barscreen 2	6/30/2017	7/31/2017	Overhaul- Traveling bar screen sprocket out of sync, rack pin and roller worn out badly and need of replacement.
Barscreen 2	9/11/2017	9/12/2017	Could not lubricate the shafts because the brake on the rake is not working.
Barscreen 2	9/13/2017	9/11/2017	Barscreen #2 repeatedly fail on control power. Investigate repair as necessary.
Barscreen 2	10/20/2017	11/30/2017	Barscreen #2 needs a channel cleaning. Bottom of the channel is full with rags and debris.
Barscreen 2	12/18/2017	1/11/2018	Bar screen #2 differential level does not change. Please check bar screen for obstruction.

Primary Sedimentation

	FROM	TO	REASON
Pri Sed 1	2/14/2017	8/16/2017	Remove and replace broken chain in tank.
Pri Sed 1	3/6/2017	8/22/2017	Prepare concrete for contractors to make repairs.
Pri Sed 1	11/6/2017	11/9/2017	Please re-assemble chains and flights inside tank. Then place tank back in service.
Pri Sed 2	2/2/2017	3/14/2017	Odor logger - please make a hole in the lid for

			primary #2 scum trough to install odor logger.
Pri Sed 2	2/6/2017	2/26/2017	Primary sludge sampling port is plugged. Please unplug and provide us with a way of unplugging in the future. We need to do quarterly sampling today, so this needs to be unplugged asap.
Pri Sed 2	2/13/2017	2/13/2017	Primary sed. Tank #2 draw off valve 10 mov7041 is not closing even the strategy is calling for it to close. Please check.
Pri Sed 2	7/5/2017	11/29/2017	Install worm gear on tipping trough.
Pri Sed 3	1/17/2017	6/8/2017	Inlet valve 10 MOV 7052 is in gen fail. Please troubleshoot and repair.
Pri Sed 3	12/18/2017	12/18/2017	Unplug primary tank #3 draw off using instrument air or UWHP.
Pri Sed 4	3/16/2017	8/17/2017	Please repair, replace odor control dampener by scum collector stuck in the close position, unit is inside tank and has limited access.
Pri Sed 5	5/17/2017	6/2/2017	Primary tank #5 draw off valve failing to open intermittently. This cause the strategy to fail and skip pumping from this tank. 10mov7071
Pri Sed 5	7/8/2017	7/8/2017	We have a PSL draw off v tank 5 gen fail alarm that will not clear. Please troubleshoot and repair.
Pri Sed 5	10/30/2017	10/31/2017	Primary tank #5 draw off valve MOV 7071 - slow drip leak.

Aeration Basins

	FROM	TO	REASON
Aer Basin 1	10/18/2017	10/18/2017	Aeration Basin 1 take offline and place Aeration Basin 2 online. Move DO probes from Basin 1 to Basin 2.
Aer Basin 1	11/6/2017	11/7/2017	We are putting Aeration Basin #1 online and taking Aeration Basin #3 offline. Please remove DO Probes from #3 Basin and install in #1 Basin.
Aer Basin 1	11/7/2017	11/7/2017	Aeration Basin #1: Please install/retrofit Purge Blow Off valves above the grading for the purge lines near zones 2, 3, and 4.
Aer Basin 2	6/27/2017	6/28/2017	Aeration Basin #2 DO probe Zone #2 is in alarm for high DO. Please check and calibrate.
Aer Basin 2	9/25/2017	10/14/2017	Inspect and repair aeration tank. Perform complete evaluation of basin.
Aer Basin 2	10/18/2017	10/18/2017	Aeration basin 2 do probes. Operations is placing this basin online. Buy and replace two new do probes. See WO# 17-46263.
Aer Basin 4	1/24/2017	3/8/2017	Inspect diffusers in basin.
Aer Basin 6	9/20/2017	9/20/2017	Please install DO Probes. The tank is now in service.
Aer Basin 7	5/10/2017	5/10/2017	Aeration basin #7 DO meter zone #2. Please check and calibrate. It's been cleaned several

			times and still not tracking.
Aer Basin 8	1/3/2017	1/17/2017	Wash down and inspect tank and diffusers. Flush and clean. Repair diffusers and lateral lines as needed.
Aer Basin 8	10/9/2017	3/10/2018	15 FCV 380- digital output reading for the cfm is not working. Please investigate and repair as necessary.

Secondary Clarifiers

	FROM	TO	REASON
Sec Clar 5	1/2/2017	3/10/2018	Shear pin failure.
Sec Clar 7	7/5/2017	8/31/2017	Please repair loose sludge collector chain.
Sec Clar 8	1/2/2017	3/10/2018	Has a shear pin fail. Please repair as necessary.
Sec Clar 8	2/9/2017	2/22/2017	Shear pin alarm.
Sec Clar 8	4/6/2017	4/6/2017	Secondary 8 sludge collector has a SHEAR PIN FAIL alarm. Please troubleshoot.
Sec Clar 8	8/2/2017	8/3/2017	Please repair/ tighten loose chain.
Sec Clar 9	12/11/2017	12/14/2017	Shear- pin fail. Please repair as necessary.

Tertiary Filters

	FROM	TO	REASON
Ter Filter 5	3/29/2017	12/4/2017	The filter backwash line for Filter 5 is rusting/leaking at the AIR RELIEF ball valve.
Ter Filter 5	6/21/2017	6/21/2017	Various valves are in gen fail. Please investigate and repair as necessary. Thank you.
Ter Filter 6	3/29/2017	8/16/2017	The filter backwash line for Filter 6 is rusting/leaking at the AIR RELIEF ball valve.
Ter Filter 7	3/24/2017	8/16/2017	25-MOV-274 Filter #7 Drain Valve Binding. Failing in DCS and hard to move using the hand wheel.
Ter Filter 7	3/29/2017	12/4/2017	The filter backwash line for Filter 7 is rusting/leaking at the AIR RELIEF ball valve.
Ter Filter 7	4/26/2017	12/5/2017	FLI valve (25-MOV-272) will not operate. Open or close. Please investigate and repair or replace as necessary. Thank you.

FACILITIES OOS BY PROCESS

Bar Screens

	FROM	TO
Barscreen 1	2/6/2017	8/31/2017
	3/22/2017	3/22/2017
	3/22/2017	3/23/2017
	3/23/2017	7/17/2017
	5/5/2017	5/15/2017
	7/17/2017	7/24/2017

	7/31/2017	8/9/2017
	8/7/2017	8/8/2017
	10/20/2017	11/30/2017
	11/15/2017	11/28/2017
Barscreen 2	4/1/2017	4/4/2017
	5/11/2017	5/15/2017
	6/30/2017	7/31/2017
	9/11/2017	9/12/2017
	9/13/2017	9/11/2017
	10/20/2017	11/30/2017
	12/18/2017	1/11/2018

Primary Sedimentation

	FROM	TO
Pri Sed 1	2/14/2017	8/16/2017
	3/6/2017	8/22/2017
	11/6/2017	11/9/2017
Pri Sed 2	2/2/2017	3/14/2017
	2/6/2017	2/26/2017
	2/13/2017	2/13/2017
	7/5/2017	11/29/2017
Pri Sed 3	1/17/2017	6/8/2017
	12/18/2017	12/18/2017
Pri Sed 4	3/16/2017	8/17/2017
Pri Sed 5	5/17/2017	6/2/2017
	7/8/2017	7/8/2017
	10/30/2017	10/31/2017

Aeration Basins

	FROM	TO
Aer Basin 1	10/18/2017	10/18/2017
	11/6/2017	11/7/2017
	11/7/2017	11/7/2017
Aer Basin 2	6/27/2017	6/28/2017
	9/25/2017	10/14/2017
	10/18/2017	10/18/2017
Aer Basin 4	1/24/2017	3/8/2017
Aer Basin 6	9/20/2017	9/20/2017
Aer Basin 7	5/10/2017	5/10/2017
Aer Basin 8	1/3/2017	1/17/2017
	10/9/2017	3/10/2018

Secondary Clarifiers

	FROM	TO
Sec Clar 5	1/2/2017	3/10/2018
Sec Clar 7	7/5/2017	8/31/2017

Sec Clar 8	1/2/2017	3/10/2018
	2/9/2017	2/22/2017
	4/6/2017	4/6/2017
	8/2/2017	8/3/2017
Sec Clar 9	12/11/2017	12/14/2017

Tertiary Filter

	FROM	TO
Ter Filter 5	3/29/2017	12/4/2017
	6/21/2017	6/21/2017
Ter Filter 6	3/29/2017	8/16/2017
Ter Filter 7	3/24/2017	8/16/2017
	3/29/2017	12/4/2017
	4/26/2017	12/5/2017

This page intentionally left blank.

IV. Combined Ocean Outfall Data

As of 2016 Combine Outfall (IWTP) samples are no longer analyzed; therefore no data is available.

This page left intentionally blank

V. Ocean Monitoring Data Summary

Please refer to our Ocean Monitoring Reports located on the City's website at

https://www.sandiego.gov/mwwd/environment/oceanmonitor/reports

This page is left intentionally left blank.

2017 Annual Pretreatment Program Sludge Analysis
(QUARTERLY SLUDGE PROJECT)

SOUTH BAY WATER RECLAMATION PLANT
Order No. R9-2013-0006 as by amended by Order No. R9-2014-0071
NPDES Permit No.CA0109045

The Quarterly Sludge Project is part of the South Bay WRP NPDES (Permit No. CA0109045/ Order No. R9-2013-0006) monitoring requirements for the Metropolitan Sewerage System. The sampling plan is designed so as to provide a "snapshot" of all of the physical and chemical characteristics monitored of the wastewater treatment waste streams for a short interval of time (1-2 days). This is conducted quarterly.

The Quarterly Sludge Project was conducted four times during 2017. Sampling occurred on February 7, May 2, August 1, and October 3. Monthly composite samples of MBC dewatered sludge (belt-press dewatered) during the respective calendar months were taken and analyzed for a similar suite of parameters. The tables showing the results of these analyses follow in this section. Results relative to the Pt. Loma WWTP or North City Water Reclamation Plant are in the respective annual reports for those facilities.

***** pH, Grease & Oils, temperature, and conductivity are determined from grab samples.

Abbreviations:

SB_INF_02	SBWRP influent
SB_OUTFALL_01	SBWRP effluent
SB_REC_WATER_34	SBWRP reclaim water
SB_PRIEFF_10	Primary Effluent
SB_SEC_EFF_20	Secondary effluent
SB_RSL_10	Primary Sed Tank to Sludge Line

This page intentionally left blank

SOUTH BAY WATER RECLAMATION PLANT
Daily Parameters and Metals

Annual 2017

Source:			INF	INF	INF	INF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units				
Aluminum	23.8	UG/L	619	590	356	623
Antimony	2.44	UG/L	3.4	ND	ND	1.5
Arsenic	1.84	UG/L	1.4	1.0	ND	ND
Barium	.7	UG/L	106	72.6	66.1	95.400
Beryllium	.12	UG/L	ND	ND	ND	ND
Boron	1.4	UG/L	356	351	367	369
Cadmium	.26	UG/L	0.39	ND	ND	0.15
Chromium	.54	UG/L	12.9	4.6	2.7	3.2
Cobalt	.24	UG/L	1.33	0.81	0.73	0.51
Copper	2.16	UG/L	103	96.3	82.4	95.00
Iron	17.1	UG/L	12100	884	523	727
Lead	1.68	UG/L	3.69	1.72	2.30	1.81
Manganese	.78	UG/L	195	107	110	122.00
Mercury	.25	UG/L	0.084	0.192	0.164	0.117
Molybdenum	.32	UG/L	11.4	6.24	6.42	6.62
Nickel	.53	UG/L	8.90	6.18	4.52	4.53
Selenium	.662	UG/L	1.43	1.29	3.32	3.27
Silver	.73	UG/L	ND	ND	ND	0.3
Thallium	3.12	UG/L	ND	ND	ND	ND
Vanadium	2.77	UG/L	3.32	3.09	1.07	4.59
Zinc	4.19	UG/L	200	184	132	179.0
Calcium Hardness	.147	MG/L	186	151	132	145
Magnesium Hardness	.321	MG/L	117	121	100	114
Total Hardness	.469	MG/L	303	272	232	259
Total Alkalinity (bicarbonate)	20	MG/L	349	353	344	374
Calcium	.059	MG/L	74.4	60.4	52.9	58.0
Lithium	.002	MG/L	0.041	NR	0.022*	0.023
Magnesium	.078	MG/L	28.4	29.4	24.3	27.7
Potassium	.1	MG/L	18.5	23.4	19.1	20.4
Sodium	.927	MG/L	211	235	193	212
Bromide	.1	MG/L	0.3	0.6	0.5	0.4
Chloride	7	MG/L	280	240	246	263
Fluoride	.05	MG/L	0.46	0.44	0.53	0.50
Nitrate	.04	MG/L	0.09	0.23	0.07	0.10
Ortho Phosphate (as PO4)	.2	MG/L	7.4	12.0	12.5	12.0
Sulfate	9	MG/L	187	83	77	88
Cyanide, Total	.002	MG/L	ND	0.002	NR	NR
Cyanide, Total	.005	MG/L	NR	NR	<0.005	<0.005^
BOD	2	MG/L	399	273	374	280
ph (grab)		PH	7.55	7.66	7.42	7.61
Settleable Solids	.1	ML/L	19.0	23.8	24.3	21.0
Turbidity	.13	NTU	152	175	195.00	200.00
Total Kjeldahl Nitrogen	1.2	MG/L	56.7	61.4	NR	55.2
Ammonia-N	.3	MG/L	37.8	34.4	40.4	38.6
Sulfides-Total	.35	MG/L	3.97	5.52	2.98	2.89
Total Suspended Solids	2.5	MG/L	347	196	284.0	282.0
Volatile Suspended Solids	2.5	MG/L	333	192	264.0	256.0
Total Dissolved Solids	100	MG/L	1050	900	980	996
MBAS (Surfactants)	.03	MG/L	7.88	6.87	7.99	6.16

*= Method blank value above the MDL; sample result not included in average calculations.
^= Minimum level of 0.005 mg/L was not included in calibration.

ND= Not Detected; NR= Not Required

Chromium results are for Total Chromium.

SOUTH BAY WATER RECLAMATION PLANT
Daily Parameters and Metals

Annual 2017

Source:			EFF	EFF	EFF	EFF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units				
Aluminum	23.8	UG/L	46	ND	ND	172
Antimony	2.44	UG/L	2.6	ND	ND	0.7
Arsenic	1.84	UG/L	0.5	0.4	ND	ND
Barium	.7	UG/L	24.5	43.4	39.6	43.8
Beryllium	.12	UG/L	ND	ND	ND	ND
Boron	1.4	UG/L	372	659	379	370
Cadmium	.26	UG/L	ND	ND	ND	ND
Chromium	.54	UG/L	1.5	0.6	0.8	0.6
Cobalt	.24	UG/L	0.82	0.47	0.76	0.21
Copper	2.16	UG/L	5.49	10.4	7.72	8.58
Iron	17.1	UG/L	194	37	29	68
Lead	1.68	UG/L	ND	ND	ND	0.33
Manganese	.78	UG/L	133	13.0	13.1	18.2
Mercury	.25	UG/L	0.003	0.004	0.002	0.008
Molybdenum	.32	UG/L	7.99	3.57	3.02	3.72
Nickel	.53	UG/L	7.61	2.53	2.41	2.71
Selenium	.662	UG/L	0.93	0.35	ND	1.78
Silver	.73	UG/L	ND	ND	0.9	ND
Thallium	3.12	UG/L	ND	ND	ND	ND
Vanadium	2.77	UG/L	0.72	1.28	0.96	ND
Zinc	4.19	UG/L	19.4	59.7	58.8	54.4
Calcium Hardness	.147	MG/L	194	140	135	154
Magnesium Hardness	.321	MG/L	119	97	99	115
Total Hardness	.469	MG/L	313	237	234	269
Total Alkalinity (bicarbonate)	20	MG/L	154	152	150	161
Calcium	.059	MG/L	77.7	56.1	54.0	61.8
Lithium	.002	MG/L	0.035	NR	0.015	0.020
Magnesium	.078	MG/L	28.9	23.6	23.9	27.8
Potassium	.1	MG/L	16.7	18.7	17.6	17.9
Sodium	.927	MG/L	194	192	201	220
Bromide	.1	MG/L	0.3	0.5	0.5	0.4
Chloride	7	MG/L	272	242	268	292
Fluoride	.05	MG/L	0.49	0.45	0.60	0.59
Nitrate	.04	MG/L	38.6	44.5	42.1	55.70
Ortho Phosphate (as PO4)	.2	MG/L	0.6	1.4	7.0	4.9
Sulfate	9	MG/L	227	127	118	132
Cyanide, Total	.002	MG/L	0.002	ND	NR	NR
Cyanide, Total	.005	MG/L	NR	NR	<0.005	<0.005^
BOD	2	MG/L	7	ND	6	6
pH (grab)		PH	7.11	7.17	7.26	7.15
Settleable Solids	.1	ML/L	ND	ND	ND	ND
Turbidity	.13	NTU	2.33	0.54	1.43	1.37
Total Kjeldahl Nitrogen	1.2	MG/L	2.5	2.0	2.4	1.3
Chlorine Residual, Total	.03	MG/L	ND	0.04	ND	ND
Ammonia-N	.3	MG/L	ND	ND	ND	ND
Sulfides-Total	.35	MG/L	ND	<0.35	0.94	ND
Total Suspended Solids	2.5	MG/L	6.3	ND	2.8	4.5
Volatile Suspended Solids	2.5	MG/L	5.8	ND	ND	3.8
Total Dissolved Solids	100	MG/L	1110	916	1020	1030
MBAS (Surfactants)	.03	MG/L	0.08	0.09	0.07	ND

^= Minimum level of 0.005 mg/L was not included in calibration.

ND= Not Detected; NR= Not Required

Chromium results are for Total Chromium.

SOUTH BAY WATER RECLAMATION PLANT
Daily Parameters and Metals

Annual 2017

Source:			PRI_EFF	PRI_EFF	PRI_EFF	PRI_EFF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units				
Aluminum	23.8	UG/L	401	252	293	353
Antimony	2.44	UG/L	3.6	ND	ND	0.8
Arsenic	1.84	UG/L	1.2	0.9	ND	ND
Barium	.7	UG/L	83.2	56.8	63.4	66.0
Beryllium	.12	UG/L	ND	ND	ND	ND
Boron	1.4	UG/L	381	432	366	376
Cadmium	.26	UG/L	ND	ND	ND	ND
Chromium	.54	UG/L	8.7	1.5	2.1	1.6
Cobalt	.24	UG/L	1.02	0.58	0.70	0.36
Copper	2.16	UG/L	66.9	58.8	71.7	58.1
Iron	17.1	UG/L	9110	362	421	374
Lead	1.68	UG/L	ND	ND	2.18	0.97
Manganese	.78	UG/L	190	98.7	107	109
Mercury	.25	UG/L	0.072	0.084	0.066	0.059
Molybdenum	.32	UG/L	10.1	4.95	5.81	5.27
Nickel	.53	UG/L	5.87	3.66	3.98	3.14
Selenium	.662	UG/L	1.54	0.81	ND	2.44
Silver	.73	UG/L	ND	ND	ND	0.1
Thallium	3.12	UG/L	ND	ND	ND	ND
Vanadium	2.77	UG/L	1.40	1.59	1.19	3.12
Zinc	4.19	UG/L	130	98.4	110	91.2
Calcium Hardness	.147	MG/L	191	141	136	150
Magnesium Hardness	.321	MG/L	121	102	101	118
Total Hardness	.469	MG/L	312	243	237	268
Total Alkalinity (bicarbonate)	20	MG/L	341	344	333	358
Calcium	.059	MG/L	76.5	56.4	54.6	59.9
Lithium	.002	MG/L	0.041	NR	0.019*	0.022
Magnesium	.078	MG/L	29.5	24.7	24.6	28.7
Potassium	.1	MG/L	18.0	19.6	19.1	19.6
Sodium	.927	MG/L	206	192	207	226
Bromide	.1	MG/L	0.4	0.5	0.5	0.4
Chloride	7	MG/L	272	249	268	291
Fluoride	.05	MG/L	0.46	0.45	0.53	0.48
Nitrate	.04	MG/L	0.09	0.18	0.07	0.20
Ortho Phosphate (as PO4)	.2	MG/L	2.7	11.0	12.0	11.6
Sulfate	9	MG/L	186	93	93	100
Cyanide, Total	.002	MG/L	ND	0.002	NR	NR
Cyanide, Total	.005	MG/L	NR	NR	<0.005	<0.005^
BOD	2	MG/L	200	229	216	212
pH (grab)		PH	7.61	7.86	7.62	7.68
Settleable Solids	.1	ML/L	6.0	0.8	5.5	2.5
Turbidity	.13	NTU	129	137	115	101
Total Kjeldahl Nitrogen	1.2	MG/L	54.0	51.7	NR	44.6
Ammonia-N	.3	MG/L	31.9	32.1	37.8	35.0
Sulfides-Total	.35	MG/L	1.17	0.97	1.41	1.29
Total Suspended Solids	2.5	MG/L	208	94.0	118	108
Volatile Suspended Solids	2.5	MG/L	180	90.0	106	103
Total Dissolved Solids	100	MG/L	1200	924	1000	1030
MBAS (Surfactants)	.03	MG/L	4.55	3.82	4.50	3.59

*= Method blank value above the MDL; sample result not included in average calculations.
^= Minimum level of 0.005 mg/L was not included in calibration.

ND= Not Detected; NR= Not Required

Chromium results are for Total Chromium.

SOUTH BAY WATER RECLAMATION PLANT
Daily Parameters and Metals

Annual 2017

Source:			SEC_EFF	SEC_EFF	SEC_EFF	SEC_EFF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units				
Aluminum	23.8	UG/L	50	33	ND	173
Antimony	2.44	UG/L	ND	ND	ND	0.7
Arsenic	1.84	UG/L	0.6	0.8	ND	ND
Barium	.7	UG/L	25.0	43.0	38.9	44.0
Beryllium	.12	UG/L	ND	ND	ND	ND
Boron	1.4	UG/L	373	657	385	374
Cadmium	.26	UG/L	ND	ND	ND	ND
Chromium	.54	UG/L	0.6	0.6	ND	0.5
Cobalt	.24	UG/L	0.83	0.45	0.38	0.20
Copper	2.16	UG/L	12.0	10.4	8.27	10.7
Iron	17.1	UG/L	271	54	43	76
Lead	1.68	UG/L	ND	ND	ND	0.34
Manganese	.78	UG/L	110	30.4	19.9	20.5
Mercury	.25	UG/L	0.003	0.005	0.003	0.006
Molybdenum	.32	UG/L	8.20	3.55	3.40	3.59
Nickel	.53	UG/L	3.83	2.90	2.46	2.74
Selenium	.662	UG/L	0.93	0.38	1.32	1.68
Silver	.73	UG/L	ND	ND	ND	ND
Thallium	3.12	UG/L	ND	ND	ND	ND
Vanadium	2.77	UG/L	0.58	1.24	1.17	ND
Zinc	4.19	UG/L	21.3	59.7	58.0	55.3
Calcium Hardness	.147	MG/L	201	145	138	154
Magnesium Hardness	.321	MG/L	123	99	99	115
Total Hardness	.469	MG/L	324	244	237	269
Total Alkalinity (bicarbonate)	20	MG/L	155	159	153	162
Calcium	.059	MG/L	80.3	58.2	55.2	61.5
Lithium	.002	MG/L	0.040	NR	0.019*	0.022
Magnesium	.078	MG/L	29.8	24.1	24.1	27.9
Potassium	.1	MG/L	17.2	18.5	17.7	18.3
Sodium	.927	MG/L	201	186	201	221
Bromide	.1	MG/L	0.4	0.4	0.5	0.5
Chloride	7	MG/L	272	243	269	290
Fluoride	.05	MG/L	0.49	0.45	0.60	0.58
Nitrate	.04	MG/L	38.7	45.3	37.2	51.9
Ortho Phosphate (as PO4)	.2	MG/L	0.6	1.1	6.6	5.0
Sulfate	9	MG/L	227	127	118	131
Cyanide, Total	.002	MG/L	0.002	0.002	NR	NR
Cyanide, Total	.005	MG/L	NR	NR	<0.005	<0.005^
BOD	2	MG/L	6	7	4	7
pH (grab)		PH	7.29	7.56	7.35	7.43
Settleable Solids	.1	ML/L	ND	ND	ND	ND
Total Kjeldahl Nitrogen	1.2	MG/L	2.1	3.1	1.6	2.4
Ammonia-N	.3	MG/L	1.0	ND	0.5	0.4
Sulfides-Total	.35	MG/L	0.78	0.65	0.63	0.48
Total Suspended Solids	2.5	MG/L	7.1	5.6	4.6	10.3
Volatile Suspended Solids	2.5	MG/L	6.0	5.5	4.4	9.8
Total Dissolved Solids	100	MG/L	1090	916	1030	1010
MBAS (Surfactants)	.03	MG/L	0.09	0.07	0.08	ND

*= Method blank value above the MDL; sample result not included in average calculations.
^= Minimum level of 0.005 mg/L was not included in calibration.

ND= Not Detected; NR= Not Required

Chromium results are for Total Chromium.

SOUTH BAY WATER RECLAMATION PLANT
Daily Parameters and Metals

Annual 2017

Source:			RSL	RSL	RSL	RSL
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919313	P936683	P959827	P973169
Aluminum	23.8	UG/L	1870	5490	6560	9200
Antimony	2.44	UG/L	6.5	4.3	4.7	7.3
Arsenic	1.84	UG/L	2.4	8.1	5.7	7.8
Barium	.7	UG/L	241	378	612	1240
Beryllium	.12	UG/L	ND	ND	0.195	ND
Boron	1.4	UG/L	410	408	381	407
Cadmium	.26	UG/L	1.11	2.45	2.29	2.87
Chromium	.54	UG/L	32.8	25.8	27.8	43.3
Cobalt	.24	UG/L	1.72	5.22	3.88	5.44
Copper	2.16	UG/L	266	592	751	1400
Iron	17.1	UG/L	28800	9020	9540	9610
Lead	1.68	UG/L	5.96	17.1	20.3	33.8
Manganese	.78	UG/L	305	381	409	646
Mercury	.25	UG/L	1.49	2.75	2.68	4.94
Molybdenum	.32	UG/L	14.9	21.1	17.6	30.6
Nickel	.53	UG/L	13.4	28.6	31.5	44.1
Selenium	.662	UG/L	3.48	8.25	16.3	18.0
Silver	.73	UG/L	1.2	1.8	1.7	5.8
Thallium	3.12	UG/L	ND	ND	<3.12	ND
Vanadium	2.77	UG/L	6.63	25.1	31.2	46.0
Zinc	4.19	UG/L	575	1730	2020	3290
Calcium Hardness	.147	MG/L	217	217	243	185
Magnesium Hardness	.321	MG/L	124	130	125	137
Total Hardness	.469	MG/L	341	347	368	322
Total Alkalinity (bicarbonate)	20	MG/L	340	507	439	491
Calcium	.059	MG/L	86.8	87.0	97.4	74.2
Lithium	.002	MG/L	0.040	NR	0.021*	0.022
Magnesium	.078	MG/L	30.1	31.5	30.5	33.4
Potassium	.1	MG/L	21.3	28.5	24.0	25.2
Sodium	.927	MG/L	210	196	214	233
Bromide	.1	MG/L	0.3	1.8	1.3	1.4
Chloride	7	MG/L	253	237	278	292
Fluoride	.05	MG/L	0.45	0.19	0.34	0.24
Nitrate	.04	MG/L	0.07	0.07	0.07	0.17
Ortho Phosphate (as PO4)	.2	MG/L	32.7	41.4	29.4	38.6
Sulfate	9	MG/L	175	18	24	17
Cyanide, Total	.002	MG/L	0.011	0.011	NR	NR
Cyanide, Total	.005	MG/L	NR	NR	0.011	0.006
BOD	2	MG/L	NR	NR	NR	NR
pH		PH	NR	NR	NR	NR
Settleable Solids	.1	ML/L	NR	NR	NR	NR
Total Kjeldahl Nitrogen	1.2	MG/L	83.8	301	NR	271.0
Sulfides-Total	.35	MG/L	ND	17.5	7.69	32.20
Total Suspended Solids	2.5	MG/L	NR	NR	NR	NR
Volatile Suspended Solids	2.5	MG/L	NR	NR	NR	NR
Total Dissolved Solids	100	MG/L	NR	NR	NR	NR
MBAS (Surfactants)	.03	MG/L	NR	NR	NR	NR

*= Method blank value above the MDL; sample result not included in average calculations.

ND= Not Detected; NR= Not Required

Chromium results are for Total Chromium.

SOUTH BAY WATER RECLAMATION PLANT
Daily Parameters and Metals

Annual 2017

Source:			REC_WATER	REC_WATER	REC_WATER	REC_WATER
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units				
Aluminum	23.8	UG/L	47	25	ND	156
Antimony	2.44	UG/L	ND	ND	ND	0.6
Arsenic	1.84	UG/L	0.5	<0.4	ND	ND
Barium	.7	UG/L	26.9	42.8	38.6	37.6
Beryllium	.12	UG/L	ND	ND	ND	ND
Boron	1.4	UG/L	377	733	391	365
Cadmium	.26	UG/L	ND	ND	ND	ND
Chromium	.54	UG/L	1.1	ND	0.9	0.4
Cobalt	.24	UG/L	0.51	0.37	0.59	0.17
Copper	2.16	UG/L	17.1	6.52	7.29	9.65
Iron	17.1	UG/L	103	37	25	48
Lead	1.68	UG/L	2.07	ND	ND	0.20
Manganese	.78	UG/L	32.3	6.18	4.95	6.65
Mercury	.25	UG/L	ND	0.003	0.002	0.002
Molybdenum	.32	UG/L	8.00	3.57	3.35	3.30
Nickel	.53	UG/L	3.84	2.51	2.42	2.48
Selenium	.662	UG/L	0.92	0.37	ND	1.02
Silver	.73	UG/L	ND	ND	ND	ND
Thallium	3.12	UG/L	ND	ND	ND	ND
Vanadium	2.77	UG/L	1.12	1.32	0.49	ND
Zinc	4.19	UG/L	18.4	56.5	53.7	51.4
Calcium Hardness	.147	MG/L	201	139	133	138
Magnesium Hardness	.321	MG/L	124	96	98	102
Total Hardness	.469	MG/L	325	235	230	240
Total Alkalinity (bicarbonate)	20	MG/L	157	155	152	153
Calcium	.059	MG/L	80.6	55.8	53.0	55.5
Lithium	.002	MG/L	0.036	NR	0.012	0.018
Magnesium	.078	MG/L	30.0	23.2	23.7	24.8
Potassium	.1	MG/L	17.3	18.8	16.9	16.8
Sodium	.927	MG/L	203	247	197	210
Bromide	.1	MG/L	0.3	0.5	0.4	0.3
Chloride	7	MG/L	273	243	270	262
Fluoride	.05	MG/L	0.48	0.47	0.60	0.55
Nitrate	.04	MG/L	36.1	43.8	40.4	38.8
Nitrate as N		MG/L	8.16	9.90	9.13	8.77
Ortho Phosphate (as PO4)	.2	MG/L	0.7	1.3	6.7	4.8
Sulfate	9	MG/L	229	128	117	121
Cyanide, Total	.002	MG/L	0.003	0.003	NR	NR
Cyanide, Total	.005	MG/L	NR	NR	<0.005	<0.005^
BOD	2	MG/L	ND	ND	2	ND
pH (grab)		PH	7.03	7.27	7.05	7.14
Turbidity	.13	NTU	0.51	0.55	0.75	0.77
Total Kjeldahl Nitrogen	1.2	MG/L	1.2	2.5	1.7	ND
Ammonia-N	.3	MG/L	ND	ND	ND	ND
Sulfides-Total	.35	MG/L	ND	0.41	1.25	0.48
Total Suspended Solids	2.5	MG/L	ND	ND	ND	ND
Volatile Suspended Solids	2.5	MG/L	ND	ND	ND	ND
Total Dissolved Solids	100	MG/L	1080	900	948	972
MBAS (Surfactants)	.03	MG/L	0.06	0.07	0.07	0.04

^= Minimum level of 0.005 mg/L was not included in calibration.

ND= Not Detected; NR= Not Required

Chromium results are for Total Chromium.

SOUTH BAY WATER RECLAMATION PLANT
Ammonia-Nitrogen and Total Cyanides

Annual 2017

Total Cyanide, MDL=0.005 mg/L

	INF	EFF	PRI EFF	SEC EFF	RSL
07-FEB-2017	ND	0.002	ND	0.002	0.011
02-MAY-2017	0.002	ND	0.002	0.002	0.011
01-AUG-2017	<0.005	<0.005	<0.005	<0.005	0.011
03-OCT-2017	<0.005	<0.005	<0.005*	<0.005*	0.006
AVERAGE	0.001	0.001	0.001	0.001	0.001

Ammonia as Nitrogen, MDL=0.3 mg/L

	INF	EFF	PRI EFF	SEC EFF
07-FEB-2017	37.8	ND	31.9	1.0
02-MAY-2017	34.4	ND	32.1	ND
01-AUG-2017	40.4	ND	37.8	0.5
03-OCT-2017	38.6	ND	35.0	0.4
AVERAGE	37.8	ND	34.2	0.5

*= Minimum level of 0.005 mg/L was not included in calibration.

ND= Not Detected

SOUTH BAY WATER RECLAMATION PLANT
Radioactivity

Annual 2017

Source	Sample Date	Sample ID		Gross Alpha Radiation	Gross Beta Radiation
INFLUENT	07-FEB-2017	P919279		9.7 ± 3.3	13.1 ± 1.9
INFLUENT	02-MAY-2017	P936651		3.9 ± 2.1	15.4 ± 1.9
INFLUENT	01-AUG-2017	P959798		4.4 ± 1.6	14.6 ± 1.5
INFLUENT	03-OCT-2017	P973142		6.2 ± 2.8	3.5 ± 1.7
AVERAGE				6.1 ± 2.5	11.7 ± 1.8

Source	Sample Date	Sample ID		Gross Alpha Radiation	Gross Beta Radiation
EFFLUENT	07-FEB-2017	P919284		4.3 ± 1.9	10.6 ± 1.5
EFFLUENT	02-MAY-2017	P936656		4.6 ± 1.7	8.0 ± 1.5
EFFLUENT	01-AUG-2017	P959803		3.9 ± 1.5	9.9 ± 1.3
EFFLUENT	03-OCT-2017	P973147		2.2 ± 1.5	14.6 ± 2.1
AVERAGE				3.8 ± 1.7	10.8 ± 1.6

Source	Sample Date	Sample ID		Gross Alpha Radiation	Gross Beta Radiation
PRI_EFF	07-FEB-2017	P919294		4.4 ± 1.7	10.1 ± 1.3
PRI_EFF	02-MAY-2017	P936666		6.0 ± 1.9	11.1 ± 1.6
PRI_EFF	01-AUG-2017	P959808		5.1 ± 1.9	11.4 ± 1.7
PRI_EFF	03-OCT-2017	P973152		4.1 ± 2.2	8.5 ± 1.6
AVERAGE				4.9 ± 1.9	10.3 ± 1.6

Source	Sample Date	Sample ID		Gross Alpha Radiation	Gross Beta Radiation
SEC_EFF	07-FEB-2017	P919299		3.4 ± 1.9	8.7 ± 1.5
SEC_EFF	02-MAY-2017	P936671		3.1 ± 2.0	10.7 ± 1.7
SEC_EFF	01-AUG-2017	P959813		2.3 ± 1.5	9.6 ± 1.5
SEC_EFF	03-OCT-2017	P973157		2.6 ± 1.9	15.3 ± 1.9
AVERAGE				2.9 ± 1.8	11.1 ± 1.7

Source	Sample Date	Sample ID		Gross Alpha Radiation	Gross Beta Radiation
REC_WATER	07-FEB-2017	P919315		5.5 ± 2.6	12.0 ± 1.8
REC_WATER	02-MAY-2017	P936685		5.7 ± 1.8	8.6 ± 1.5
REC_WATER	01-AUG-2017	P959829		2.6 ± 2.0	11.4 ± 1.8
REC_WATER	03-OCT-2017	P973183		2.5 ± 1.5	1.8 ± 1.0
AVERAGE				4.1 ± 2.0	8.5 ± 1.5

Units in picocuries/liter (pCi/L)

SOUTH BAY WATER RECLAMATION PLANT
Chlorinated Pesticide Analysis, EPA Method 608 (with additions)

Annual 2017

Source:			INFLUENT	INFLUENT	INFLUENT	INFLUENT^
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919279	P936651	P959798	P973142
Aldrin	5	NG/L	ND	ND	ND	ND*
BHC, Alpha isomer	10	NG/L	ND	ND	ND	ND*
BHC, Beta isomer	25	NG/L	ND	ND	ND	ND
BHC, Delta isomer	5	NG/L	ND	ND	ND	ND*
BHC, Gamma isomer	100	NG/L	ND	ND	ND	ND
Alpha (cis) Chlordane	5	NG/L	ND	ND	ND	ND
Gamma (trans) Chlordane	5	NG/L	ND	ND	ND	ND
Alpha Chlordene		NG/L	NA	NA	NA	NA*
Gamma Chlordene		NG/L	NA	NA	NA	NA*
Cis Nonachlor	5	NG/L	ND	ND	ND	ND
Dieldrin	10	NG/L	ND	ND	ND	ND*
Endosulfan Sulfate	44	NG/L	ND	ND	ND	ND*
Alpha Endosulfan	11	NG/L	ND	ND	ND	ND*
Beta Endosulfan	2.69	NG/L	ND	ND	ND	ND*
Endrin	50	NG/L	ND	ND	ND	ND
Endrin aldehyde	50	NG/L	ND	ND	ND	ND
Heptachlor	50	NG/L	ND	ND	ND	ND
Heptachlor epoxide	50	NG/L	ND	ND	ND	ND
Methoxychlor	460	NG/L	ND	ND	ND	NA
Mirex	5	NG/L	ND	ND	ND	ND
o,p-DDD	10	NG/L	ND	ND	ND	ND
o,p-DDE	20	NG/L	ND	ND	ND	ND
o,p-DDT	5	NG/L	ND	ND	ND	ND
Oxychlordane	1.21	NG/L	ND	ND	ND	NA
PCB 1016	2500	NG/L	ND	ND	ND	ND
PCB 1221	2500	NG/L	ND	ND	ND	ND
PCB 1232	2100	NG/L	ND	ND	ND	ND
PCB 1242	2000	NG/L	ND	ND	ND	ND
PCB 1248	1400	NG/L	ND	ND	ND	ND
PCB 1254	2500	NG/L	ND	ND	ND	ND
PCB 1260	2500	NG/L	ND	ND	ND	ND
PCB 1262	500	NG/L	ND	ND	ND	NA
p,p-DDD	.69	NG/L	ND	ND	ND	ND*
p,p-DDE	.97	NG/L	ND	ND	ND	ND*
p,p-DDT	50	NG/L	ND	ND	ND	ND
Toxaphene	2500	NG/L	ND	ND	ND	ND
Trans Nonachlor	5	NG/L	ND	ND	ND	ND
Heptachlors	50	NG/L	0.00	0.00	0.00	0.00
Endosulfans	44	NG/L	0.00	0.00	0.00	0.00*
Polychlorinated biphenyls	2500	NG/L	0.00	0.00	0.00	0.00
Chlordane + related cmpds.	5	NG/L	0.00	0.00	0.00	0.00
DDT and derivatives	50	NG/L	0.00	0.00	0.00	0.00
Hexachlorocyclohexanes	100	NG/L	0.00	0.00	0.00	0.00
Aldrin + Dieldrin	10	NG/L	0.00	0.00	0.00	0.00*
Chlorinated Hydrocarbons	2500	NG/L	0.00	0.00	0.00	0.00

*= One or more quality control criteria not met; value not used in average calculations.

ND=not detected; NA=not analyzed

Standards for alpha and gamma chlordene are no longer available in the U.S. for the analysis of these compounds.

^= Analyzed by: BABCOCK Laboratories, Inc.

SOUTH BAY WATER RECLAMATION PLANT
Chlorinated Pesticide Analysis, EPA Method 608 (with additions)

Annual 2017

Source:			EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT^
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919284	P936656	P959803	P973147
Aldrin	5	NG/L	ND	ND	ND	ND
BHC, Alpha isomer	10	NG/L	ND	ND	ND	ND
BHC, Beta isomer	25	NG/L	ND	ND	ND	ND
BHC, Delta isomer	5	NG/L	ND	ND	ND	ND
BHC, Gamma isomer	100	NG/L	ND	ND	ND	ND
Alpha (cis) Chlordane	5	NG/L	ND	ND	ND	ND
Gamma (trans) Chlordane	5	NG/L	ND	ND	ND	ND
Alpha Chlordene		NG/L	NA	NA	NA	NA
Gamma Chlordene		NG/L	NA	NA	NA	NA
Cis Nonachlor	5	NG/L	ND	ND	ND	ND
Dieldrin	10	NG/L	ND	ND	ND	ND
Endosulfan Sulfate	44	NG/L	ND	ND	ND	ND
Alpha Endosulfan	11	NG/L	ND	ND	ND	ND
Beta Endosulfan	2.69	NG/L	ND	ND	ND	ND*
Endrin	50	NG/L	ND	ND	ND	ND
Endrin aldehyde	50	NG/L	ND	ND	ND	ND
Heptachlor	50	NG/L	ND	ND	ND	ND
Heptachlor epoxide	50	NG/L	ND	ND	ND	ND
Methoxychlor	460	NG/L	ND	ND	ND	NA
Mirex	5	NG/L	ND	ND	ND	ND
o,p-DDD	10	NG/L	ND	ND	ND	ND
o,p-DDE	20	NG/L	ND	ND	ND	ND
o,p-DDT	5	NG/L	ND	ND	ND	ND
Oxychlordane	1.21	NG/L	ND	ND	ND	NA
PCB 1016	2500	NG/L	ND	ND	ND	ND
PCB 1221	2500	NG/L	ND	ND	ND	ND
PCB 1232	2100	NG/L	ND	ND	ND	ND
PCB 1242	2000	NG/L	ND	ND	ND	ND
PCB 1248	1400	NG/L	ND	ND	ND	ND
PCB 1254	2500	NG/L	ND	ND	ND	ND
PCB 1260	2500	NG/L	ND	ND	ND	ND
PCB 1262	500	NG/L	ND	ND	ND	NA
p,p-DDD	.69	NG/L	ND	ND	ND	ND*
p,p-DDE	.97	NG/L	ND	ND	ND	ND*
p,p-DDT	50	NG/L	ND	ND	ND	ND
Toxaphene	2500	NG/L	ND	ND	ND	ND
Trans Nonachlor	5	NG/L	ND	ND	ND	ND
Heptachlors	50	NG/L	0.00	0.00	0.00	0.00
Endosulfans	44	NG/L	0.00	0.00	0.00	0.00
Polychlorinated biphenyls	2500	NG/L	0.00	0.00	0.00	0.00
Chlordane + related cmpds.	5	NG/L	0.00	0.00	0.00	0.00
DDT and derivatives	50	NG/L	0.00	0.00	0.00	0.00
Hexachlorocyclohexanes	100	NG/L	0.00	0.00	0.00	0.00
Aldrin + Dieldrin	10	NG/L	0.00	0.00	0.00	0.00
Chlorinated Hydrocarbons	2500	NG/L	0.00	0.00	0.00	0.00

*= One or more quality control criteria not met; value not used in average calculations.

ND=not detected; NA=not analyzed

Standards for alpha and gamma chlordene are no longer available in the U.S. for the analysis of these compounds.

^= Analyzed by: BABCOCK Laboratories, Inc.

SOUTH BAY WATER RECLAMATION PLANT
Chlorinated Pesticide Analysis, EPA Method 608 (with additions)

Annual 2017

Source:			PRI EFF	PRI EFF	PRI EFF	PRI EFF^
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919294	P936666	P959808	P973152
Aldrin	5	NG/L	ND	ND	ND	ND*
BHC, Alpha isomer	10	NG/L	ND	ND	ND	ND*
BHC, Beta isomer	25	NG/L	ND	ND	ND	ND
BHC, Delta isomer	5	NG/L	ND	ND	ND	ND*
BHC, Gamma isomer	100	NG/L	ND	ND	ND	ND
Alpha (cis) Chlordane	5	NG/L	ND	ND	ND	ND
Gamma (trans) Chlordane	5	NG/L	ND	ND	ND	ND
Alpha Chlordene		NG/L	NA	NA	NA	NA
Gamma Chlordene		NG/L	NA	NA	NA	NA
Cis Nonachlor	5	NG/L	ND	ND	ND	ND
Dieldrin	10	NG/L	ND	ND	ND	ND*
Endosulfan Sulfate	44	NG/L	ND	ND	ND	ND*
Alpha Endosulfan	11	NG/L	ND	ND	ND	ND*
Beta Endosulfan	2.69	NG/L	ND	ND	ND	ND*
Endrin	50	NG/L	ND	ND	ND	ND
Endrin aldehyde	50	NG/L	ND	ND	ND	ND
Heptachlor	50	NG/L	ND	ND	ND	ND
Heptachlor epoxide	50	NG/L	ND	ND	ND	ND
Methoxychlor	460	NG/L	ND	ND	ND	NA
Mirex	5	NG/L	ND	ND	ND	ND
o,p-DDD	10	NG/L	ND	ND	ND	ND
o,p-DDE	20	NG/L	ND	ND	ND	ND
o,p-DDT	5	NG/L	ND	ND	ND	ND
Oxychlordane	1.21	NG/L	ND	ND	ND	NA
PCB 1016	2500	NG/L	ND	ND	ND	ND
PCB 1221	2500	NG/L	ND	ND	ND	ND
PCB 1232	2100	NG/L	ND	ND	ND	ND
PCB 1242	2000	NG/L	ND	ND	ND	ND
PCB 1248	1400	NG/L	ND	ND	ND	ND
PCB 1254	2500	NG/L	ND	ND	ND	ND
PCB 1260	2500	NG/L	ND	ND	ND	ND
PCB 1262	500	NG/L	ND	ND	ND	NA
p,p-DDD	.69	NG/L	ND	ND	ND	ND*
p,p-DDE	.97	NG/L	ND	ND	ND	ND*
p,p-DDT	50	NG/L	ND	ND	ND	ND
Toxaphene	2500	NG/L	ND	ND	ND	ND
Trans Nonachlor	5	NG/L	ND	ND	ND	ND
Heptachlors	50	NG/L	0.00	0.00	0.00	0.00
Endosulfans	44	NG/L	0.00	0.00	0.00	0.00*
Polychlorinated biphenyls	2500	NG/L	0.00	0.00	0.00	0.00
Chlordane + related cmpds.	5	NG/L	0.00	0.00	0.00	0.00
DDT and derivatives	50	NG/L	0.00	0.00	0.00	0.00
Hexachlorocyclohexanes	100	NG/L	0.00	0.00	0.00	0.00
Aldrin + Dieldrin	10	NG/L	0.00	0.00	0.00	0.00*
Chlorinated Hydrocarbons	2500	NG/L	0.00	0.00	0.00	0.00

*= One or more quality control criteria not met; value not used in average calculations.

ND=not detected; NA=not analyzed

Standards for alpha and gamma chlordene are no longer available in the U.S. for the analysis of these compounds.

^= Analyzed by: BABCOCK Laboratories, Inc.

SOUTH BAY WATER RECLAMATION PLANT
Chlorinated Pesticide Analysis, EPA Method 608 (with additions)

Annual 2017

Source:			SEC EFF	SEC EFF	SEC EFF	SEC EFF^
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919299	P936671	P959813	P973157
Aldrin	5	NG/L	ND	ND	ND	ND
BHC, Alpha isomer	10	NG/L	ND	ND	ND	ND
BHC, Beta isomer	25	NG/L	ND	ND	ND	ND
BHC, Delta isomer	5	NG/L	ND	ND	ND	ND
BHC, Gamma isomer	100	NG/L	ND	ND	ND	ND
Alpha (cis) Chlordane	5	NG/L	ND	ND	ND	ND
Gamma (trans) Chlordane	5	NG/L	ND	ND	ND	ND
Alpha Chlordene		NG/L	NA	NA	NA	NA
Gamma Chlordene		NG/L	NA	NA	NA	NA
Cis Nonachlor	5	NG/L	ND	ND	ND	ND
Dieldrin	10	NG/L	ND	ND	ND	ND
Endosulfan Sulfate	44	NG/L	ND	ND	ND	ND
Alpha Endosulfan	11	NG/L	ND	ND	ND	ND
Beta Endosulfan	2.69	NG/L	ND	ND	ND	ND*
Endrin	50	NG/L	ND	ND	ND	ND*
Endrin aldehyde	50	NG/L	ND	ND	ND	ND
Heptachlor	50	NG/L	ND	ND	ND	ND
Heptachlor epoxide	50	NG/L	ND	ND	ND	ND
Methoxychlor	460	NG/L	ND	ND	ND	NA
Mirex	5	NG/L	ND	ND	ND	ND
o,p-DDD	10	NG/L	ND	ND	ND	ND
o,p-DDE	20	NG/L	ND	ND	ND	ND
o,p-DDT	5	NG/L	ND	ND	ND	ND
Oxychlordane	1.21	NG/L	ND	ND	ND	NA
PCB 1016	2500	NG/L	ND	ND	ND	ND
PCB 1221	2500	NG/L	ND	ND	ND	ND
PCB 1232	2100	NG/L	ND	ND	ND	ND
PCB 1242	2000	NG/L	ND	ND	ND	ND
PCB 1248	1400	NG/L	ND	ND	ND	ND
PCB 1254	2500	NG/L	ND	ND	ND	ND
PCB 1260	2500	NG/L	ND	ND	ND	ND
PCB 1262	500	NG/L	ND	ND	ND	NA
p,p-DDD	.69	NG/L	ND	ND	ND	ND*
p,p-DDE	.97	NG/L	ND	ND	ND	ND*
p,p-DDT	50	NG/L	ND	ND	ND	ND
Toxaphene	2500	NG/L	ND	ND	ND	ND
Trans Nonachlor	5	NG/L	ND	ND	ND	ND
Heptachlors	50	NG/L	0.00	0.00	0.00	0.00
Endosulfans	44	NG/L	0.00	0.00	0.00	0.00
Polychlorinated biphenyls	2500	NG/L	0.00	0.00	0.00	0.00
Chlordane + related cmpds.	5	NG/L	0.00	0.00	0.00	0.00
DDT and derivatives	50	NG/L	0.00	0.00	0.00	0.00
Hexachlorocyclohexanes	100	NG/L	0.00	0.00	0.00	0.00
Aldrin + Dieldrin	10	NG/L	0.00	0.00	0.00	0.00
Chlorinated Hydrocarbons	2500	NG/L	0.00	0.00	0.00	0.00

*= One or more quality control criteria not met; value not used in average calculations.

ND=not detected; NA=not analyzed

Standards for alpha and gamma chlordene are no longer available in the U.S. for the analysis of these compounds.

^= Analyzed by: BABCOCK Laboratories, Inc.

SOUTH BAY WATER RECLAMATION PLANT
Chlorinated Pesticide Analysis, EPA Method 608 (with additions)

Annual 2017

Source:			RSL	RSL	RSL	RSL^
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919313	P936683	P959827	P973169
Aldrin	250	NG/L	ND	ND	ND	ND*
BHC, Alpha isomer	500	NG/L	ND	ND	ND	ND*
BHC, Beta isomer	250	NG/L	ND	ND	ND	ND*
BHC, Delta isomer	250	NG/L	ND	ND	ND	ND*
BHC, Gamma isomer	1000	NG/L	ND	ND	ND	ND*
Alpha (cis) Chlordane	50	NG/L	ND	ND	ND	ND*
Gamma (trans) Chlordane	50	NG/L	ND	ND	ND	ND*
Alpha Chlordene		NG/L	NA	NA	NA	NA
Gamma Chlordene		NG/L	NA	NA	NA	NA
Cis Nonachlor	50	NG/L	ND	ND	ND	ND*
Dieldrin	500	NG/L	ND	ND	ND	ND*
Endosulfan Sulfate	2200	NG/L	ND	ND	ND	ND*
Alpha Endosulfan	530	NG/L	ND	ND	ND	ND*
Beta Endosulfan	500	NG/L	ND	ND	ND	ND*
Endrin	500	NG/L	ND	ND	ND	ND*
Endrin aldehyde	500	NG/L	ND	ND	ND	ND*
Heptachlor	500	NG/L	ND	ND	ND	ND*
Heptachlor epoxide	500	NG/L	ND	ND	ND	ND*
Methoxychlor	460	NG/L	ND	ND	ND	NA
Mirex	50	NG/L	ND	ND	ND	ND*
o,p-DDD	100	NG/L	ND	ND	ND	ND*
o,p-DDE	200	NG/L	ND	ND	ND	ND*
o,p-DDT	50	NG/L	ND	ND	ND	ND*
Oxychlordane	1.21	NG/L	ND	ND	ND	NA
PCB 1016	25000	NG/L	ND	ND	ND	ND*
PCB 1221	25000	NG/L	ND	ND	ND	ND*
PCB 1232	21000	NG/L	ND	ND	ND	ND*
PCB 1242	20000	NG/L	ND	ND	ND	ND*
PCB 1248	14000	NG/L	ND	ND	ND	ND*
PCB 1254	25000	NG/L	ND	ND	ND	ND*
PCB 1260	25000	NG/L	ND	ND	ND	ND*
PCB 1262	500	NG/L	ND	ND	ND	NA
p,p-DDD	800	NG/L	ND	ND	ND	ND*
p,p-DDE	510	NG/L	ND	ND	ND	ND*
p,p-DDT	500	NG/L	ND	ND	ND	ND*
Toxaphene	25000	NG/L	ND	ND	ND	ND*
Trans Nonachlor	50	NG/L	ND	ND	ND	ND*
Heptachlors	500	NG/L	0.00	0.00	0.00	0.00
Endosulfans	2200	NG/L	0.00	0.00	0.00	0.00
Polychlorinated biphenyls	25000	NG/L	0.00	0.00	0.00	0.00
Chlordane + related cmpds.	50	NG/L	0.00	0.00	0.00	0.00
DDT and derivatives	800	NG/L	0.00	0.00	0.00	0.00
Hexachlorocyclohexanes	1000	NG/L	0.00	0.00	0.00	0.00
Aldrin + Dieldrin	500	NG/L	0.00	0.00	0.00	0.00
Chlorinated Hydrocarbons	25000	NG/L	0.00	0.00	0.00	0.00

*= One or more quality control criteria not met; value not used in average calculations.

ND=not detected; NA=not analyzed

Standards for alpha and gamma chlordene are no longer available in the U.S. for the analysis of these compounds.

^= Analyzed by: BABCOCK Laboratories, Inc.

SOUTH BAY WATER RECLAMATION PLANT
Chlorinated Pesticide Analysis, EPA Method 608 (with additions)

Annual 2017

Source:			REC WATER	REC WATER	REC WATER	REC WATER^
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919315	P936685	P959829	P973183
Aldrin	5	NG/L	ND	ND	ND	ND
BHC, Alpha isomer	10	NG/L	ND	ND	ND	ND
BHC, Beta isomer	25	NG/L	ND	ND	ND	ND
BHC, Delta isomer	5	NG/L	ND	ND	ND	ND
BHC, Gamma isomer	100	NG/L	ND	ND	ND	ND
Alpha (cis) Chlordane	5	NG/L	ND	ND	ND	ND
Gamma (trans) Chlordane	5	NG/L	ND	ND	ND	ND
Alpha Chlordene		NG/L	NA	NA	NA	NA
Gamma Chlordene		NG/L	NA	NA	NA	NA
Cis Nonachlor	5	NG/L	ND	ND	ND	ND
Dieldrin	10	NG/L	ND	ND	ND	ND
Endosulfan Sulfate	44	NG/L	ND	ND	ND	ND
Alpha Endosulfan	11	NG/L	ND	ND	ND	ND
Beta Endosulfan	2.69	NG/L	ND	ND	ND	ND*
Endrin	50	NG/L	ND	ND	ND	ND*
Endrin aldehyde	50	NG/L	ND	ND	ND	ND
Heptachlor	50	NG/L	ND	ND	ND	ND
Heptachlor epoxide	50	NG/L	ND	ND	ND	ND
Methoxychlor	460	NG/L	ND	ND	ND	NA
Mirex	5	NG/L	ND	ND	ND	ND
o,p-DDD	10	NG/L	ND	ND	ND	ND
o,p-DDE	20	NG/L	ND	ND	ND	ND
o,p-DDT	5	NG/L	ND	ND	ND	ND
Oxychlordane	1.21	NG/L	ND	ND	ND	NA
PCB 1016	2500	NG/L	ND	ND	ND	ND
PCB 1221	2500	NG/L	ND	ND	ND	ND
PCB 1232	2100	NG/L	ND	ND	ND	ND
PCB 1242	2000	NG/L	ND	ND	ND	ND
PCB 1248	1400	NG/L	ND	ND	ND	ND
PCB 1254	2500	NG/L	ND	ND	ND	ND
PCB 1260	2500	NG/L	ND	ND	ND	ND
PCB 1262	500	NG/L	ND	ND	ND	NA
p,p-DDD	.69	NG/L	ND	ND	ND	ND*
p,p-DDE	.97	NG/L	ND	ND	ND	ND*
p,p-DDT	50	NG/L	ND	ND	ND	ND
Toxaphene	2500	NG/L	ND	ND	ND	ND
Trans Nonachlor	5	NG/L	ND	ND	ND	ND
Heptachlors	50	NG/L	0.00	0.00	0.00	0.00
Endosulfans	44	NG/L	0.00	0.00	0.00	0.00
Polychlorinated biphenyls	2500	NG/L	0.00	0.00	0.00	0.00
Chlordane + related cmpds.	5	NG/L	0.00	0.00	0.00	0.00
DDT and derivatives	50	NG/L	0.00	0.00	0.00	0.00
Hexachlorocyclohexanes	100	NG/L	0.00	0.00	0.00	0.00
Aldrin + Dieldrin	10	NG/L	0.00	0.00	0.00	0.00
Chlorinated Hydrocarbons	2500	NG/L	0.00	0.00	0.00	0.00

*= One or more quality control criteria not met; value not used in average calculations.

ND=not detected; NA=not analyzed

Standards for alpha and gamma chlordene are no longer available in the U.S. for the analysis of these compounds.

^= Analyzed by: BABCOCK Laboratories, Inc.

SOUTH BAY WATER RECLAMATION PLANT
Organophosphorus Pesticides by EPA Method 614/622 (with additions)

Annual 2017

Source:			INF	INF	EFF	EFF	PRI_EFF	PRI_EFF
Date:			02-MAY-2017	03-OCT-2017	02-MAY-2017	03-OCT-2017	02-MAY-2017	03-OCT-2017
Analyte	MDL	Units	P936651	P973142	P936656	P973147	P936666	P973152
Demeton O	.01	UG/L	ND	ND	ND	ND	ND	ND
Demeton S	.04	UG/L	ND	ND	ND	ND	ND	ND
Diazinon	.02	UG/L	ND	ND	ND	ND	ND	ND
Guthion	.03	UG/L	ND	ND	ND	ND	ND	ND
Malathion	.02	UG/L	DNQ0.07	ND	ND	ND	DNQ0.06	ND
Parathion	.01	UG/L	ND	ND	ND	ND	ND	ND
Dichlorvos	.02	UG/L	2.30	ND	ND	ND	1.81	ND
Disulfoton	.01	UG/L	ND	ND	ND	ND	ND	ND
Stirophos	.01	UG/L	ND	ND	ND	ND	ND	ND
Coumaphos	.05	UG/L	ND	ND	ND	ND	ND	ND
Chlorpyrifos	.02	UG/L	ND	ND	ND	ND	ND	ND
Thiophosphorus Pesticides	.03	UG/L	0.00	0.00	0.00	0.00	0.00	0.00
Demeton -O, -S	.04	UG/L	0.00	0.00	0.00	0.00	0.00	0.00
Total Organophosphorus Pesticides	.05	UG/L	2.30	0.00	0.00	0.00	1.81	0.00

Source:			SEC_EFF	SEC_EFF	RSL	RSL	REC_WATER	REC_WATER
Date:			02-MAY-2017	03-OCT-2017	02-MAY-2017	03-OCT-2017	02-MAY-2017	03-OCT-2017
Analyte	MDL	Units	P936671	P973157	P936683	P973169	P936685	P973183
Demeton O	.01	UG/L	ND	ND	ND	ND	ND	ND
Demeton S	.04	UG/L	ND	ND	ND	ND	ND	ND
Diazinon	.02	UG/L	ND	ND	ND	ND	ND	ND
Guthion	.03	UG/L	ND	ND	ND	ND	ND	ND
Malathion	.02	UG/L	ND	ND	ND	ND	ND	ND
Parathion	.01	UG/L	ND	ND	ND	ND	ND	ND
Dichlorvos	.02	UG/L	ND	ND	6.02	ND	ND	ND
Disulfoton	.01	UG/L	ND	ND	ND	ND	ND	ND
Stirophos	.01	UG/L	ND	ND	ND	ND	ND	ND
Coumaphos	.05	UG/L	ND	ND	ND	ND	ND	ND
Chlorpyrifos	.02	UG/L	ND	ND	ND	DNQ0.3	ND	ND
Thiophosphorus Pesticides	.03	UG/L	0.00	0.00	0.00	0.00	0.00	0.00
Demeton -O, -S	.04	UG/L	0.00	0.00	0.00	0.00	0.00	0.00
Total Organophosphorus Pesticides	.05	UG/L	0.00	0.00	6.02	0.00	0.00	0.00

ND=not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Base/Neutral Compounds, EPA Method 625

Annual 2017

Source:			INF	INF	INF	INF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919279	P936651	P959798	P973142
Acenaphthene	1.8	UG/L	ND	ND	ND	ND
Acenaphthylene	1.77	UG/L	ND	ND	ND	ND
Anthracene	1.29	UG/L	ND	ND	ND	ND
Benzidine	1.52	UG/L	ND	ND*	ND	ND
Benzo[a]anthracene	1.1	UG/L	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35	UG/L	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49	UG/L	ND	ND	ND	ND
Benzo[a]pyrene	1.25	UG/L	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09	UG/L	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4	UG/L	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01	UG/L	ND	ND	ND	ND
Bis-(2-chloroethyl) ether	1.38	UG/L	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16	UG/L	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57	UG/L	ND	ND	ND	ND
2-Chloronaphthalene	1.87	UG/L	ND	ND	ND	ND
Chrysene	1.16	UG/L	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01	UG/L	ND	ND	ND	ND
Butyl benzyl phthalate	2.84	UG/L	ND	ND	ND	ND
Di-n-butyl phthalate	3.96	UG/L	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96	UG/L	16.3	ND	9.3	13.9
Diethyl phthalate	3.05	UG/L	5.0	3.7	ND	6.3
Dimethyl phthalate	1.44	UG/L	ND	ND	ND	ND
Di-n-octyl phthalate	1	UG/L	ND	2.4	ND	ND
3,3-Dichlorobenzidine	2.44	UG/L	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36	UG/L	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53	UG/L	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37	UG/L	ND	ND	ND	ND
Fluoranthene	1.33	UG/L	ND	ND	ND	ND
Fluorene	1.61	UG/L	ND	ND	ND	ND
Hexachlorobenzene	1.48	UG/L	ND	ND	ND	ND
Hexachlorobutadiene	1.64	UG/L	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25	UG/L	ND	ND	ND	ND
Hexachloroethane	1.32	UG/L	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14	UG/L	ND	ND	ND	ND
Isophorone	1.53	UG/L	ND	ND	ND	ND
Naphthalene	1.65	UG/L	ND	ND	ND	ND
Nitrobenzene	1.6	UG/L	ND	ND	ND	ND
N-nitrosodimethylamine	1.27	UG/L	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16	UG/L	ND	ND	ND	ND
N-nitrosodiphenylamine	3.48	UG/L	ND	ND	ND	ND
Phenanthrene	1.34	UG/L	ND	ND	ND	ND
Pyrene	1.43	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52	UG/L	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77	UG/L	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96	UG/L	21.3	6.1	9.3	20.2

Additional analytes determined

Benzo[e]pyrene	1.44	UG/L	ND	ND	ND	ND
Biphenyl	2.29	UG/L	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16	UG/L	ND	ND	ND	ND
1-Methylnaphthalene	2.18	UG/L	ND	ND	ND	ND
1-Methylphenanthrene	1.46	UG/L	ND	ND	ND	ND
2-Methylnaphthalene	2.14	UG/L	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18	UG/L	ND	ND	ND	ND
Perylene	1.41	UG/L	ND	ND	ND	ND
Pyridine	3.33	UG/L	ND	ND	ND	ND

*= Recovery of compound in internal check and matrix spike sample outside method acceptance limits; value is not used in average calculations.

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Base/Neutral Compounds, EPA Method 625

Annual 2017

Source:			EFF	EFF	EFF	EFF
Date:			04-JAN-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P914909	P936656	P959803	P973147
Acenaphthene	1.8	UG/L	ND	ND	ND	ND
Acenaphthylene	1.77	UG/L	ND	ND	ND	ND
Anthracene	1.29	UG/L	ND	ND	ND	ND
Benzidine	1.52	UG/L	ND*	ND*	ND	ND
Benzo[a]anthracene	1.1	UG/L	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35	UG/L	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49	UG/L	ND	ND	ND	ND
Benzo[a]pyrene	1.25	UG/L	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09	UG/L	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4	UG/L	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01	UG/L	ND	ND	ND	ND
Bis-(2-chloroethyl) ether	1.38	UG/L	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16	UG/L	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57	UG/L	ND	ND	ND	ND
2-Chloronaphthalene	1.87	UG/L	ND	ND	ND	ND
Chrysene	1.16	UG/L	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01	UG/L	ND	ND	ND	ND
Butyl benzyl phthalate	2.84	UG/L	ND	ND	ND	ND
Di-n-butyl phthalate	3.96	UG/L	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96	UG/L	9.9	ND	ND	<8.96
Diethyl phthalate	3.05	UG/L	ND	ND	ND	ND
Dimethyl phthalate	1.44	UG/L	ND	ND	ND	ND
Di-n-octyl phthalate	1	UG/L	ND	ND	ND	ND
3,3-Dichlorobenzidine	2.44	UG/L	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36	UG/L	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53	UG/L	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37	UG/L	ND	ND	ND	ND
Fluoranthene	1.33	UG/L	ND	ND	ND	ND
Fluorene	1.61	UG/L	ND	ND	ND	ND
Hexachlorobenzene	1.48	UG/L	ND	ND	ND	ND
Hexachlorobutadiene	1.64	UG/L	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25	UG/L	ND	ND	ND	ND
Hexachloroethane	1.32	UG/L	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14	UG/L	ND	ND	ND	ND
Isophorone	1.53	UG/L	ND	ND	ND	ND
Naphthalene	1.65	UG/L	ND	ND	ND	ND
Nitrobenzene	1.6	UG/L	ND	ND	ND	ND
N-nitrosodimethylamine	1.27	UG/L	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16	UG/L	ND	ND	ND	ND
N-nitrosodiphenylamine	3.48	UG/L	ND	ND	ND	ND
Phenanthrene	1.34	UG/L	ND	ND	ND	ND
Pyrene	1.43	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52	UG/L	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77	UG/L	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96	UG/L	9.9	0.0	0.0	0.0

Additional analytes determined

Benzo[e]pyrene	1.44	UG/L	ND	ND	ND	ND
Biphenyl	2.29	UG/L	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16	UG/L	ND	ND	ND	ND
1-Methylnaphthalene	2.18	UG/L	ND	ND	ND	ND
1-Methylphenanthrene	1.46	UG/L	ND	ND	ND	ND
2-Methylnaphthalene	2.14	UG/L	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18	UG/L	ND	ND	ND	ND
Perylene	1.41	UG/L	ND	ND	ND	ND
Pyridine	3.33	UG/L	ND	ND	ND	ND

*= Recovery of compound in internal check and matrix spike sample outside method acceptance limits; value is not used in average calculations.

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Base/Neutral Compounds, EPA Method 625

Annual 2017

Source:			PRI_EFF	PRI_EFF	PRI_EFF	PRI_EFF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919294	P936666	P959808	P973152
Acenaphthene	1.8	UG/L	ND	ND	ND	ND
Acenaphthylene	1.77	UG/L	ND	ND	ND	ND
Anthracene	1.29	UG/L	ND	ND	ND	ND
Benzidine	1.52	UG/L	ND	ND*	ND	ND
Benzo[a]anthracene	1.1	UG/L	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35	UG/L	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49	UG/L	ND	ND	ND	ND
Benzo[a]pyrene	1.25	UG/L	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09	UG/L	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4	UG/L	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01	UG/L	ND	ND	ND	ND
Bis-(2-chloroethyl) ether	1.38	UG/L	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16	UG/L	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57	UG/L	ND	ND	ND	ND
2-Chloronaphthalene	1.87	UG/L	ND	ND	ND	ND
Chrysene	1.16	UG/L	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01	UG/L	ND	ND	ND	ND
Butyl benzyl phthalate	2.84	UG/L	ND	ND	ND	ND
Di-n-butyl phthalate	3.96	UG/L	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96	UG/L	20.9	ND	ND	ND
Diethyl phthalate	3.05	UG/L	5.6	ND	ND	6.3
Dimethyl phthalate	1.44	UG/L	ND	ND	ND	ND
Di-n-octyl phthalate	1	UG/L	ND	ND	ND	ND
3,3-Dichlorobenzidine	2.44	UG/L	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36	UG/L	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53	UG/L	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37	UG/L	ND	ND	ND	ND
Fluoranthene	1.33	UG/L	ND	ND	ND	ND
Fluorene	1.61	UG/L	ND	ND	ND	ND
Hexachlorobenzene	1.48	UG/L	ND	ND	ND	ND
Hexachlorobutadiene	1.64	UG/L	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25	UG/L	ND	ND	ND	ND
Hexachloroethane	1.32	UG/L	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14	UG/L	ND	ND	ND	ND
Isophorone	1.53	UG/L	ND	ND	ND	ND
Naphthalene	1.65	UG/L	ND	ND	ND	ND
Nitrobenzene	1.6	UG/L	ND	ND	ND	ND
N-nitrosodimethylamine	1.27	UG/L	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16	UG/L	ND	ND	ND	ND
N-nitrosodiphenylamine	3.48	UG/L	ND	ND	ND	ND
Phenanthrene	1.34	UG/L	ND	ND	ND	ND
Pyrene	1.43	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52	UG/L	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77	UG/L	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96	UG/L	26.5	0.0	0.0	6.3
Additional analytes determined						
Benzo[e]pyrene	1.44	UG/L	ND	ND	ND	ND
Biphenyl	2.29	UG/L	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16	UG/L	ND	ND	ND	ND
1-Methylnaphthalene	2.18	UG/L	ND	ND	ND	ND
1-Methylphenanthrene	1.46	UG/L	ND	ND	ND	ND
2-Methylnaphthalene	2.14	UG/L	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18	UG/L	ND	ND	ND	ND
Perylene	1.41	UG/L	ND	ND	ND	ND
Pyridine	3.33	UG/L	ND	ND	ND	ND

*= Recovery of compound in internal check and matrix spike sample outside method acceptance limits; value is not used in average calculations.

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Base/Neutral Compounds, EPA Method 625

Annual 2017

Source:			SEC_EFF	SEC_EFF	SEC_EFF	SEC_EFF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919299	P936671	P959813	P973157
Acenaphthene	1.8	UG/L	ND	ND	ND	ND
Acenaphthylene	1.77	UG/L	ND	ND	ND	ND
Anthracene	1.29	UG/L	ND	ND	ND	ND
Benzidine	1.52	UG/L	ND	ND*	ND	ND
Benzo[a]anthracene	1.1	UG/L	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35	UG/L	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49	UG/L	ND	ND	ND	ND
Benzo[a]pyrene	1.25	UG/L	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09	UG/L	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4	UG/L	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01	UG/L	ND	ND	ND	ND
Bis-(2-chloroethyl) ether	1.38	UG/L	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16	UG/L	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57	UG/L	ND	ND	ND	ND
2-Chloronaphthalene	1.87	UG/L	ND	ND	ND	ND
Chrysene	1.16	UG/L	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01	UG/L	ND	ND	ND	ND
Butyl benzyl phthalate	2.84	UG/L	ND	ND	ND	ND
Di-n-butyl phthalate	3.96	UG/L	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96	UG/L	12.3	ND	ND	ND
Diethyl phthalate	3.05	UG/L	ND	ND	ND	ND
Dimethyl phthalate	1.44	UG/L	ND	ND	ND	ND
Di-n-octyl phthalate	1	UG/L	ND	ND	ND	ND
3,3-Dichlorobenzidine	2.44	UG/L	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36	UG/L	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53	UG/L	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37	UG/L	ND	ND	ND	ND
Fluoranthene	1.33	UG/L	ND	ND	ND	ND
Fluorene	1.61	UG/L	ND	ND	ND	ND
Hexachlorobenzene	1.48	UG/L	ND	ND	ND	ND
Hexachlorobutadiene	1.64	UG/L	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25	UG/L	ND	ND	ND	ND
Hexachloroethane	1.32	UG/L	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14	UG/L	ND	ND	ND	ND
Isophorone	1.53	UG/L	ND	ND	ND	ND
Naphthalene	1.65	UG/L	ND	ND	ND	ND
Nitrobenzene	1.6	UG/L	ND	ND	ND	ND
N-nitrosodimethylamine	1.27	UG/L	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16	UG/L	ND	ND	ND	ND
N-nitrosodiphenylamine	3.48	UG/L	ND	ND	ND	ND
Phenanthrene	1.34	UG/L	ND	ND	ND	ND
Pyrene	1.43	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52	UG/L	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77	UG/L	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96	UG/L	12.3	0.0	0.0	0.0
Additional analytes determined						
Benzo[e]pyrene	1.44	UG/L	ND	ND	ND	ND
Biphenyl	2.29	UG/L	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16	UG/L	ND	ND	ND	ND
1-Methylnaphthalene	2.18	UG/L	ND	ND	ND	ND
1-Methylphenanthrene	1.46	UG/L	ND	ND	ND	ND
2-Methylnaphthalene	2.14	UG/L	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18	UG/L	ND	ND	ND	ND
Perylene	1.41	UG/L	ND	ND	ND	ND
Pyridine	3.33	UG/L	ND	ND	ND	ND

*= Recovery of compound in internal check and matrix spike sample outside method acceptance limits; value is not used in average calculations.

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Base/Neutral Compounds, EPA Method 625

Annual 2017

Source:			REC_WATER	REC_WATER	REC_WATER	REC_WATER
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919315	P936685	P959829	P973183
Acenaphthene	1.8	UG/L	ND	ND	ND	ND
Acenaphthylene	1.77	UG/L	ND	ND	ND	ND
Anthracene	1.29	UG/L	ND	ND	ND	ND
Benzidine	1.52	UG/L	ND	ND*	ND	ND
Benzo[a]anthracene	1.1	UG/L	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35	UG/L	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49	UG/L	ND	ND	ND	ND
Benzo[a]pyrene	1.25	UG/L	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09	UG/L	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4	UG/L	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01	UG/L	ND	ND	ND	ND
Bis-(2-chloroethyl) ether	1.38	UG/L	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16	UG/L	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57	UG/L	ND	ND	ND	ND
2-Chloronaphthalene	1.87	UG/L	ND	ND	ND	ND
Chrysene	1.16	UG/L	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01	UG/L	ND	ND	ND	ND
Butyl benzyl phthalate	2.84	UG/L	ND	ND	ND	ND
Di-n-butyl phthalate	3.96	UG/L	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96	UG/L	ND	ND	54.8	ND
Diethyl phthalate	3.05	UG/L	ND	ND	ND	ND
Dimethyl phthalate	1.44	UG/L	ND	ND	ND	ND
Di-n-octyl phthalate	1	UG/L	ND	ND	ND	ND
3,3-Dichlorobenzidine	2.44	UG/L	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36	UG/L	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53	UG/L	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37	UG/L	ND	ND	ND	ND
Fluoranthene	1.33	UG/L	ND	ND	ND	ND
Fluorene	1.61	UG/L	ND	ND	ND	ND
Hexachlorobenzene	1.48	UG/L	ND	ND	ND	ND
Hexachlorobutadiene	1.64	UG/L	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25	UG/L	ND	ND	ND	ND
Hexachloroethane	1.32	UG/L	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14	UG/L	ND	ND	ND	ND
Isophorone	1.53	UG/L	ND	ND	ND	ND
Naphthalene	1.65	UG/L	ND	ND	ND	ND
Nitrobenzene	1.6	UG/L	ND	ND	ND	ND
N-nitrosodimethylamine	1.27	UG/L	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16	UG/L	ND	ND	ND	ND
N-nitrosodiphenylamine	3.48	UG/L	ND	ND	ND	ND
Phenanthrene	1.34	UG/L	ND	ND	ND	ND
Pyrene	1.43	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52	UG/L	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77	UG/L	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96	UG/L	0.0	0.0	54.8	0.0
Additional analytes determined						
Benzo[e]pyrene	1.44	UG/L	ND	ND	ND	ND
Biphenyl	2.29	UG/L	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16	UG/L	ND	ND	ND	ND
1-Methylnaphthalene	2.18	UG/L	ND	ND	ND	ND
1-Methylphenanthrene	1.46	UG/L	ND	ND	ND	ND
2-Methylnaphthalene	2.14	UG/L	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18	UG/L	ND	ND	ND	ND
Perylene	1.41	UG/L	ND	ND	ND	ND
Pyridine	3.33	UG/L	ND	ND	ND	ND

*= Recovery of compound in internal check and matrix spike sample outside method acceptance limits; value is not used in average calculations.

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
ACID EXTRACTABLE COMPOUNDS, EPA Method 625

Annual 2017

Source:			INF	INF	INF	INF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919279	P936651	P959798	P973142
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND
Phenol	1.76	UG/L	49.3	33.0	47.5	51.6
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	49.3	33.0	47.5	51.6
Total Phenols	2.16	UG/L	49.3	33.0	47.5	51.6
Additional analytes determined						
2-Methylphenol	2.15	UG/L	ND	ND	ND	ND
3-Methylphenol(4-MP is unresolved)		UG/L	NA	NA	NA	NA
4-Methylphenol(3-MP is unresolved)	2.11	UG/L	133	81.2	92.5	93.3
2,4,5-Trichlorophenol	1.66	UG/L	ND	ND	ND	ND

Source:			EFF	EFF	EFF	EFF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte:	MDL	Units	P919284	P936656	P959803	P973147
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND
Phenol	1.76	UG/L	ND	ND	ND	ND
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	0.0	0.0	0.0	0.0
Total Phenols	2.16	UG/L	0.0	0.0	0.0	0.0
Additional analytes determined						
2-Methylphenol	2.15	UG/L	ND	ND	ND	ND
3-Methylphenol(4-MP is unresolved)		UG/L	NA	NA	NA	NA
4-Methylphenol(3-MP is unresolved)	2.11	UG/L	ND	ND	ND	ND
2,4,5-Trichlorophenol	1.66	UG/L	ND	ND	ND	ND

ND= not detected; NA= not analyze

SOUTH BAY WATER RECLAMATION PLANT
ACID EXTRACTABLE COMPOUNDS, EPA Method 625

Annual 2017

Source:			PRI_EFF	PRI_EFF	PRI_EFF	PRI_EFF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919294	P936666	P959808	P973152
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND
Phenol	1.76	UG/L	24.9	19.3	19.5	24.9
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	24.9	19.3	19.5	24.9
Total Phenols	2.16	UG/L	24.9	19.3	19.5	24.9
Additional analytes determined						
2-Methylphenol	2.15	UG/L	ND	ND	ND	ND
3-Methylphenol(4-MP is unresolved)		UG/L	NA	NA	NA	NA
4-Methylphenol(3-MP is unresolved)	2.11	UG/L	56.2	33.0	21.5	32.1
2,4,5-Trichlorophenol	1.66	UG/L	ND	ND	ND	ND

Source:			SEC_EFF	SEC_EFF	SEC_EFF	SEC_EFF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919299	P936671	P959813	P973157
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND
Phenol	1.76	UG/L	ND	ND	ND	ND
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	0.0	0.0	0.0	0.0
Total Phenols	2.16	UG/L	0.0	0.0	0.0	0.0
Additional analytes determined						
2-Methylphenol	2.15	UG/L	ND	ND	ND	ND
3-Methylphenol(4-MP is unresolved)		UG/L	NA	NA	NA	NA
4-Methylphenol(3-MP is unresolved)	2.11	UG/L	ND	ND	ND	ND
2,4,5-Trichlorophenol	1.66	UG/L	ND	ND	ND	ND

ND= not detected; NA= not analyze

SOUTH BAY WATER RECLAMATION PLANT
ACID EXTRACTABLE COMPOUNDS, EPA Method 625

Annual 2017

Source:			RSL	RSL	RSL	RSL
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919313	P936683	P959827	P973169
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND
Phenol	1.76	UG/L	51.4	145	67.9	175
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	51.4	145	67.9	175
Total Phenols	2.16	UG/L	51.4	145	67.9	175
Additional analytes determined						
2-Methylphenol	2.15	UG/L	ND	ND	ND	ND
3-Methylphenol(4-MP is unresolved)		UG/L	NA	NA	NA	NA
4-Methylphenol(3-MP is unresolved)	2.11	UG/L	118	211	135	435
2,4,5-Trichlorophenol	1.66	UG/L	ND	ND	ND	ND

Source:			REC_WATER	REC_WATER	REC_WATER	REC_WATER
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919315	P936685	P959829	P973183
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND
Phenol	1.76	UG/L	ND	ND	ND	ND
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	0.0	0.0	0.0	0.0
Total Phenols	2.16	UG/L	0.0	0.0	0.0	0.0
Additional analytes determined						
2-Methylphenol	2.15	UG/L	ND	ND	ND	ND
3-Methylphenol(4-MP is unresolved)		UG/L	NA	NA	NA	NA
4-Methylphenol(3-MP is unresolved)	2.11	UG/L	ND	ND	ND	ND
2,4,5-Trichlorophenol	1.66	UG/L	ND	ND	ND	ND

ND= not detected; NA= not analyze

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2017

Source:			INF	INF	INF	INF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919282	P936654	P959801	P973145
Acrolein	.94	UG/L	ND	ND	ND	ND
Acrylonitrile	.48	UG/L	ND	ND	ND	ND
Benzene	.37	UG/L	ND	ND	ND	ND
Bromodichloromethane	.37	UG/L	ND	ND	ND	ND
Bromoform	.36	UG/L	ND	ND	ND	ND
Bromomethane	.22	UG/L	ND	ND	DNQ0.4*	DNQ0.3*
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Chloroethane	.24	UG/L	ND	ND	ND	ND
2-Chloroethylvinyl ether	.25	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	DNQ1.4	2.1	DNQ1.2	3.1
Chloromethane	.19	UG/L	ND	DNQ0.3	ND	ND
Dibromochloromethane	.34	UG/L	ND	ND	ND	ND
1,2-Dichlorobenzene	.36	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.47	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	ND	ND	ND
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.28	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.32	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.37	UG/L	ND	ND	ND	ND
trans-1,2-dichloroethene	.34	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.35	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	2.5	DNQ0.9	DNQ0.9	DNQ1.21*
1,1,2,2-Tetrachloroethane	.33	UG/L	ND	ND	ND	ND
Tetrachloroethene	.4	UG/L	ND	ND	ND	ND
Toluene	.37	UG/L	DNQ1.5	ND	DNQ0.5	DNQ1.0
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.32	UG/L	ND	ND	ND	ND
Trichloroethene	.43	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.26	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.51	UG/L	ND	ND	ND	ND
Vinyl chloride	.24	UG/L	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.36	UG/L	0.0	0.0	0.0	0.0
Total Dichlorobenzenes	.47	UG/L	0.0	0.0	0.0	0.0
Total Chloromethanes	.4	UG/L	2.5	2.1	0.0	3.1
Purgeable Compounds	2.39	UG/L	2.5	3.3	0.0	3.1
Additional Analytes Determined						
Acetone	6.74	UG/L	119	123	268	174
Allyl chloride	.44	UG/L	ND	ND	ND	ND
Benzyl chloride	.65	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	5.56	UG/L	ND	ND	ND	ND
Carbon disulfide	.37	UG/L	1.6	1.1	1.5	2.3
Chloroprene	.09	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Methyl Iodide	.32	UG/L	ND	ND	ND	ND
Methyl methacrylate	.32	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	.39	UG/L	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND
Methyl tert-butyl ether	.36	UG/L	ND	ND	DNQ0.5	DNQ0.7
2-Nitropropane	.49	UG/L	ND	ND	ND	ND
ortho-xylene	.34	UG/L	DNQ0.5	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND

*= Method blank value above the MDL; sample result not included in average calculations.

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2017

Source:			EFF	EFF	EFF	EFF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919287	P936659	P959806	P973150
Acrolein	.94	UG/L	ND	ND	ND	ND
Acrylonitrile	.48	UG/L	ND	ND	ND	ND
Benzene	.37	UG/L	ND	ND	ND	ND
Bromodichloromethane	.37	UG/L	ND	ND	ND	ND
Bromoform	.36	UG/L	ND	ND	ND	ND
Bromomethane	.22	UG/L	NQ0.27*	ND	DNQ0.44*	NQ0.37*
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Chloroethane	.24	UG/L	ND	ND	ND	ND
2-Chloroethylvinyl ether	.25	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	DNQ0.7	DNQ0.9	DNQ0.5	DNQ0.9
Chloromethane	.19	UG/L	ND	ND	ND	ND
Dibromochloromethane	.34	UG/L	ND	ND	ND	ND
1,2-Dichlorobenzene	.36	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.47	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	ND	ND	ND
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.28	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.32	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.37	UG/L	ND	ND	ND	ND
trans-1,2-dichloroethene	.34	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.35	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	DNQ0.6	DNQ0.4	ND	DNQ0.48*
1,1,2,2-Tetrachloroethane	.33	UG/L	ND	ND	ND	ND
Tetrachloroethene	.4	UG/L	ND	ND	ND	ND
Toluene	.37	UG/L	ND	ND	ND	ND
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.32	UG/L	ND	ND	ND	ND
Trichloroethene	.43	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.26	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.51	UG/L	ND	ND	ND	ND
Vinyl chloride	.24	UG/L	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.36	UG/L	0.0	0.0	0.0	0.0
Total Dichlorobenzenes	.47	UG/L	0.0	0.0	0.0	0.0
Total Chloromethanes	.4	UG/L	0.0	0.0	0.0	0.0
Purgeable Compounds	2.39	UG/L	0.0	0.0	0.0	0.0
Additional Analytes Determined						
Acetone	6.74	UG/L	ND	ND	ND	ND
Allyl chloride	.44	UG/L	ND	ND	ND	ND
Benzyl chloride	.65	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	5.56	UG/L	ND	ND	ND	ND
Carbon disulfide	.37	UG/L	ND	ND	ND	ND
Chloroprene	.09	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Methyl Iodide	.32	UG/L	ND	ND	ND	ND
Methyl methacrylate	.32	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	.39	UG/L	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND
Methyl tert-butyl ether	.36	UG/L	ND	ND	ND	ND
2-Nitropropane	.49	UG/L	ND	ND	ND	ND
ortho-xylene	.34	UG/L	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND

*= Method blank value above the MDL; sample result not included in average calculations.

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2017

Source:			PRI_EFF	PRI_EFF	PRI_EFF	PRI_EFF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919297	P936669	P959811	P973155
Acrolein	.94	UG/L	ND	ND	ND	ND
Acrylonitrile	.48	UG/L	ND	ND	ND	ND
Benzene	.37	UG/L	ND	ND	ND	ND
Bromodichloromethane	.37	UG/L	ND	ND	ND	ND
Bromoform	.36	UG/L	ND	ND	ND	ND
Bromomethane	.22	UG/L	DNQ0.31*	ND	DNQ0.45*	DNQ0.33*
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Chloroethane	.24	UG/L	ND	ND	ND	ND
2-Chloroethylvinyl ether	.25	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	2.2	2.3	DNQ0.9	2.0
Chloromethane	.19	UG/L	DNQ0.2	ND	ND	ND
Dibromochloromethane	.34	UG/L	ND	ND	ND	ND
1,2-Dichlorobenzene	.36	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.47	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	ND	ND	ND
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.28	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.32	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.37	UG/L	ND	ND	ND	ND
trans-1,2-dichloroethene	.34	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.35	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	DNQ3.81*	DNQ0.7	DNQ0.7	DNQ1.07*
1,1,2,2-Tetrachloroethane	.33	UG/L	ND	ND	ND	ND
Tetrachloroethene	.4	UG/L	ND	ND	ND	ND
Toluene	.37	UG/L	DNQ0.7	ND	ND	DNQ0.5
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.32	UG/L	ND	ND	ND	ND
Trichloroethene	.43	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.26	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.51	UG/L	ND	ND	ND	ND
Vinyl chloride	.24	UG/L	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.36	UG/L	0.0	0.0	0.0	0.0
Total Dichlorobenzenes	.47	UG/L	0.0	0.0	0.0	0.0
Total Chloromethanes	.4	UG/L	2.2	2.3	0.0	2.0
Purgeable Compounds	2.39	UG/L	2.2	2.3	0.0	2.0
Additional Analytes Determined						
Acetone	6.74	UG/L	197	209	187	278
Allyl chloride	.44	UG/L	ND	ND	ND	ND
Benzyl chloride	.65	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	5.56	UG/L	ND	ND	ND	ND
Carbon disulfide	.37	UG/L	1.2	1.6	1.2	2.6
Chloroprene	.09	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Methyl Iodide	.32	UG/L	ND	ND	ND	ND
Methyl methacrylate	.32	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	.39	UG/L	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND
Methyl tert-butyl ether	.36	UG/L	ND	ND	DNQ0.5	DNQ0.5
2-Nitropropane	.49	UG/L	ND	ND	ND	ND
ortho-xylene	.34	UG/L	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND

*= Method blank value above the MDL; sample result not included in average calculations.

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2017

Source:			SEC_EFF	SEC_EFF	SEC_EFF	SEC_EFF
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919302	P936674	P959816	P973160
Acrolein	.94	UG/L	ND	ND	ND	ND
Acrylonitrile	.48	UG/L	ND	ND	ND	ND
Benzene	.37	UG/L	ND	ND	ND	ND
Bromodichloromethane	.37	UG/L	ND	ND	ND	DNQ0.6
Bromoform	.36	UG/L	ND	ND	ND	ND
Bromomethane	.22	UG/L	DNQ0.27*	ND	DNQ0.46*	DNQ0.38*
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Chloroethane	.24	UG/L	ND	ND	ND	ND
2-Chloroethylvinyl ether	.25	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	DNQ0.6	ND	DNQ0.5	DNQ1.1
Chloromethane	.19	UG/L	ND	ND	ND	ND
Dibromochloromethane	.34	UG/L	ND	ND	ND	DNQ0.5
1,2-Dichlorobenzene	.36	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.47	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	ND	ND	ND
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.28	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.32	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.37	UG/L	ND	ND	ND	ND
trans-1,2-dichloroethene	.34	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.35	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	DNQ0.93*	ND	ND	ND
1,1,2,2-Tetrachloroethane	.33	UG/L	ND	ND	ND	ND
Tetrachloroethene	.4	UG/L	ND	ND	ND	ND
Toluene	.37	UG/L	ND	ND	ND	ND
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.32	UG/L	ND	ND	ND	ND
Trichloroethene	.43	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.26	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.51	UG/L	ND	ND	ND	ND
Vinyl chloride	.24	UG/L	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.36	UG/L	0.0	0.0	0.0	0.0
Total Dichlorobenzenes	.47	UG/L	0.0	0.0	0.0	0.0
Total Chloromethanes	.4	UG/L	0.0	0.0	0.0	0.0
Purgeable Compounds	2.39	UG/L	0.0	0.0	0.0	0.0
Additional Analytes Determined						
Acetone	6.74	UG/L	ND	ND	ND	ND
Allyl chloride	.44	UG/L	ND	ND	ND	ND
Benzyl chloride	.65	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	5.56	UG/L	ND	ND	ND	ND
Carbon disulfide	.37	UG/L	ND	ND	ND	ND
Chloroprene	.09	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Methyl Iodide	.32	UG/L	ND	ND	ND	ND
Methyl methacrylate	.32	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	.39	UG/L	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND
Methyl tert-butyl ether	.36	UG/L	ND	ND	ND	ND
2-Nitropropane	.49	UG/L	ND	ND	ND	ND
ortho-xylene	.34	UG/L	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND

*= Method blank value above the MDL; sample result not included in average calculations.

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2017

Source:			REC_WATER	REC_WATER	REC_WATER	REC_WATER
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919318	P936688	P959832	P973186
Acrolein	.94	UG/L	ND	ND	ND	ND
Acrylonitrile	.48	UG/L	ND	ND	ND	ND
Benzene	.37	UG/L	ND	ND	ND	ND
Bromodichloromethane	.37	UG/L	10.8	ND	10.5	12.5
Bromoform	.36	UG/L	DNQ1.4	ND	DNQ1.4	DNQ1.8
Bromomethane	.22	UG/L	DNQ0.4*	ND	DNQ0.51*	DNQ0.47*
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Chloroethane	.24	UG/L	ND	ND	ND	ND
2-Chloroethylvinyl ether	.25	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	7.7	DNQ1.4	7.9	10.1
Chloromethane	.19	UG/L	DNQ0.3	ND	ND	ND
Dibromochloromethane	.34	UG/L	7.0	ND	6.3	8.2
1,2-Dichlorobenzene	.36	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.47	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	ND	ND	ND
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.28	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.32	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.37	UG/L	ND	ND	ND	ND
trans-1,2-dichloroethene	.34	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.35	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	DNQ0.7	DNQ0.4	ND	DNQ0.67*
1,1,2,2-Tetrachloroethane	.33	UG/L	ND	ND	ND	ND
Tetrachloroethene	.4	UG/L	ND	ND	ND	ND
Toluene	.37	UG/L	ND	ND	ND	ND
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.32	UG/L	ND	ND	ND	ND
Trichloroethene	.43	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.26	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.51	UG/L	ND	ND	ND	ND
Vinyl chloride	.24	UG/L	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.36	UG/L	0.0	0.0	0.0	0.0
Total Dichlorobenzenes	.47	UG/L	0.0	0.0	0.0	0.0
Total Chloromethanes	.4	UG/L	7.7	0.0	7.9	10.1
Purgeable Compounds	2.39	UG/L	25.5	0.0	24.7	30.8
Additional Analytes Determined						
Acetone	6.74	UG/L	ND	ND	ND	ND
Allyl chloride	.44	UG/L	ND	ND	ND	ND
Benzyl chloride	.65	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	5.56	UG/L	ND	ND	ND	ND
Carbon disulfide	.37	UG/L	ND	ND	ND	ND
Chloroprene	.09	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Methyl Iodide	.32	UG/L	ND	ND	ND	ND
Methyl methacrylate	.32	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	.39	UG/L	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND
Methyl tert-butyl ether	.36	UG/L	ND	ND	ND	ND
2-Nitropropane	.49	UG/L	ND	ND	ND	ND
ortho-xylene	.34	UG/L	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND

*= Method blank value above the MDL; sample result not included in average calculations.

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2017

Source:			RSL	RSL	RSL	RSL
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919313	P936683	P959827	P973169
Acrolein	.94	UG/L	ND	ND	ND	ND
Acrylonitrile	.48	UG/L	ND	ND	ND	ND
Benzene	.37	UG/L	ND	ND	ND	ND
Bromodichloromethane	.37	UG/L	ND	ND	ND	ND
Bromoform	.36	UG/L	ND	ND	ND	ND
Bromomethane	.22	UG/L	ND	ND	ND	ND
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Chloroethane	.24	UG/L	ND	ND	ND	ND
2-Chloroethylvinyl ether	.25	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	6.5	4.2	3.2	3.3
Chloromethane	.19	UG/L	DNQ0.6	ND	ND	ND
Dibromochloromethane	.34	UG/L	ND	ND	ND	ND
1,2-Dichlorobenzene	.36	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.47	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	ND	DNQ0.7	ND
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.28	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.32	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.37	UG/L	ND	ND	ND	ND
trans-1,2-dichloroethene	.34	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.35	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	374	DNQ1.9	DNQ1.4	11.7
1,1,2,2-Tetrachloroethane	.33	UG/L	ND	ND	ND	ND
Tetrachloroethene	.4	UG/L	ND	ND	ND	ND
Toluene	.37	UG/L	DNQ1.7	4.5	2.4	13.0
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.32	UG/L	ND	ND	ND	ND
Trichloroethene	.43	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.26	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.51	UG/L	ND	ND	ND	ND
Vinyl chloride	.24	UG/L	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.36	UG/L	0.0	0.0	0.0	0.0
Total Dichlorobenzenes	.47	UG/L	0.0	0.0	0.0	0.0
Total Chloromethanes	.4	UG/L	381	4.2	3.2	15.0
Purgeable Compounds	2.39	UG/L	381	8.7	5.6	28.0
Additional Analytes Determined						
Acetone	6.74	UG/L	463	77.8	207	68.4
Allyl chloride	.44	UG/L	ND	ND	ND	ND
Benzyl chloride	.65	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	5.56	UG/L	12.1	ND	ND	ND
Carbon disulfide	.37	UG/L	3.1	4.8	2.3	2.7
Chloroprene	.09	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Methyl Iodide	.32	UG/L	ND	ND	ND	ND
Methyl methacrylate	.32	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	.39	UG/L	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	DNQ1.0	ND	ND
Methyl tert-butyl ether	.36	UG/L	ND	ND	DNQ0.4	ND
2-Nitropropane	.49	UG/L	ND	ND	ND	ND
ortho-xylene	.34	UG/L	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND

*= Method blank value above the MDL; sample result not included in average calculations.

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

SOUTH BAY WATER RECLAMATION PLANT
Tributyl Tin Analysis

Annual 2017

Source:			INF	INF	INF	INF	EFF	EFF	EFF
Sample ID:			P919279	P936651	P959798	P973142	P919284	P936656	P959803
Analyte	MDL	Units	07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017	07-FEB-2017	02-MAY-2017	01-AUG-2017
Dibutyltin	.0092	UG/L	ND	ND	ND	ND	ND	ND	ND
Monobutyltin	.013	UG/L	ND	ND	ND	ND	ND	ND	ND
Tributyltin	.0045	UG/L	ND	ND	ND	ND	ND	ND	ND

Source:			EFF	PRI_EFF	PRI_EFF	PRI_EFF	PRI_EFF	SEC_EFF	SEC_EFF
Sample ID:			P973147	P919294	P936666	P959808	P973152	P919299	P936671
Analyte	MDL	Units	03-OCT-2017	07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017	07-FEB-2017	02-MAY-2017
Dibutyltin	.0092	UG/L	ND	ND	ND	ND	ND	ND	ND
Monobutyltin	.013	UG/L	ND	ND	ND	ND	ND	ND	ND
Tributyltin	.0045	UG/L	ND	ND	ND	ND	ND	ND	ND

Source:			SEC_EFF	SEC_EFF	REC_WATER	REC_WATER	REC_WATER
Sample ID:			P959813	P973157	P936685	P959829	P973183
Analyte	MDL	Units	01-AUG-2017	03-OCT-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Dibutyltin	.0092	UG/L	ND	ND	ND	ND	ND
Monobutyltin	.013	UG/L	ND	ND	ND	ND	ND
Tributyltin	.0045	UG/L	ND	ND	ND	ND	ND

No recycled water was analyzed for the month of February 2017.

ND=not detected

SOUTH BAY WATER RECLAMATION PLANT
Dioxin and Furan Analysis

Annual 2017

Source:				INFLUENT	INFLUENT TCDD	EFFLUENT	EFFLUENT TCDD
Date:				07-FEB-2017	07-FEB-2017	07-FEB-2017	07-FEB-2017
Analytes	MDL	Units	Equiv.	P919279	P919279	P919284	P919284
2,3,7,8-tetra CDD	.132	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.366	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.331	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.344	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.308	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.354	PG/L	0.010	DNQ20.1	DNQ0.201	ND	ND
octa CDD	.589	PG/L	0.001	120	0.12	ND	ND
2,3,7,8-tetra CDF	.195	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	.32	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.313	PG/L	0.050	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.280	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.311	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.303	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.376	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.326	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.474	PG/L	0.010	ND	ND	ND	ND
octa CDF	.656	PG/L	0.001	DNQ6.71	DNQ0.007	ND	ND

Source:				INFLUENT	INFLUENT TCDD	EFFLUENT	EFFLUENT TCDD
Date:				02-MAY-2017	02-MAY-2017	02-MAY-2017	02-MAY-2017
Analytes	MDL	Units	Equiv.	P936651	P936651	P936656	P936656
2,3,7,8-tetra CDD	.209	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.231	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.305	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.319	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.306	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.408	PG/L	0.010	33.5	0.335	ND	ND
octa CDD	1.01	PG/L	0.001	180	0.18	ND	ND
2,3,7,8-tetra CDF	.196	PG/L	0.100	DNQ2.41	DNQ0.241	ND	ND
1,2,3,7,8-penta CDF	.271	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.303	PG/L	0.050	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.251	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.260	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.279	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.332	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.324	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.401	PG/L	0.010	ND	ND	ND	ND
octa CDF	.619	PG/L	0.001	DNQ7.92	DNQ0.008	ND	ND

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

Above are permit required CDD/CDF isomers.

SOUTH BAY WATER RECLAMATION PLANT
Dioxin and Furan Analysis

Annual 2017

Source:				INFLUENT	INFLUENT TCDD	EFFLUENT	EFFLUENT TCDD
Date:				01-AUG-2017	01-AUG-2017	01-AUG-2017	01-AUG-2017
Analytes	MDL	Units	Equiv.	P959798	P959798	P959803	P959803
2,3,7,8-tetra CDD	.209	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.231	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.305	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.319	PG/L	0.100	DNQ13.7	DNQ1.37	ND	ND
1,2,3,7,8,9-hexa CDD	.306	PG/L	0.100	DNQ4.65	DNQ0.465	ND	ND
1,2,3,4,6,7,8-hepta CDD	.408	PG/L	0.010	112	1.12	ND	ND
octa CDD	1.01	PG/L	0.001	320	0.32	ND	ND
2,3,7,8-tetra CDF	.196	PG/L	0.100	DNQ3.39	DNQ0.339	ND	ND
1,2,3,7,8-penta CDF	.271	PG/L	0.050	DNQ2.06	DNQ0.103	ND	ND
2,3,4,7,8-penta CDF	.303	PG/L	0.050	DNQ1.74	DNQ0.87	ND	ND
1,2,3,4,7,8-hexa CDF	.251	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.260	PG/L	0.100	DNQ9.96	DNQ0.996	ND	ND
1,2,3,7,8,9-hexa CDF	.279	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.332	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.324	PG/L	0.010	DNQ9.11	DNQ0.091	ND	ND
1,2,3,4,7,8,9-hepta CDF	.401	PG/L	0.010	ND	ND	ND	ND
octa CDF	.619	PG/L	0.001	DNQ14.5	DNQ0.015	ND	ND

Source:				INFLUENT	INFLUENT TCDD	EFFLUENT	EFFLUENT TCDD
Date:				03-OCT-2017	03-OCT-2017	03-OCT-2017	03-OCT-2017
Analytes	MDL	Units	Equiv.	P973142	P973142	P973147	P973147
2,3,7,8-tetra CDD	.178	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.289	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.311	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.370	PG/L	0.100	DNQ5.14	DNQ0.514	ND	ND
1,2,3,7,8,9-hexa CDD	.324	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.393	PG/L	0.010	74.1	0.741	ND	ND
octa CDD	1.1	PG/L	0.001	260	0.26	DNQ5.22	DNQ0.005
2,3,7,8-tetra CDF	.174	PG/L	0.100	DNQ2.64	DNQ0.264	ND	ND
1,2,3,7,8-penta CDF	.300	PG/L	0.050	DNQ1.41	DNQ0.071	ND	ND
2,3,4,7,8-penta CDF	.311	PG/L	0.050	DNQ1.82	DNQ0.91	ND	ND
1,2,3,4,7,8-hexa CDF	.290	PG/L	0.100	DNQ1.32	DNQ0.132	ND	ND
1,2,3,6,7,8-hexa CDF	.264	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.318	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.359	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.346	PG/L	0.010	DNQ4.21	DNQ0.042	ND	ND
1,2,3,4,7,8,9-hepta CDF	.484	PG/L	0.010	ND	ND	ND	ND
octa CDF	.858	PG/L	0.001	DNQ6.66	DNQ0.007	ND	ND

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

Above are permit required CDD/CDF isomers.

VII. Reclaimed Water Data Summary.

The results of all analyses performed on Reclaimed water are summarized in tables with monthly and annual averages (and in some cases annual totals) calculated. Graphs of monthly averages are presented.

A. Reclaimed Water Data Summaries
B. Reclaimed Water Graphs
C. Daily Values of Selected Parameters
D. Total Coliforms Data Summaries
E. UV Performance Report

This page intentionally left blank

A. Reclaimed Water Data Summaries

The results of all analyses performed on the SBWRP Reclaimed are summarized in tables with monthly and annual averages (and in some cases annual totals) calculated.

South Bay Water Reclamation Plant
Annual Recycled Water Turbidity Report - 2017
Data from in-plant meter

Month	1651 FLE AVG TURBIDITY NTU	1657 FLE MIN TURBIDITY NTU	1654 FLE MAX TURBIDITY NTU	1687 PCT. ABOVE 5 NTU (DURING RW DEL.) pct
Jan 2017	0.69	0.63	0.88	0.00
Feb 2017	0.74	0.71	0.82	0.00
Mar 2017	1.04	0.89	1.97	0.00
Apr 2017	0.86	0.73	1.45	0.00
May 2017	0.90	0.82	1.32	0.00
Jun 2017	0.92	0.77	1.17	0.00
Jul 2017	0.79	0.71	1.49	0.00
Aug 2017	0.89	0.79	1.69	0.00
Sep 2017	0.68	0.65	0.76	0.00
Oct 2017	0.76	0.69	1.28	0.00
Nov 2017	0.76	0.70	0.91	0.00
Dec 2017	0.74	0.68	0.98	0.00
Average	0.81	0.73	1.23	0.00

1657- Mimimum Daily value is the average recorded value for the month.
1654- Maximum Daily value is the average recorded value for the month.
1687- Total Time for the month
Compliance monitoring point,values taken from DCS Point(S29A10203),located at the UV Vault in Area 29 (Tertiary UV Disinfection System)

SOUTH BAY WATER RECLAMATION PLANT

Annual 2017

Reclaim Water
(SB_REC_WATER_34)

Analyte:	Flow	pH	Biochemical Oxygen Demand	Total Suspended Solids	Volatile Suspended Solids	Total Dissolved Solids	Turbidity*
Units:	(mgd)		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(NTU)
JANUARY -2017	0.06	7.23	2	ND	ND	1042^	NR
FEBRUARY -2017	0.18	7.16	2	ND	ND	1040	0.51
MARCH -2017	1.18	7.18	5	ND	ND	1080	NR
APRIL -2017	3.75	7.17	2	<2.5	<2.5	933	NR
MAY -2017	3.19	7.17	3	ND	ND	1020	0.55
JUNE -2017	4.38	7.18	2	<2.5	<2.5	1060	NR
JULY -2017	4.79	7.14	2	<2.5	<2.5	992	NR
AUGUST -2017	4.91	7.18	2	ND	<2.5	1030	0.75
SEPTEMBER-2017	4.18	7.15	3	3.5	3.3	903	NR
OCTOBER -2017	3.95	7.12	4	<2.5	<2.5	929	0.77
NOVEMBER -2017	2.73	7.10	<2	ND	ND	886	NR
DECEMBER -2017	2.63	7.10	2	<2.5	<2.5	931	NR
Average	2.99	7.16	2	0.3	0.3	982	0.65

^= No reclaimed water distributed; value not used in average calculations.

*= Not for compliance monitoring

ND=not detected; NR=not required

SOUTH BAY WATER RECLAMATION PLANT
SB_REC_WATER_34 Reclaimed Water- Annual Averages

Annual 2017

Analyte:	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron
MDL:	23.8	2.44	1.84	.7	.12	1.4
Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
JANUARY -2017	*	*	*	*	*	*
FEBRUARY -2017	46.7	ND	0.51	26.9	ND	377
MARCH -2017	ND	ND	ND	62.7	ND	394
APRIL -2017	ND	ND	0.61	45.0	ND	377
MAY -2017	25.1	ND	<0.37	42.8	ND	733
JUNE -2017	45.9	2.56	NR	46.2	0.09	382
JULY -2017	67.9	ND	NR	41.3	ND	353
AUGUST -2017	ND	ND	ND	38.6	ND	391
SEPTEMBER-2017	13.9	0.78	ND	44.4	ND	472
OCTOBER -2017	156	0.57	ND	37.6	ND	365
NOVEMBER -2017	159	0.59	ND	32.7	ND	464
DECEMBER -2017	9.29	0.59	ND	38.5	ND	357
Annual Average:	47.6	0.46	0.12	41.5	0.01	424

Analyte:	Cadmium	Chromium	Copper	Iron	Manganese	Mercury
MDL:	.26	.54	2.16	17.1	.78	.002
Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
JANUARY -2017	*	*	*	*	*	NR
FEBRUARY -2017	ND	1.06	17.1	103	32.3	ND
MARCH -2017	ND	ND	7.09	62.1	37.9	NR
APRIL -2017	ND	ND	7.10	31.2	11.6	NR
MAY -2017	ND	ND	6.52	36.9	6.18	0.003
JUNE -2017	ND	0.84	8.83	27.4	3.73	NR
JULY -2017	ND	0.82	3.90	36.9	31.1	NR
AUGUST -2017	ND	0.91	7.29	25.1	4.95	0.002
SEPTEMBER-2017	ND	0.50	7.03	35.3	10.8	NR
OCTOBER -2017	ND	0.44	9.65	48.0	6.65	0.002
NOVEMBER -2017	ND	0.28	7.80	44.3	19.0	NR
DECEMBER -2017	ND	0.34	6.60	30.4	19.4	NR
Annual Average:	ND	0.47	8.08	43.7	16.7	0.002

Analyte:	Nickel	Selenium	Thallium	Chloride	Fluoride	Sulfate
MDL:	.53	.662	3.12	7	.05	9
Units:	UG/L	UG/L	UG/L	MG/L	MG/L	MG/L
JANUARY -2017	*	*	*	266*	0.50*	224*
FEBRUARY -2017	3.84	0.92	ND	264	0.47	223
MARCH -2017	2.94	0.35	ND	305	0.57	182
APRIL -2017	2.84	0.62	ND	249	0.50	144
MAY -2017	2.51	0.37	ND	264	0.52	134
JUNE -2017	2.85	NR	ND	277	0.57	139
JULY -2017	2.71	NR	ND	277	0.56	126
AUGUST -2017	2.42	ND	ND	284	0.59	126
SEPTEMBER-2017	3.01	ND	ND	264	0.55	123
OCTOBER -2017	2.48	1.02	ND	265	0.55	120
NOVEMBER -2017	3.02	2.03	ND	256	0.57	123
DECEMBER -2017	1.90	ND	ND	267	0.57	124
Annual Average:	2.77	0.59	0.00	270	0.55	142

*= No reclaimed water distributed; value not used in average calculations.

ND= Not Detected; Not Required

SOUTH BAY WATER RECLAMATION PLANT
SB_REC_WATER_34 Reclaimed Water- Annual Averages

Annual 2017

Analyte:	Total Cyanides	MBAS (surfactants)	Percent Sodium	Calcium	Magnesium	Potassium
MDL:	.005	.03		.059	.078	.15
Units:	MG/L	MG/L	Calculated %	MG/L	MG/L	MG/L
JANUARY -2017	NR	0.11	*	*	*	*
FEBRUARY -2017	0.003	0.06	56.0	80.6	30.0	17.3
MARCH -2017	NR	0.13^	59.5	77.9	32.3	18.1
APRIL -2017	NR	0.06	60.7	58.6	23.5	16.1
MAY -2017	0.003	0.08	62.6	59.3	28.5	19.4
JUNE -2017	NR	0.07	60.9	59.8	28.8	18.8
JULY -2017	NR	0.10	61.8	59.1	26.2	18.9
AUGUST -2017	<0.005	0.07	62.9	56.6	25.7	18.0
SEPTEMBER-2017	NR	0.10	63.0	55.5	25.9	17.6
OCTOBER -2017	<0.005	0.04	63.1	54.1	26.0	17.7
NOVEMBER -2017	NR	ND	62.8	54.6	27.3	18.5
DECEMBER -2017	NR	0.12	62.0	55.7	28.6	19.3
Annual Average:	0.002	0.07	61.4	61.1	27.5	18.2

Analyte:	Sodium	Calcium Hardness	Magnesium Hardness	Total Hardness	Total Dissolved Solids	Lithium
MDL:	1.89	.059	.078	.078	100	.01
Units:	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
JANUARY -2017	*	*	*	*	*	*
FEBRUARY -2017	203	202	123	325	1040	0.04
MARCH -2017	220	195	132	327	1080	0.04
APRIL -2017	184	147	96	243	933	0.02
MAY -2017	224	148	117	265	1020	0.02
JUNE -2017	213	150	118	268	1060	0.02
JULY -2017	205	148	107	255	992	0.02
AUGUST -2017	212	142	105	247	1030	0.01
SEPTEMBER-2017	209	139	106	245	903	0.01
OCTOBER -2017	208	135	107	242	929	0.01
NOVEMBER -2017	210	137	112	249	886	0.02
DECEMBER -2017	211	139	117	256	931	0.02
Annual Average:	209	153	113	266	982	0.02

Analyte:	Cobalt	Molybdenum	Vanadium	Nitrate	O-Phosphate	Tot Alkalinity (bicarbonate)
MDL:	.24	.32	2.77	.04	.2	20
Units:	UG/L	UG/L	UG/L	MG/L	MG/L	MG/L
JANUARY -2017	*	*	*	*	*	166
FEBRUARY -2017	0.51	8.00	1.12	35.2	1.7	157
MARCH -2017	0.42	4.86	1.89	37.3	4.7	158*
APRIL -2017	0.48	4.15	1.69	40.3	2.2	152
MAY -2017	0.37	3.57	1.32	40.1	6.0	155
JUNE -2017	0.80	5.26	0.84	39.0	6.2	175
JULY -2017	0.73	3.42	1.37	39.1	7.1	162
AUGUST -2017	0.59	3.35	0.49	41.3	9.4	152
SEPTEMBER-2017	0.14	3.06	4.63	34.5	7.7	172
OCTOBER -2017	0.17	3.30	ND	42.5	3.8	153
NOVEMBER -2017	0.14	2.12	3.24	35.4	6.0	163
DECEMBER -2017	0.19	3.35	ND	37.8	13.3	167
Annual Average:	0.41	4.04	1.51	38.4	6.2	161

*= No reclaimed water distributed; value not used in average calculations.
^= Method blank value above the MDL; sample result not included in average calculations.

ND= Not Detected; Not Required

SOUTH BAY WATER RECLAMATION PLANT
Reclaimed Water

Annual 2017

Source:			SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Sample ID:	MDL	Units	P919315	P936685	P959829	P973183
Aluminum	23.8	UG/L	47	25	ND	156
Antimony	2.44	UG/L	ND	ND	ND	0.6
Arsenic	1.84	UG/L	0.5	<0.4	ND	ND
Barium	.7	UG/L	26.9	42.8	38.6	37.6
Beryllium	.12	UG/L	ND	ND	ND	ND
Boron	1.4	UG/L	377	733	391	365
Cadmium	.26	UG/L	ND	ND	ND	ND
Chromium	.54	UG/L	1.1	ND	0.9	0.4
Cobalt	.24	UG/L	0.51	0.37	0.59	0.17
Copper	2.16	UG/L	17	7	7	10
Iron	17.1	UG/L	103	37	25	48
Lead	1.68	UG/L	2	ND	ND	<0
Manganese	.78	UG/L	32.3	6.2	5.0	6.7
Mercury	.002	UG/L	ND	0.003	0.002	0.002
Molybdenum	.32	UG/L	8.0	3.6	3.4	3.3
Nickel	.53	UG/L	3.84	2.51	2.42	2.48
Selenium	.662	UG/L	0.92	0.37	ND	1.02
Silver	.73	UG/L	ND	ND	ND	ND
Thallium	3.12	UG/L	ND	ND	ND	ND
Vanadium	2.77	UG/L	1.12	1.32	0.49	ND
Zinc	4.19	UG/L	18.4	56.5	53.7	51.4
Bromide	.1	MG/L	0.3	0.5	0.4	0.3
Chloride	7	MG/L	273	243	270	262
Fluoride	.05	MG/L	0.48	0.47	0.60	0.55
Nitrate	.04	MG/L	36.1	43.8	40.4	38.8
Nitrate as N		MG/L	8.16	9.90	9.13	8.77
Ortho Phosphate (as PO4)	.2	MG/L	0.7	1.3	6.7	4.8
Sulfate	9	MG/L	229	128	117	121
Calcium	.059	MG/L	81	56	53	56
Lithium	.002	MG/L	0.036	0.018*	0.012	0.018
Magnesium	.078	MG/L	30	23	24	25
Potassium	.057	MG/L	17	19	17	17
Sodium	.927	MG/L	203	247	197	210
Calcium Hardness	.147	MG/L	201	139	133	138
Magnesium Hardness	.321	MG/L	124	96	98	102
Total Hardness	.469	MG/L	325	235	231	240
Cyanide, Total	.002	MG/L	0.003	0.003	NR	NR
Cyanide, Total	.005	MG/L	NR	NR	<0.005	<0.005
Sulfides-Total	.35	MG/L	ND	0.41	1.25	0.48
Total Kjeldahl Nitrogen	1.2	MG/L	1.2	2.5	1.7	ND
Ammonia-N	.3	MG/L	ND	ND	ND	ND
Adjusted Sodium Adsorption		MG/L	5.5	7.5	6.0	NA
Percent Sodium		PERCENT	56.0	67.5	63.0	63.5
Total Organic Carbon	.3	MG/L	7.7	10.7	NA	10.7

*= This result is the average of May 15, 21 and 31st sampling dates.

ND= Not Detected; NR= Not Required; NA= Not Analyzed

SOUTH BAY WATER RECLAMATION PLANT
Reclaimed water

Radioactivity

Annual 2017

Source	Sample Date	Sample ID	Gross Alpha Radiation	Gross Beta Radiation
SB_REC_WATER_34	07-FEB-2017	P919315	5.5 ± 2.6	12.0 ± 1.8
SB_REC_WATER_34	02-MAY-2017	P936685	5.7 ± 1.8	8.6 ± 1.5
SB_REC_WATER_34	01-AUG-2017	P959829	2.6 ± 2.0	11.4 ± 1.8
SB_REC_WATER_34	03-OCT-2017	P973183	2.5 ± 1.5	1.8 ± 1.0

Units in picocuries per Liter (pCi/L)

South Bay Water Reclamation Plant
Reclaimed water

Chlorinated Pesticides

Annual 2017

Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919315	P936685	P959829	P973183^
Aldrin	5	NG/L	ND	ND	ND	ND
BHC, Alpha isomer	10	NG/L	ND	ND	ND	ND
BHC, Beta isomer	5	NG/L	ND	ND	ND	ND
BHC, Delta isomer	5	NG/L	ND	ND	ND	ND
BHC, Gamma isomer	20	NG/L	ND	ND	ND	ND
Alpha (cis) Chlordane	1	NG/L	ND	ND	ND	ND
Gamma (trans) Chlordane	1.83	NG/L	ND	ND	ND	ND
Alpha Chlordene		NG/L	NA	NA	NA	NA
Gamma Chlordene		NG/L	NA	NA	NA	NA
Cis Nonachlor	1	NG/L	ND	ND	ND	ND
Dieldrin	10	NG/L	ND	ND	ND	ND
Endosulfan Sulfate	44	NG/L	ND	ND	ND	ND
Alpha Endosulfan	11	NG/L	ND	ND	ND	ND
Beta Endosulfan	2.69	NG/L	ND	ND	ND	ND*
Endrin	.82	NG/L	ND	ND	ND	ND*
Endrin aldehyde	10	NG/L	ND	ND	ND	ND
Heptachlor	10	NG/L	ND	ND	ND	ND
Heptachlor epoxide	10	NG/L	ND	ND	ND	ND
Methoxychlor	460	NG/L	ND	ND	ND	NA
Mirex	1.61	NG/L	ND	ND	ND	ND
o,p-DDD	2	NG/L	ND	ND	ND	ND
o,p-DDE	4	NG/L	ND	ND	ND	ND
o,p-DDT	1	NG/L	ND	ND	ND	ND
Oxychlordane	1.21	NG/L	ND	ND	ND	NA
PCB 1016	500	NG/L	ND	ND	ND	ND
PCB 1221	2000	NG/L	ND	ND	ND	ND
PCB 1232	750	NG/L	ND	ND	ND	ND
PCB 1242	410	NG/L	ND	ND	ND	ND
PCB 1248	280	NG/L	ND	ND	ND	ND
PCB 1254	500	NG/L	ND	ND	ND	ND
PCB 1260	500	NG/L	ND	ND	ND	ND
PCB 1262	500	NG/L	ND	ND	ND	NA
p,p-DDD	.69	NG/L	ND	ND	ND	ND*
p,p-DDE	.97	NG/L	ND	ND	ND	ND*
p,p-DDT	10	NG/L	ND	ND	ND	ND
Toxaphene	500	NG/L	ND	ND	ND	ND
Trans Nonachlor	1	NG/L	ND	ND	ND	ND
Heptachlors	10	NG/L	0	0	0	0
Endosulfans	44	NG/L	0	0	0	0
Polychlorinated biphenyls	2000	NG/L	0	0	0	0
Chlordane + related cmpds.	1.83	NG/L	0	0	0	0
DDT and derivatives	10	NG/L	0	0	0	0
Hexachlorocyclohexanes	20	NG/L	0	0	0	0
Aldrin + Dieldrin	10	NG/L	0	0	0	0
Chlorinated Hydrocarbons	2000	NG/L	0	0	0	0

*= One or more quality control criteria not met; value not used in average calculations.

ND=not detected; NA=not analyzed

Standards for alpha and gamma chlordene are no longer available in the U.S. for the analysis of these compounds.

^= Analyzed by: BABCOCK Laboratories, Inc.

South Bay Water Reclamation Plant
Reclaimed Water

OrganoPhosphorous Analysis

Annual 2017

Date:			02-MAY-2017	03-OCT-2017
Analyte	MDL	Units	P936685	P973183
Demeton O	.01	UG/L	ND	ND
Demeton S	.04	UG/L	ND	ND
Diazinon	.02	UG/L	ND	ND
Guthion	.03	UG/L	ND	ND
Malathion	.02	UG/L	ND	ND
Parathion	.01	UG/L	ND	ND
Dichlorvos	.01	UG/L	ND	ND
Disulfoton	.01	UG/L	ND	ND
Stirophos	.01	UG/L	ND	ND
Coumaphos	.05	UG/L	ND	ND
Chlorpyrifos	.02	UG/L	ND	ND
Thiophosphorus Pesticides	.03	UG/L	0.0	0.0
Demeton -O, -S	.04	UG/L	0.0	0.0
Total Organophosphorus Pesticides	.05	UG/L	0.0	0.0

ND= Not Detected

South Bay Water Reclamation Plant
Reclaimed Water

Organotins

Annual 2017

Source:			SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34
Date:			02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P936685	P959829	P973183
Tributyltin	.0045	UG/L	ND	ND	ND
Dibutyltin	.0092	UG/L	ND	ND	ND
Monobutyltin	.013	UG/L	ND	ND	ND

No recycled water was assigned for analysis for the Month of February 2017.

ND= not detected

South Bay Water Reclamation Plant
Reclaimed Water

Phenols

Annual 2017

Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919315	P936685	P959829	P973183
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND
Phenol	1.76	UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.00	0.00	0.00	0.00
Total Non-Chlorinated Phenols	2.16	UG/L	0.00	0.00	0.00	0.00
Total Phenols	2.16	UG/L	0.00	0.00	0.00	0.00
Additional analytes determined						
2-Methylphenol	2.15	UG/L	ND	ND	ND	ND
3-Methylphenol(4-MP is unresolved)		UG/L	NA	NA	NA	NA
4-Methylphenol(3-MP is unresolved)	2.11	UG/L	ND	ND	ND	ND
2,4,5-Trichlorophenol	1.66	UG/L	ND	ND	ND	ND

ND= not detected; NA= not analyzed

South Bay Water Reclamation Plant
Reclaimed water

Base/Neutrals

Annual 2017

Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919315	P936685	P959829	P973183
Acenaphthene	1.8	UG/L	ND	ND	ND	ND
Acenaphthylene	1.77	UG/L	ND	ND	ND	ND
Anthracene	1.29	UG/L	ND	ND	ND	ND
Benzidine	1.52	UG/L	ND	ND*	ND	ND
Benzo[a]anthracene	1.1	UG/L	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35	UG/L	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49	UG/L	ND	ND	ND	ND
Benzo[a]pyrene	1.25	UG/L	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09	UG/L	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4	UG/L	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01	UG/L	ND	ND	ND	ND
Bis-(2-chloroethyl) ether	1.38	UG/L	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16	UG/L	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57	UG/L	ND	ND	ND	ND
2-Chloronaphthalene	1.87	UG/L	ND	ND	ND	ND
Chrysene	1.16	UG/L	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01	UG/L	ND	ND	ND	ND
Butyl benzyl phthalate	2.84	UG/L	ND	ND	ND	ND
Di-n-butyl phthalate	3.96	UG/L	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96	UG/L	ND	ND	54.8	ND
Diethyl phthalate	3.05	UG/L	ND	ND	ND	ND
Dimethyl phthalate	1.44	UG/L	ND	ND	ND	ND
Di-n-octyl phthalate	1	UG/L	ND	ND	ND	ND
3,3-Dichlorobenzidine	2.44	UG/L	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36	UG/L	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53	UG/L	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37	UG/L	ND	ND	ND	ND
Fluoranthene	1.33	UG/L	ND	ND	ND	ND
Fluorene	1.61	UG/L	ND	ND	ND	ND
Hexachlorobenzene	1.48	UG/L	ND	ND	ND	ND
Hexachlorobutadiene	1.64	UG/L	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25	UG/L	ND	ND	ND	ND
Hexachloroethane	1.32	UG/L	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14	UG/L	ND	ND	ND	ND
Isophorone	1.53	UG/L	ND	ND	ND	ND
Naphthalene	1.65	UG/L	ND	ND	ND	ND
Nitrobenzene	1.6	UG/L	ND	ND	ND	ND
N-nitrosodimethylamine	1.27	UG/L	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16	UG/L	ND	ND	ND	ND
N-nitrosodiphenylamine	3.48	UG/L	ND	ND	ND	ND
Phenanthrene	1.34	UG/L	ND	ND	ND	ND
Pyrene	1.43	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52	UG/L	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77	UG/L	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96	UG/L	0.0	0.0	54.8	0.0

Additional analytes determined

Benzo[e]pyrene	1.44	UG/L	ND	ND	ND	ND
Biphenyl	2.29	UG/L	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16	UG/L	ND	ND	ND	ND
1-Methylnaphthalene	2.18	UG/L	ND	ND	ND	ND
1-Methylphenanthrene	1.46	UG/L	ND	ND	ND	ND
2-Methylnaphthalene	2.14	UG/L	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18	UG/L	ND	ND	ND	ND
Perylene	1.41	UG/L	ND	ND	ND	ND

* = Recovery of compound in internal check and matrix spike sample outside method acceptance limits; value is not used in average calculations.

ND= Not Detected

SOUTH BAY WASTEWATER TREATMENT PLANT
Annual Priority Pollutants Purgeable Compounds, EPA Method 624 Report

Annual 2017

Source:			SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919318	P936688	P959832	P973186
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
Chloromethane	.19	UG/L	DNQ0.3	ND	ND	ND
Vinyl chloride	.24	UG/L	ND	ND	ND	ND
Bromomethane	.22	UG/L	DNQ0.4*	ND	DNQ0.51*	DNQ0.47*
Chloroethane	.24	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.26	UG/L	ND	ND	ND	ND
Acrolein	.94	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.28	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	DNQ0.7	DNQ0.4	ND	DNQ0.67*
trans-1,2-dichloroethene	.34	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.37	UG/L	ND	ND	ND	ND
Acrylonitrile	.48	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	7.7	DNQ1.4	7.9	10.1
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Benzene	.37	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.32	UG/L	ND	ND	ND	ND
Trichloroethene	.43	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
Bromodichloromethane	.37	UG/L	10.8	ND	10.5	12.5
2-Chloroethylvinyl ether	.25	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
Toluene	.37	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.35	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.32	UG/L	ND	ND	ND	ND
Tetrachloroethene	.4	UG/L	ND	ND	ND	ND
Dibromochloromethane	.34	UG/L	7.0	ND	6.3	8.2
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Bromoform	.36	UG/L	DNQ1.4	ND	DNQ1.4	DNQ1.8
1,1,2,2-Tetrachloroethane	.33	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.47	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	ND	ND	ND
1,2-Dichlorobenzene	.36	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.51	UG/L	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.36	UG/L	0.0	0.0	0.0	0.0
Total Dichlorobenzenes	.47	UG/L	0.0	0.0	0.0	0.0
Total Chloromethanes	.4	UG/L	7.7	0.0	7.9	10.1
Purgeable Compounds	.94	UG/L	25.5	0.0	24.7	30.8
Additional analytes determined						
Methyl Iodide	.32	UG/L	ND	ND	ND	ND
Carbon disulfide	.37	UG/L	ND	ND	ND	ND
Acetone	6.74	UG/L	ND	ND	ND	ND
Allyl chloride	.44	UG/L	ND	ND	ND	ND
Methyl tert-butyl ether	.36	UG/L	ND	ND	ND	ND
Chloroprene	.09	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	5.56	UG/L	ND	ND	ND	ND
Methyl methacrylate	.32	UG/L	ND	ND	ND	ND
2-Nitropropane	.49	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	.39	UG/L	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND
ortho-xylene	.34	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND
Benzyl chloride	.65	UG/L	ND	ND	ND	ND

*= Method blank value above the MDL; sample result not included in average calculations.

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

South Bay Water Reclamation Plant
Reclaimed Water

Benzidines

Annual 2017

Source:			SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34
Date:			07-FEB-2017	02-MAY-2017	01-AUG-2017	03-OCT-2017
Analyte	MDL	Units	P919315	P936685	P959829	P973183
3,3-Dichlorobenzidine	2.44	UG/L	ND	ND	ND	ND
Benzidine	1.52	UG/L	ND	ND*	ND	ND

*= Recovery of compound in internal check and matrix spike sample outside method acceptance limits; value is not used in average calculations.

ND= not detected

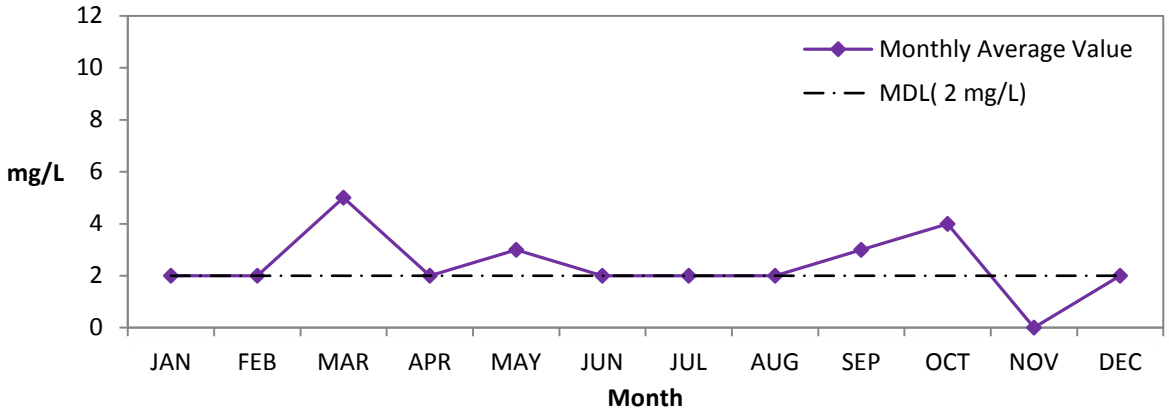
B. Reclaimed Water Graphs

Graphs of monthly averages for permit parameters with measurable concentration averages.

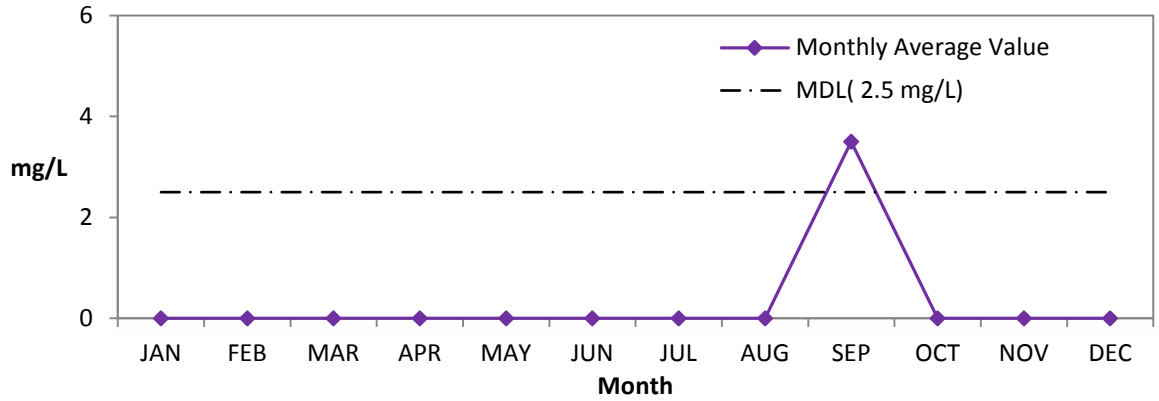
Please note that many of the graphs are on expanded scales. That is, they normally don't go to zero concentrations but show, in magnified scale, that range of concentrations where variation takes place. This makes differences and some trends obvious that might normally not be noticed. However, it also provides the temptation to interpret minor changes or trends as being of more significance than they are. Frequent reference to the scales and the actual differences in concentrations is therefore necessary.

2017 South Bay Reclaimed Water

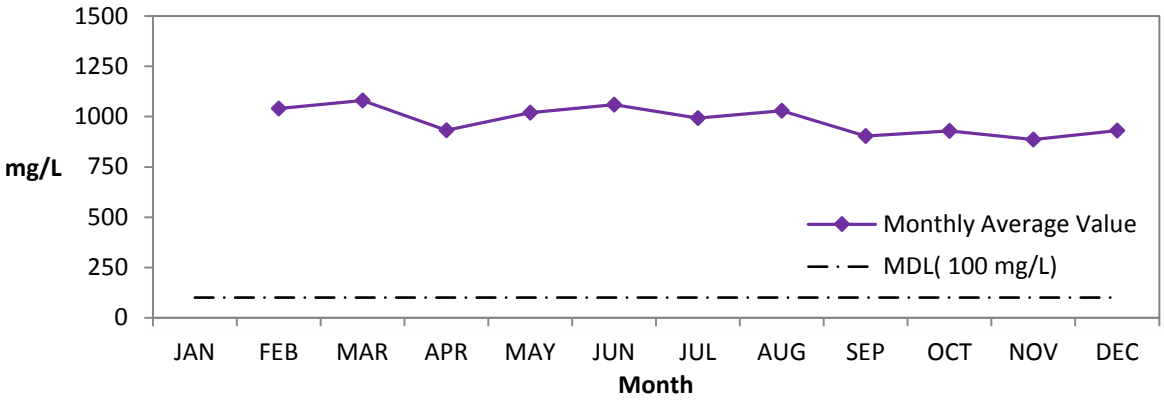
Biological Oxygen Demand



Total Suspended Solids

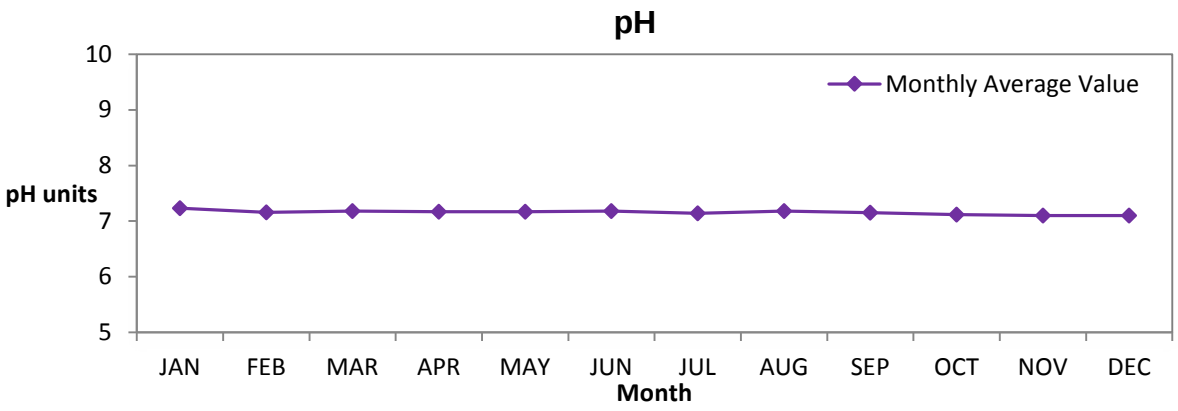


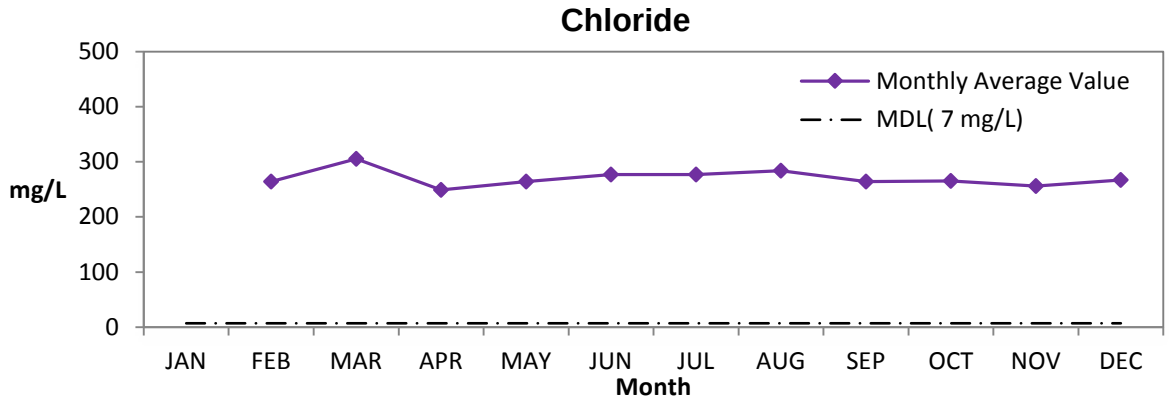
Total Dissolved Solids

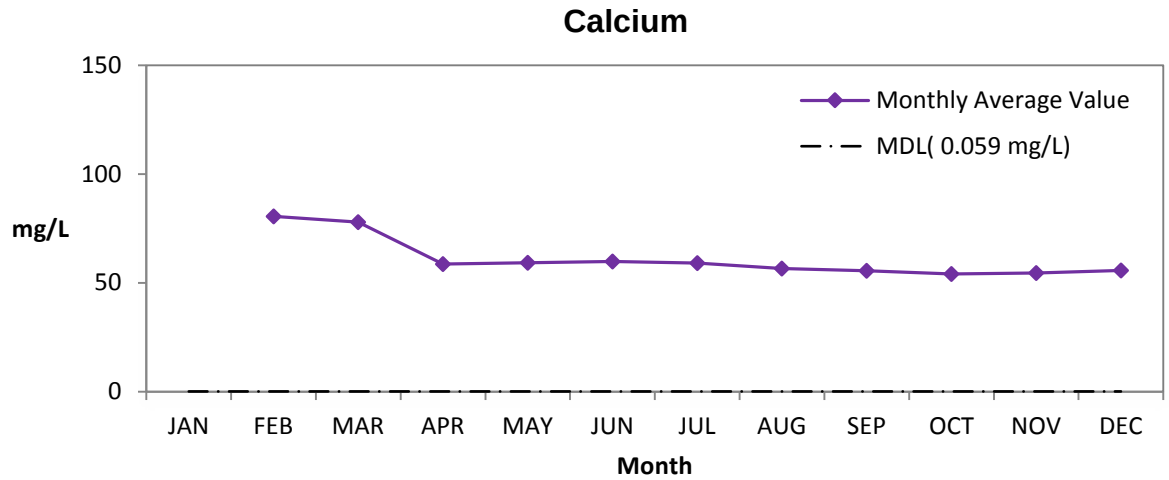


For Total Dissolved Solids during the month of January no reclaimed water was distributed; value not used in average calculations.

2017 South Bay Reclaimed Water

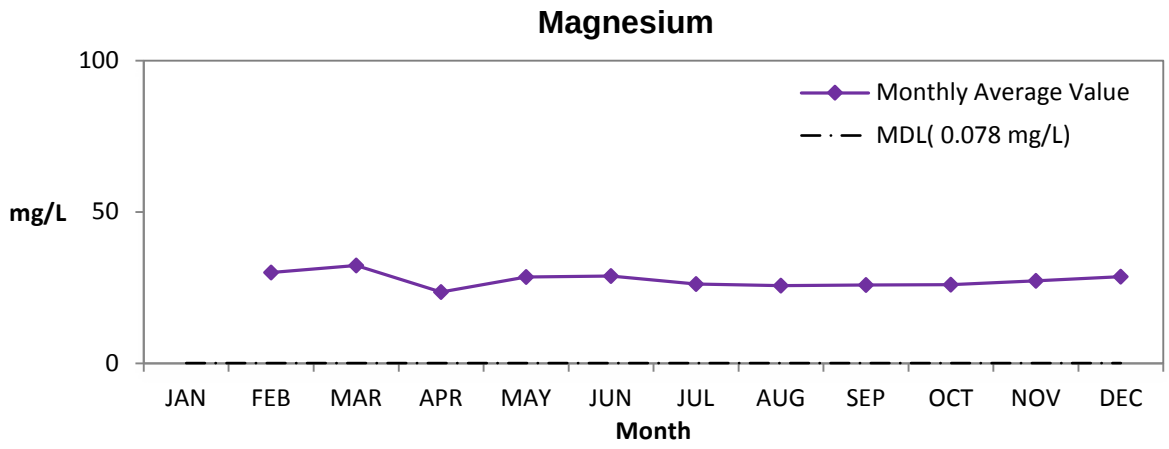


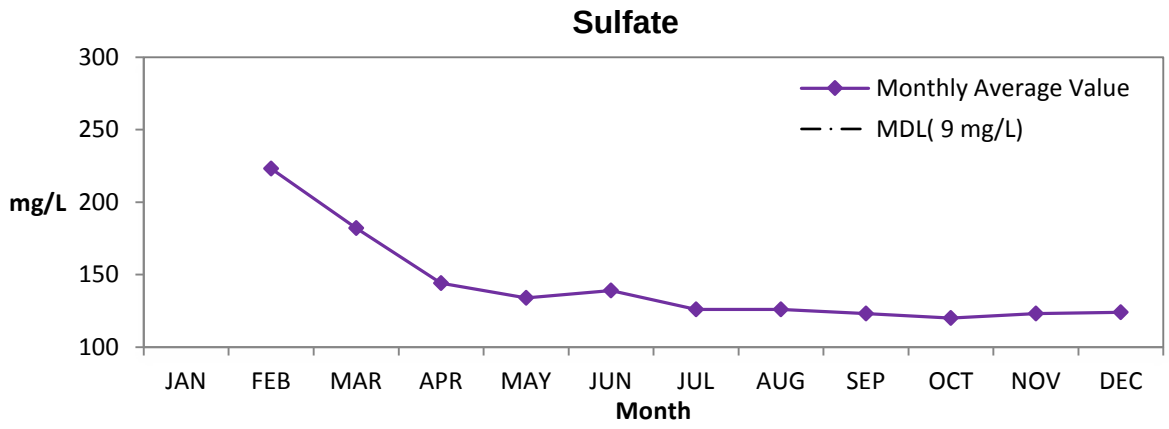


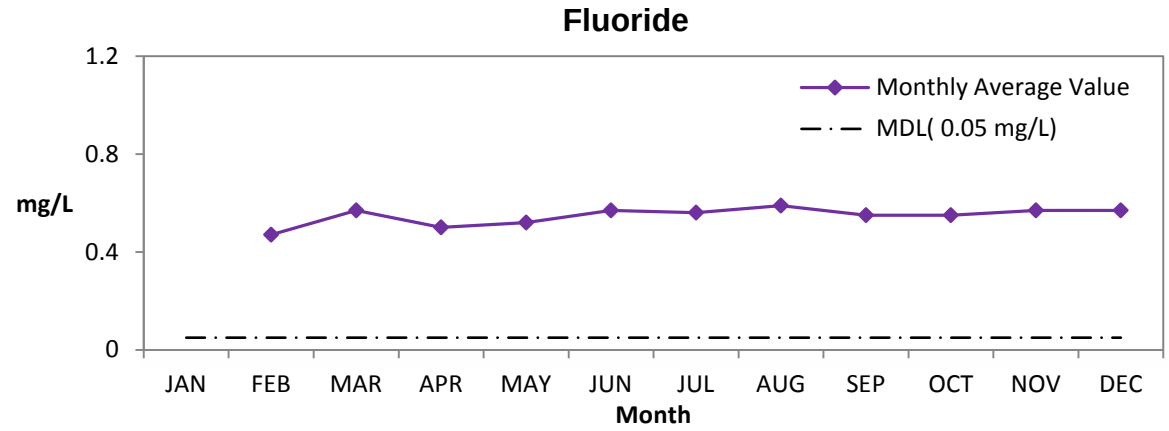


For Chloride and Calcium during the month of January no reclaimed water was distributed; value not used in average calculations.

2017 South Bay Reclaimed Water

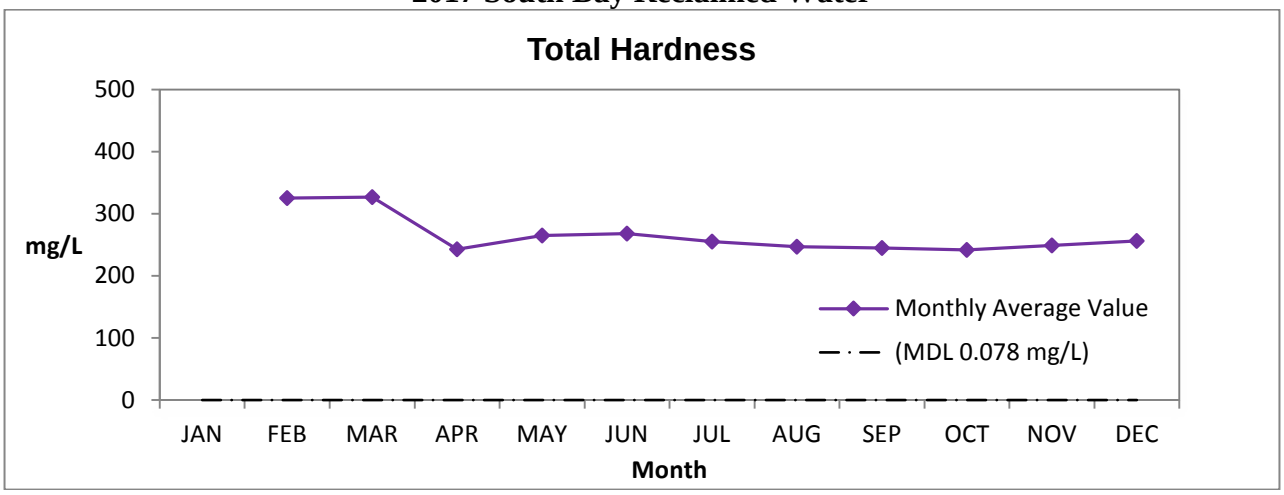


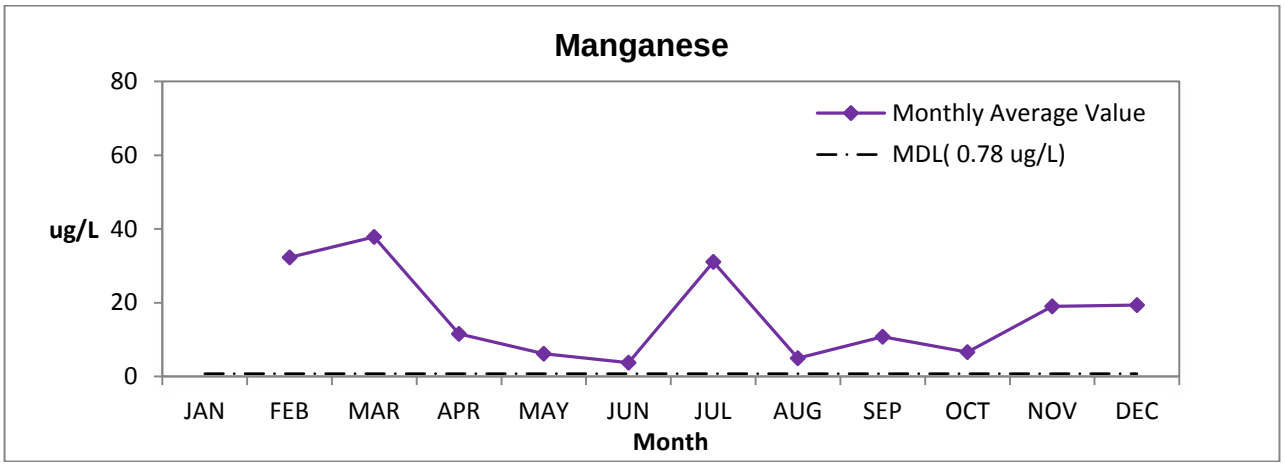


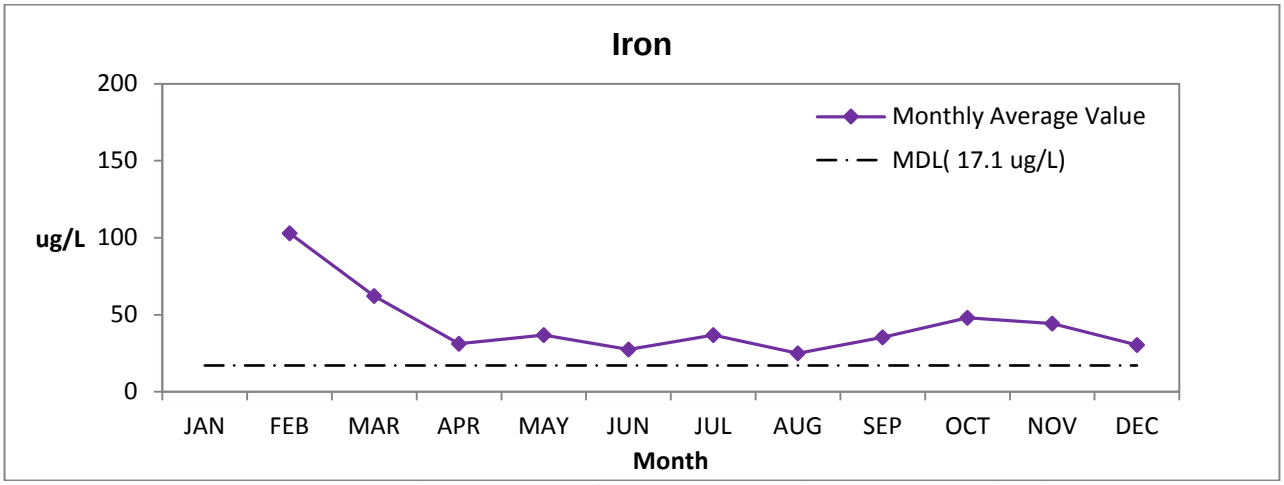


For Magnesium, Sulfate and Fluoride during the month of January no reclaimed water was distributed; value not used in average calculations.

2017 South Bay Reclaimed Water

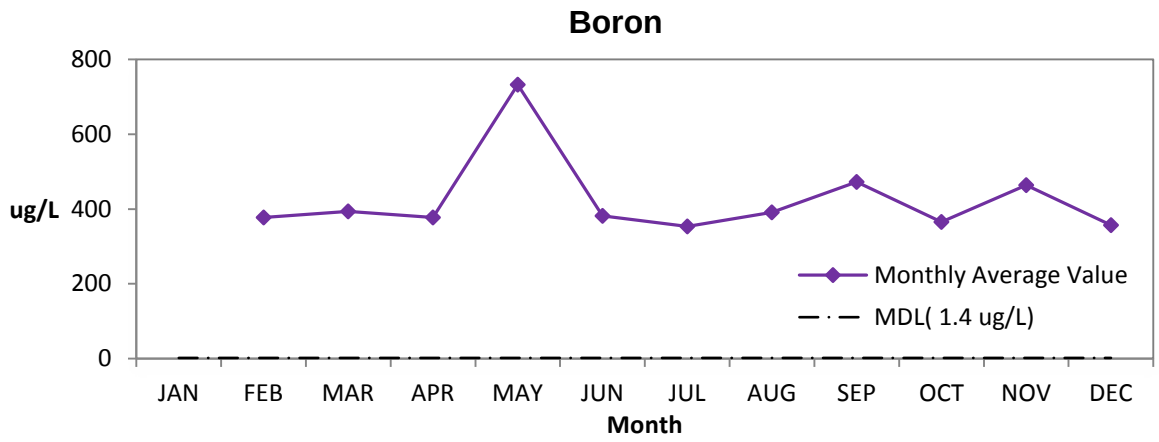


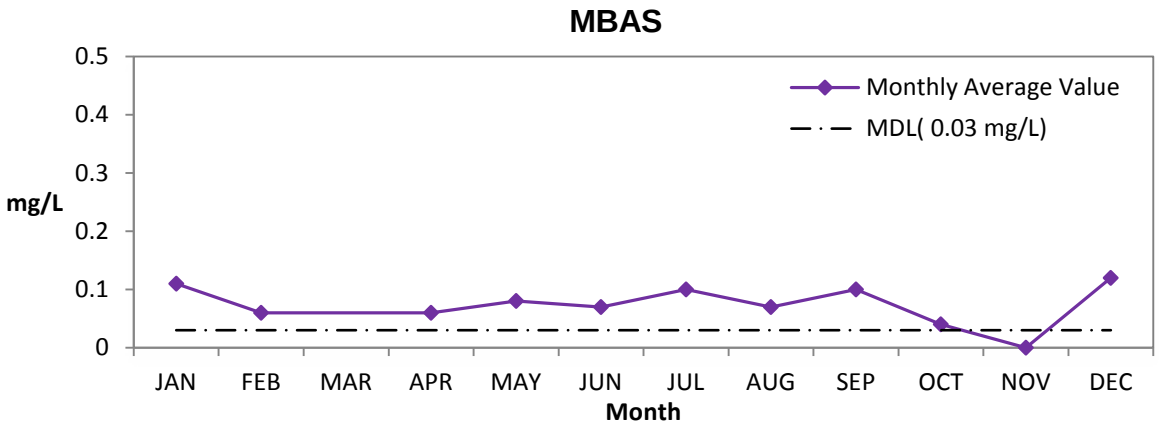


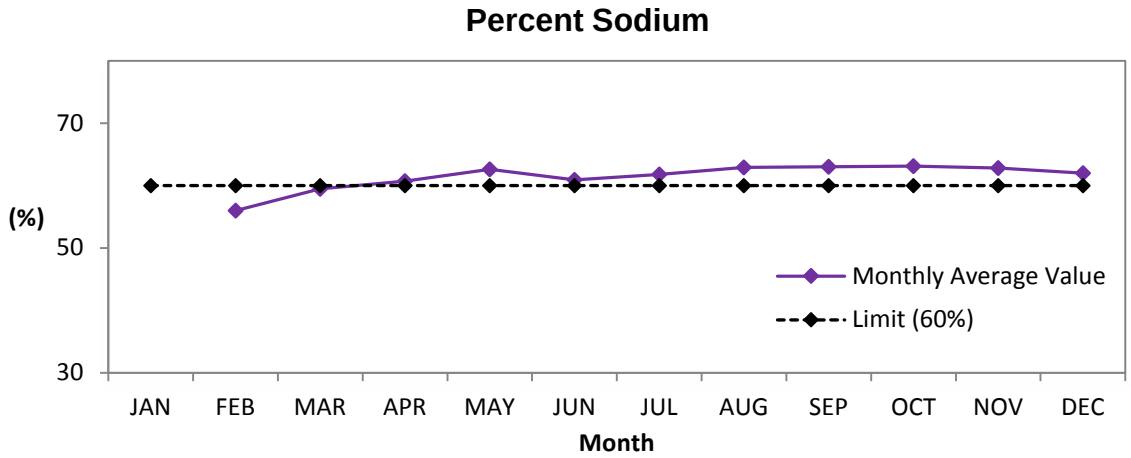


For Total Hardness, Manganese and Iron during the month of January no reclaimed water was distributed; value not used in average calculations.

2017 South Bay Reclaimed Water





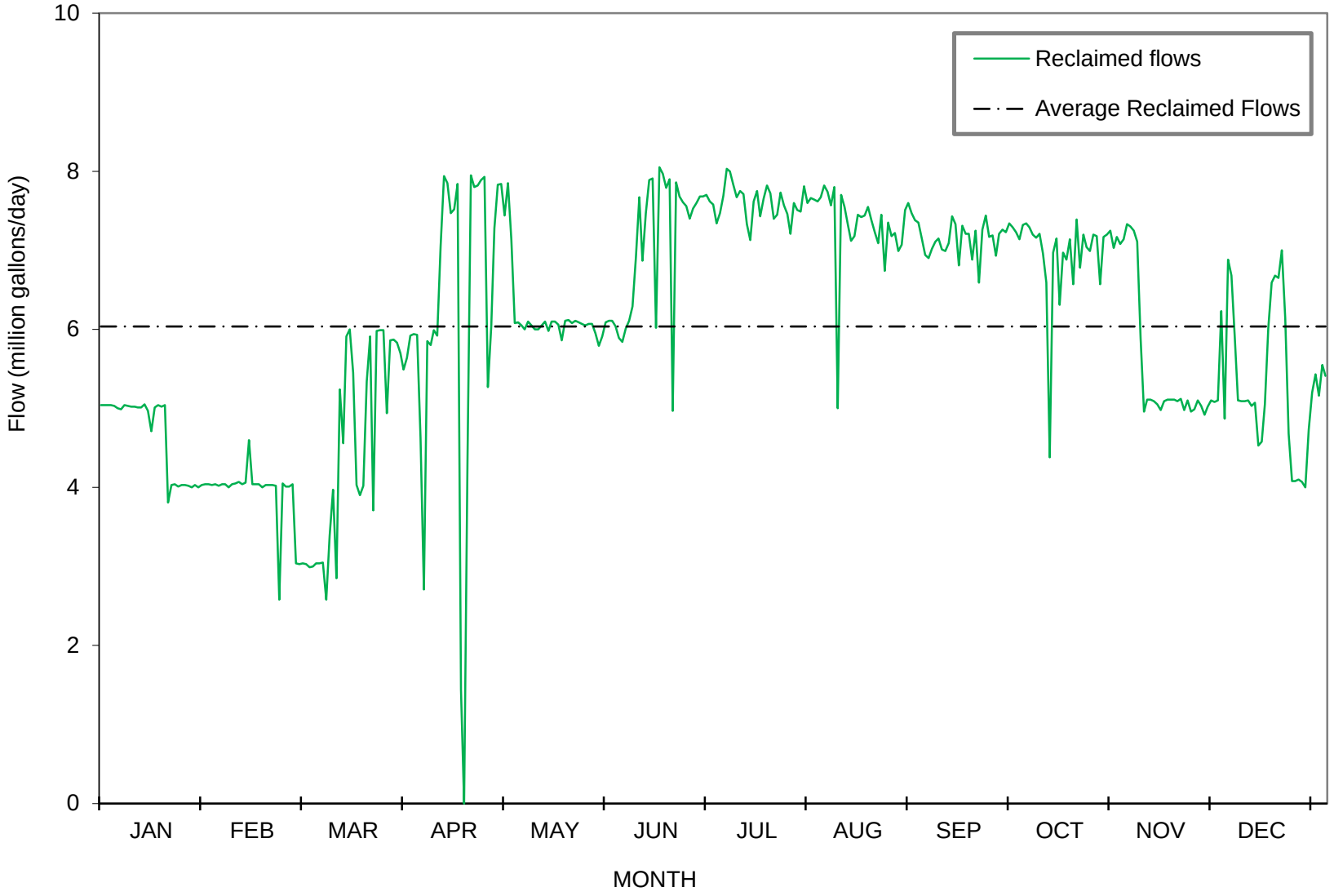


For Boron and Percent Sodium during the month of January no reclaimed water was distributed, and for MBAS on March the quality control not met; value not used in average calculations.

C. Daily Values of Selected Parameters.

Daily values of selected parameters (e.g. TSS, Flow, BOD, etc.) are tabulated and presented graphically; statistical summary information is provided.

South Bay Wastewater Reclamation Plant
2017 Reclaimed Production Flows

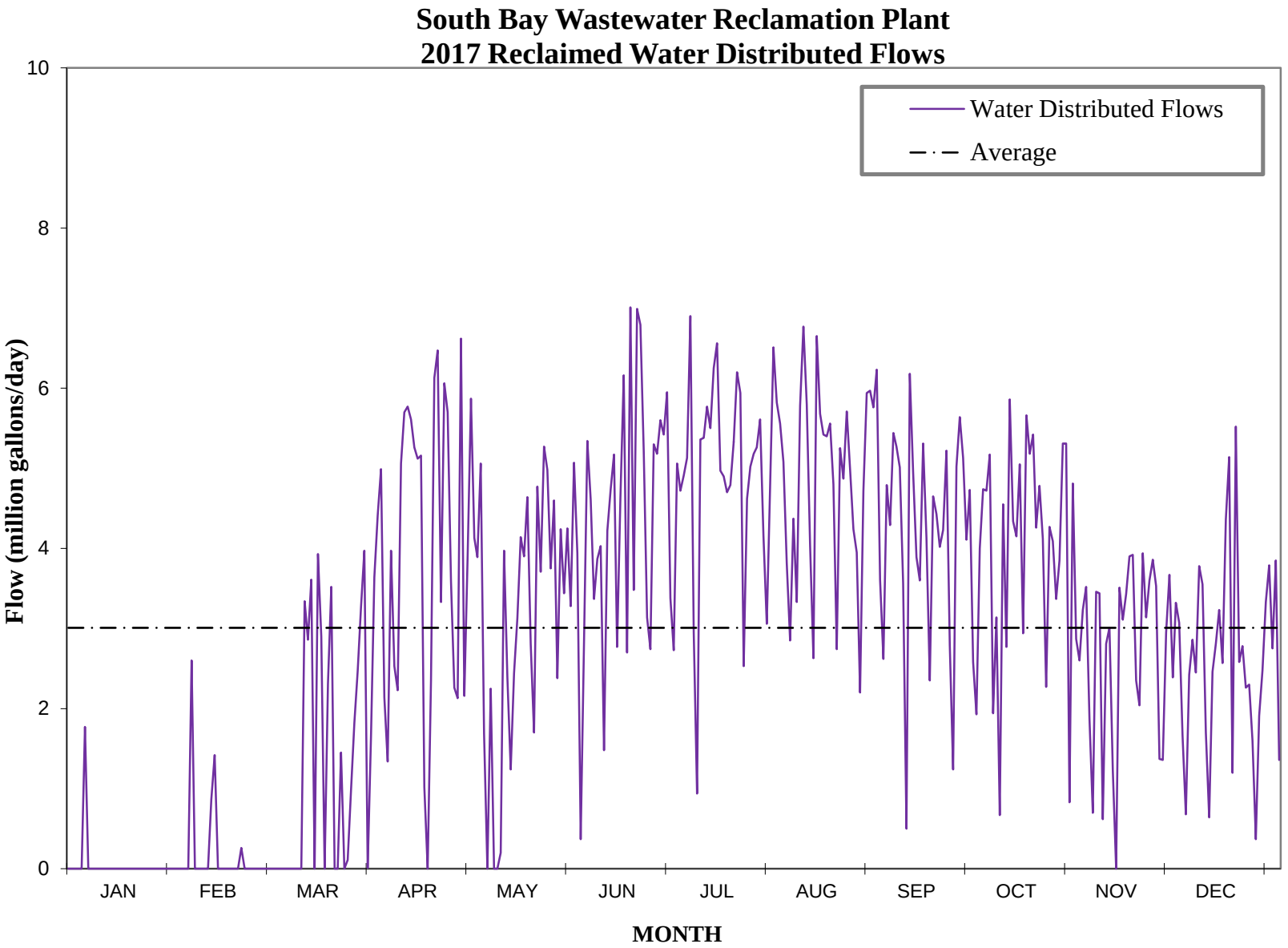


South Bay Water Reclamation Plant
Recycled Produce Flows (mgd) 2017

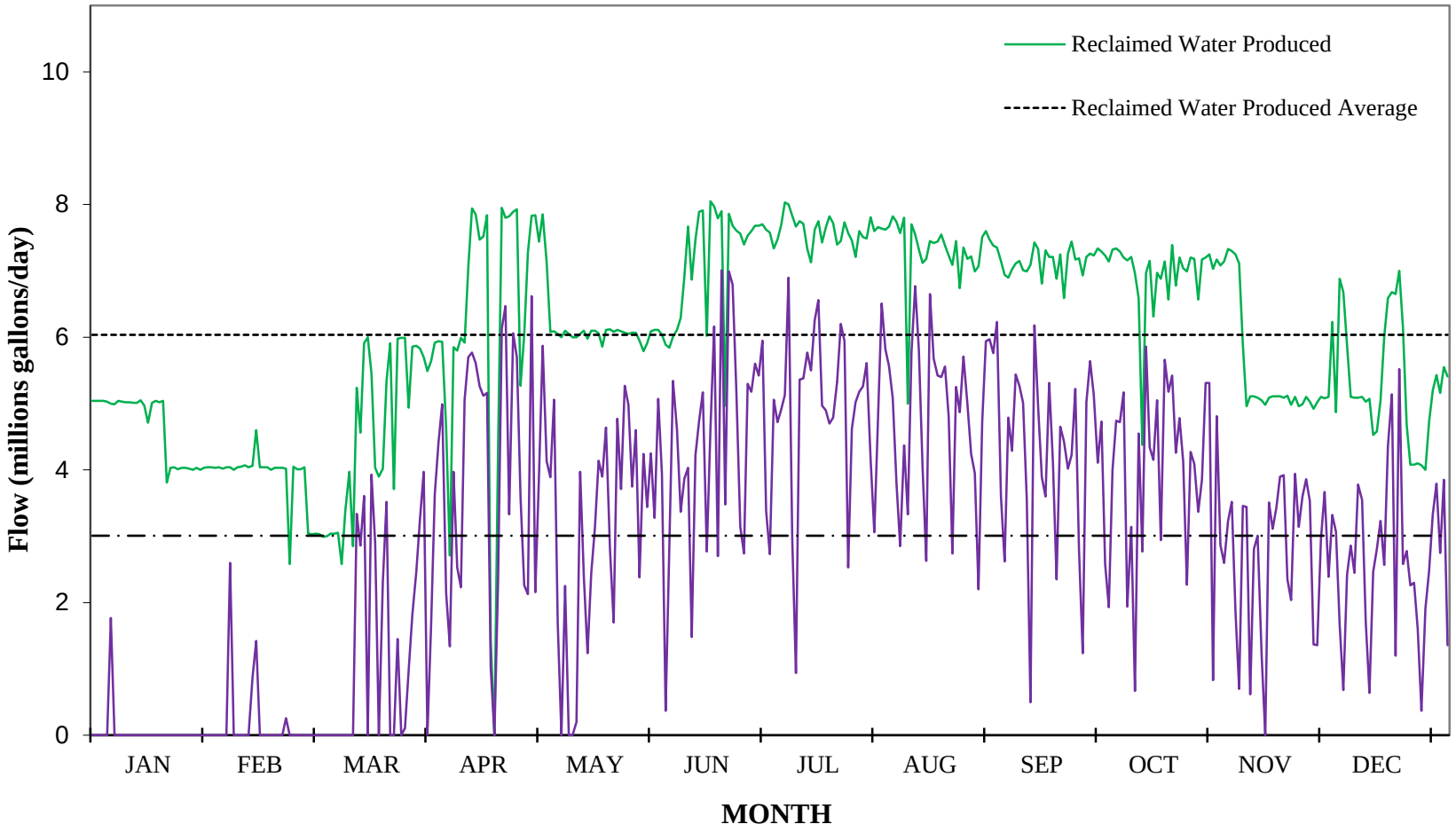
Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	5.04	4.04	3.03	5.49	7.44	6.11	7.62	7.64	7.35	7.14	7.14	4.87	
2	5.04	4.04	3.04	5.64	7.85	6.11	7.58	7.62	7.15	7.32	7.33	6.88	
3	5.04	4.03	3.03	5.92	7.13	6.04	7.34	7.67	6.94	7.34	7.30	6.68	
4	5.04	4.04	2.99	5.94	6.08	5.89	7.47	7.82	6.90	7.29	7.25	5.88	
5	5.03	4.02	3.00	5.93	6.09	5.84	7.69	7.74	7.02	7.20	7.11	5.10	
6	5.00	4.04	3.04	4.63	6.05	6.01	8.03	7.57	7.11	7.16	5.89	5.09	
7	4.99	4.04	3.04	2.71	6.00	6.11	8.00	7.80	7.15	7.21	4.96	5.09	
8	5.04	4.00	3.05	5.85	6.10	6.29	7.83	5.00	7.01	6.96	5.11	5.10	
9	5.03	4.04	2.58	5.80	6.05	6.91	7.67	7.70	6.99	6.59	5.11	5.03	
10	5.02	4.05	3.39	5.99	6.00	7.67	7.75	7.55	7.09	4.38	5.09	5.07	
11	5.02	4.07	3.97	5.92	6.00	6.87	7.71	7.32	7.43	6.97	5.05	4.53	
12	5.01	4.04	2.85	7.05	6.05	7.47	7.33	7.12	7.33	7.15	4.98	4.58	
13	5.01	4.06	5.24	7.94	6.10	7.89	7.13	7.18	6.81	6.31	5.09	5.05	
14	5.05	4.60	4.56	7.85	5.98	7.91	7.62	7.45	7.31	6.97	5.11	6.01	
15	4.97	4.04	5.91	7.47	6.10	6.02	7.75	7.42	7.21	6.88	5.11	6.59	
16	4.71	4.04	6.00	7.52	6.10	8.05	7.43	7.44	7.21	7.14	5.11	6.68	
17	5.01	4.04	5.45	7.84	6.06	7.97	7.65	7.55	6.88	6.57	5.09	6.65	
18	5.04	4.00	4.03	1.44	5.86	7.79	7.82	7.38	7.25	7.39	5.12	7.00	
19	5.02	4.03	3.90	0.00	6.11	7.90	7.72	7.23	6.59	6.78	4.98	6.14	
20	5.04	4.03	4.02	4.36	6.12	4.97	7.40	7.09	7.26	7.20	5.10	4.68	
21	3.81	4.03	5.34	7.95	6.08	7.86	7.45	7.45	7.44	7.04	4.96	4.08	
22	4.03	4.02	5.91	7.80	6.11	7.68	7.73	6.74	7.17	6.99	4.99	4.08	
23	4.04	2.58	3.71	7.82	6.09	7.61	7.57	7.35	7.19	7.20	5.10	4.10	
24	4.01	4.05	5.98	7.89	6.07	7.56	7.46	7.18	6.93	7.18	5.03	4.07	
25	4.03	4.01	5.99	7.93	6.05	7.40	7.21	7.22	7.21	6.57	4.92	4.00	
26	4.03	4.01	5.99	5.27	6.07	7.53	7.60	6.99	7.26	7.17	5.02	4.73	
27	4.02	4.04	4.94	6.04	6.07	7.60	7.51	7.07	7.23	7.20	5.10	5.20	
28	4.00	3.04	5.86	7.28	5.95	7.68	7.49	7.51	7.34	7.25	5.08	5.43	
29	4.03		5.87	7.83	5.79	7.68	7.81	7.60	7.29	7.03	5.10	5.16	
30	4.00		5.83	7.84	5.91	7.70	7.60	7.47	7.23	7.17	6.23	5.55	Annual
31	4.03		5.70		6.09		7.66	7.38		7.08		5.41	Summary
Average	4.65	3.97	4.43	6.16	6.18	7.07	7.60	7.33	7.14	6.96	5.49	5.31	6.04
Minimum	3.81	2.58	2.58	0.00	5.79	4.97	7.13	5.00	6.59	4.38	4.92	4.00	0.00
Maximum	5.05	4.60	6.00	7.95	7.85	8.05	8.03	7.82	7.44	7.39	7.33	7.00	8.05
Total	144	111	137	185	192	212	236	227	214	216	165	165	2203

South Bay Water Reclamation Plant
Recycled Distributed Flows (mgd) 2017

Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	0.00	0.00	0.00	0.01	3.91	3.28	3.38	6.51	6.23	1.93	2.60	3.07	
2	0.00	0.00	0.00	1.66	5.87	5.07	2.73	5.82	3.61	4.00	3.23	1.67	
3	0.00	0.00	0.00	3.64	4.13	3.94	5.06	5.56	2.62	4.74	3.52	0.68	
4	0.00	0.00	0.00	4.41	3.89	0.37	4.72	5.08	4.79	4.72	1.87	2.42	
5	0.00	0.00	0.00	4.99	5.06	2.83	4.91	3.81	4.29	5.17	0.70	2.86	
6	1.77	0.00	0.00	2.14	1.69	5.34	5.13	2.85	5.44	1.94	3.46	2.45	
7	0.00	2.60	0.00	1.34	0.00	4.61	6.90	4.37	5.27	3.14	3.44	3.78	
8	0.00	0.00	0.00	3.97	2.25	3.37	2.96	3.33	5.01	0.67	0.62	3.55	
9	0.00	0.00	0.00	2.53	0.00	3.87	0.94	5.78	3.56	4.55	2.81	1.70	
10	0.00	0.00	0.00	2.23	0.00	4.03	5.36	6.77	0.50	2.77	3.01	0.64	
11	0.00	0.00	0.00	5.06	0.20	1.48	5.38	5.80	6.18	5.86	1.23	2.46	
12	0.00	0.00	0.00	5.70	3.97	4.22	5.77	4.04	4.95	4.34	0.00	2.81	
13	0.00	0.87	3.34	5.77	2.39	4.74	5.50	2.63	3.89	4.15	3.51	3.23	
14	0.00	1.42	2.86	5.61	1.24	5.17	6.25	6.65	3.60	5.05	3.11	2.57	
15	0.00	0.00	3.61	5.26	2.44	2.77	6.56	5.68	5.31	2.94	3.43	4.36	
16	0.00	0.00	0.00	5.12	3.13	4.63	4.97	5.42	4.13	5.66	3.90	5.14	
17	0.00	0.00	3.93	5.16	4.14	6.16	4.90	5.40	2.35	5.18	3.92	1.20	
18	0.00	0.00	2.90	1.02	3.90	2.70	4.70	5.56	4.65	5.42	2.35	5.52	
19	0.00	0.00	0.00	0.00	4.64	7.01	4.79	4.80	4.43	4.26	2.04	2.58	
20	0.00	0.00	2.31	2.35	2.81	3.48	5.33	2.74	4.02	4.78	3.94	2.78	
21	0.00	0.00	3.52	6.13	1.70	6.99	6.20	5.25	4.23	4.12	3.14	2.26	
22	0.00	0.26	0.00	6.47	4.77	6.79	5.94	4.87	5.22	2.27	3.60	2.30	
23	0.00	0.00	0.00	3.33	3.71	5.21	2.53	5.71	2.79	4.27	3.86	1.60	
24	0.00	0.00	1.45	6.06	5.27	3.14	4.62	4.99	1.24	4.09	3.53	0.37	
25	0.00	0.00	0.00	5.70	4.98	2.74	5.02	4.24	5.02	3.37	1.37	1.91	
26	0.00	0.00	0.11	3.59	3.75	5.30	5.18	3.95	5.64	3.85	1.36	2.48	
27	0.00	0.00	0.98	2.26	4.60	5.18	5.26	2.20	5.13	5.31	2.95	3.33	
28	0.00	0.00	1.82	2.13	2.38	5.60	5.61	4.72	4.11	5.31	3.67	3.79	
29	0.00		2.47	6.62	4.24	5.42	4.16	5.94	4.73	0.83	2.39	2.75	
30	0.00		3.27	2.16	3.44	5.95	3.06	5.97	2.58	4.81	3.32	3.85	
31	0.00		3.97		4.25		4.77	5.76		2.87		1.36	Annual Summary
Average	0.06	0.18	1.18	3.75	3.19	4.38	4.79	4.91	4.18	3.95	2.73	2.63	3.01
Minimum	0.00	0.00	0.00	0.00	0.00	0.37	0.94	2.20	0.50	0.67	0.00	0.37	0.00
Maximum	1.77	2.60	3.97	6.62	5.87	7.01	6.90	6.77	6.23	5.86	3.94	5.52	7.01
Total	1.8	5.2	36.5	112.4	98.8	131.4	148.6	152.2	125.5	122.4	81.9	81.5	1098


South Bay Wastewater Reclamation Plant
2017 Reclaimed Water Distributed Flows
Water Distributed Flows
Average
Flow (million gallons/day)
10
8
6
4
2
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
MONTH

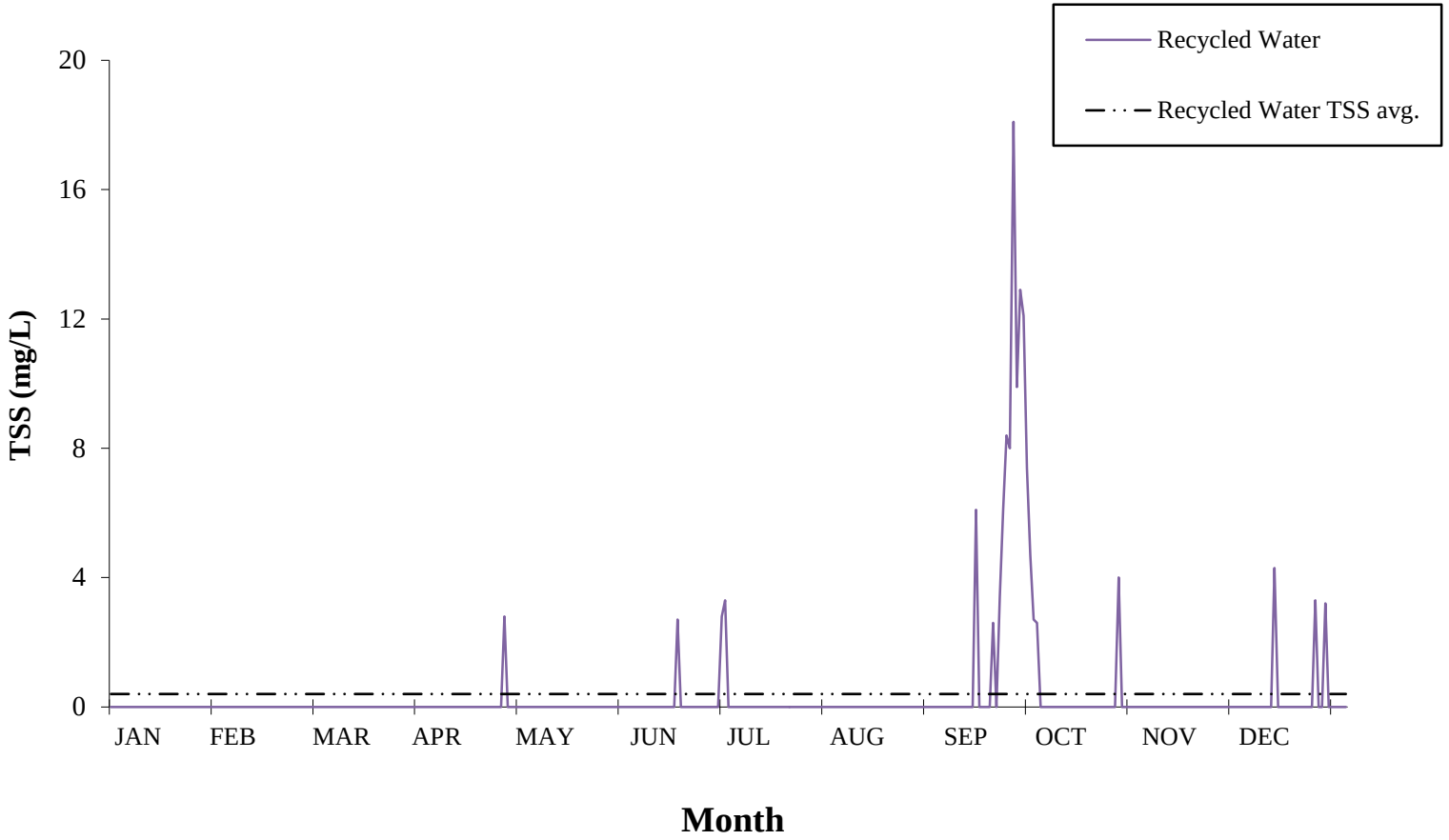
South Bay Wastewater Reclamation Plant
2017 Reclaimed Water Produced and Distributed Flows



This page intentionally left blank.

South Bay Wastewater Reclamation Plant

2017 Total Suspended Solids



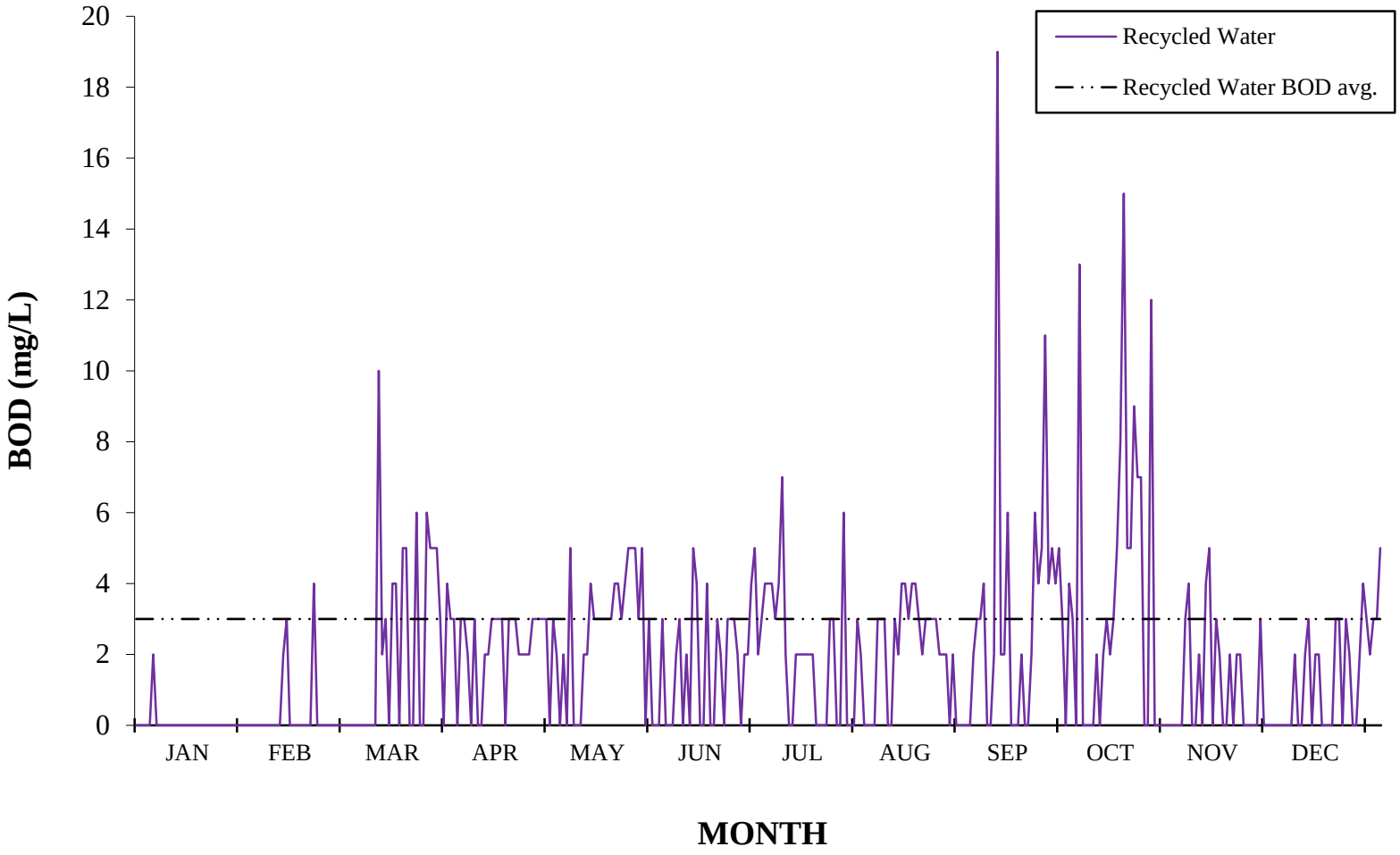
Daily Reclaimed Water TSS Values 2017

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	ND*	ND*	ND*	ND*	ND	ND	3.3	ND	ND	2.6	ND	ND	
2	ND*	ND*	ND*	ND	ND	ND	ND	ND	ND	ND	ND	ND	
3	ND*	ND*	ND*	ND	ND	ND	ND	ND	ND	ND	ND	ND	
4	ND*	ND*	ND*	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5	ND*	ND*	ND*	ND	ND	ND	ND	ND	ND	ND	ND	ND	
6	ND	ND*	ND*	ND	ND	ND	ND	ND	ND	ND	ND	ND	
7	ND*	ND	ND*	ND	3.0*	ND	ND	ND	ND	ND	ND	ND	
8	ND*	ND*	ND*	ND	ND	ND	ND	ND	ND	ND*	ND	ND	
9	ND*	ND*	ND*	ND	3.1*	ND	ND	ND	ND	ND	ND	ND	
10	ND*	ND*	ND*	ND	3.1*	ND	ND	ND	16.4*	ND	ND	4.3	
11	ND*	ND*	ND*	ND	2.6*	ND	ND	ND	ND	ND	ND	ND	
12	ND*	ND*	ND*	ND	ND	ND	ND	ND	ND	ND	ND*	ND	
13	ND*	ND	ND*	ND	ND	ND	ND	ND	6.1	ND	ND	ND	
14	ND*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
15	ND*	ND*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
16	ND*	ND*	ND*	ND	ND	ND	ND	ND	ND	ND	ND	ND	
17	ND*	ND*	ND	ND	ND	2.7	ND	ND	ND	ND	ND	ND	
18	ND*	ND*	ND	ND	ND	ND	ND	ND	2.6	ND	ND	ND	
19	ND*	ND*	ND*	ND*	ND	ND	ND	ND	ND	ND	ND	ND	
20	ND*	ND*	ND	ND	ND	ND	ND	ND	3.4	ND	ND	ND	
21	ND*	ND*	ND	ND	ND	ND	ND	ND	6.1	ND	ND	ND	
22	ND*	ND*	ND*	ND	ND	ND	ND	ND	8.4	ND	ND	3.3	
23	ND*	ND*	2.6*	ND	ND	ND	ND	ND	8.0	ND	ND	ND	
24	ND*	0.6*	ND	ND	ND	ND	ND	ND	18.1	ND	ND	ND	
25	ND*	ND*	ND*	ND	ND	ND	ND	ND	9.9	4.0	ND	3.2	
26	ND*	ND*	ND*	ND	ND	ND	ND	ND	12.9	ND	ND	ND	
27	ND*	ND*	ND	2.8	ND	ND	ND	ND	12.1	ND	ND	ND	
28	ND*	ND*	ND	ND	ND	ND	ND	ND	7.4	ND	ND	ND	
29	ND*		ND	ND	ND	ND	ND	ND	4.7	ND	ND	ND	
30	ND*		ND	ND	ND	2.8	ND	ND	2.7	ND	ND	ND	
31	ND*		ND		ND		ND	ND		ND		ND	Annual Summary
Ave	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.0	3.5	0.2	0.0	0.3	0.4
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max	0.0	0.0	0.0	2.8	0.0	2.8	3.3	0.0	18.1	4.0	0.0	4.3	18.1

*= No reclaimed water distributed or the quality control not met, not used in average.

South Bay Wastewater Reclamation Plant

2017 Biochemical Oxygen Demand



Daily Reclaimed Water BOD Values 2017

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	ND*	ND*	ND*	2*	3	ND	5	2	ND	4	ND	ND	
2	ND*	ND*	2*	4	ND	ND*	2	ND	ND	3	ND	ND*	
3	ND*	ND*	3*	3	3	ND	3	ND	2	ND	ND	ND*	
4	ND*	ND*	3*	3	2	3	4	ND	3	13	3	ND	
5	ND*	ND*	2*	ND	ND	ND	4	ND	3	ND	4	ND	
6	2	ND*	2*	3	2	ND	4	3	4	ND	ND	2	
7	ND*	ND	4*	3	2*	ND	3	3	ND	ND	ND	ND	
8	3*	ND*	2*	2	5	2	4	3	ND	4*	2	ND	
9	ND*	ND*	5*	ND	4*	3	7	ND	2	2	ND	2	
10	ND*	ND*	4*	3	3*	ND	2	ND	19	ND	4	3	
11	ND*	ND*	3*	ND	3*	2	ND	3	2	2	5	ND*	
12	ND*	ND*	3*	ND	2	ND	ND	2	2	3	2*	2	
13	ND*	2	10	2	2	5	2	4	6	2	3	2	
14	>2*	3	2	2	4	4	2	4	ND	3	2	ND	
15	>2*	ND*	3	3	3	ND	2	3	ND*	5	ND	ND	
16	2*	ND*	3*	3	3	ND	2	4	ND	8	ND	ND*	
17	2*	ND*	4	3	3	4	2	4	2	15	2	ND*	
18	ND*	ND*	4	3	3	ND	2	3	ND	5	ND	3	
19	2*	ND*	4*	3*	3	ND	ND	2	ND	5	2	3	
20	ND*	ND*	5	3	3	3	ND	3	2	9	2	ND	
21	ND*	ND*	5	3	4	2	ND	3	6	7	ND	3	
22	ND*	4	3*	3	4	ND	ND	3	4	7	ND	2	
23	ND*	ND*	4*	2	3	3	3	3	5	4*	ND	ND	
24	5*	ND*	6	2	4	3	3	2	11	3*	ND	ND	
25	ND*	3*	3*	2	5	3	ND	2	4	12	ND	2	
26	3*	ND*	3*	2	5	2	ND	2	5	6*	3	4	
27	4*	ND*	6	3	5	ND	6	ND	4	ND*	ND	3	
28	ND*	2*	5	3	3	2	ND	2	5	2*	ND	2	
29	ND*		5	3	5	2	ND	ND	3	5*	ND	3	
30	ND*		5	3	ND	4	ND	ND	ND	ND	ND	3	
31	ND*		3		3		3	ND		ND		5	Annual Summary
Ave	2	2	5	2	3	2	2	2	3	4	1	2	3
Min	2	0	2	0	0	0	0	0	0	0	0	0	0
Max	2	4	10	4	5	5	7	4	19	15	5	5	19

*= No reclaimed water distributed or the quality control not met, not used in average.

D. Total Coliform Data Summaries

Sample Date	T_COLIFORM Avg Value Avg Qualifier	7 day Median (Result)	30 day Arithmetic Mean (Result)
1-Dec-16	2		
2-Dec-16	< 1.8		
3-Dec-16	< 1.8		
4-Dec-16	< 1.8		
5-Dec-16	< 1.8		
6-Dec-16	< 1.8		
7-Dec-16	< 1.8		
8-Dec-16	< 1.8		
9-Dec-16	< 1.8		
10-Dec-16	< 1.8		
11-Dec-16	< 1.8		
12-Dec-16	< 1.8		
13-Dec-16	< 1.8		
14-Dec-16	< 1.8		
15-Dec-16	< 1.8		
16-Dec-16	< 1.8		
17-Dec-16	< 1.8		
18-Dec-16	< 1.8		
19-Dec-16	< 1.8		
20-Dec-16	< 1.8		
21-Dec-16	< 1.8		
22-Dec-16	< 1.8		
23-Dec-16	< 1.8		
24-Dec-16	< 1.8		
25-Dec-16	< 1.8		
26-Dec-16	< 1.8		
27-Dec-16	< 1.8		
28-Dec-16	< 1.8		
29-Dec-16	< 1.8		
30-Dec-16	< 1.8		
31-Dec-16	< 1.8		
1-Jan-17	< 1.8	0.00	0.00
2-Jan-17	< 1.8	0.00	0.00
3-Jan-17	< 1.8	0.00	0.00
4-Jan-17	< 1.8	0.00	0.00
5-Jan-17	< 1.8	0.00	0.00
6-Jan-17	< 1.8	0.00	0.00
7-Jan-17	< 1.8	0.00	0.00
8-Jan-17	< 1.8	0.00	0.00
9-Jan-17	< 1.8	0.00	0.00
10-Jan-17	< 1.8	0.00	0.00

Sample Date	T_COLIFORM Avg Value Avg Qualifier	7 day Median (Result)	30 day Arithmetic Mean (Result)
11-Jan-17	< 1.8	0.00	0.00
12-Jan-17	< 1.8	0.00	0.00
13-Jan-17	< 1.8	0.00	0.00
14-Jan-17	< 1.8	0.00	0.00
15-Jan-17	< 1.8	0.00	0.00
16-Jan-17	< 1.8	0.00	0.00
17-Jan-17	< 1.8	0.00	0.00
18-Jan-17	2	0.00	0.07
19-Jan-17	< 1.8	0.00	0.07
20-Jan-17	< 1.8	0.00	0.07
21-Jan-17	4.5	0.00	0.22
22-Jan-17	< 1.8	0.00	0.22
23-Jan-17	< 1.8	0.00	0.22
24-Jan-17	< 1.8	0.00	0.22
25-Jan-17	< 1.8	0.00	0.22
26-Jan-17	< 1.8	0.00	0.22
27-Jan-17	< 1.8	0.00	0.22
28-Jan-17	< 1.8	0.00	0.22
29-Jan-17	< 1.8	0.00	0.22
30-Jan-17	< 1.8	0.00	0.22
31-Jan-17	< 1.8	0.00	0.22
1-Feb-17	< 1.8	0.00	0.22
2-Feb-17	< 1.8	0.00	0.22
3-Feb-17	< 1.8	0.00	0.22
4-Feb-17	< 1.8	0.00	0.22
5-Feb-17	< 1.8	0.00	0.22
6-Feb-17	< 1.8	0.00	0.22
7-Feb-17	< 1.8	0.00	0.22
8-Feb-17	< 1.8	0.00	0.22
9-Feb-17	< 1.8	0.00	0.22
10-Feb-17	< 1.8	0.00	0.22
11-Feb-17	< 1.8	0.00	0.22
12-Feb-17	< 1.8	0.00	0.22
13-Feb-17	< 1.8	0.00	0.22
14-Feb-17	< 1.8	0.00	0.22
15-Feb-17	No Sample		
16-Feb-17	< 1.8	0.00	0.22
17-Feb-17	< 1.8	0.00	0.22
18-Feb-17	2	0.00	0.22
19-Feb-17	< 1.8	0.00	0.22
20-Feb-17	< 1.8	0.00	0.22

Sample Date	T_COLIFORM Avg Value Avg Qualifier	7 day Median (Result)	30 day Arithmetic Mean (Result)
21-Feb-17	< 1.8	0.00	0.07
22-Feb-17	< 1.8	0.00	0.07
23-Feb-17	UV channel cleaning		
24-Feb-17	< 1.8	0.00	0.07
25-Feb-17	< 1.8	0.00	0.07
26-Feb-17	< 1.8	0.00	0.07
27-Feb-17	< 1.8	0.00	0.07
28-Feb-17	Plant is not producing reclaimed water		
1-Mar-17	Reclaim water not needed per Plant Operator		
2-Mar-17	Plant not producing reclaimed water		
3-Mar-17	SB not sampled; system locked down		
4-Mar-17	< 1.8	0.00	0.07
5-Mar-17	< 1.8	0.00	0.07
6-Mar-17	Weekend reclaim water is not needed by Otay		
7-Mar-17	No sample-reclaim is not needed by Otay		
8-Mar-17	No sample- reclaim water is not needed by Otay.		
9-Mar-17	UV LIGHT CLEANING		
10-Mar-17	UV shutdown		
11-Mar-17	Plant is not producing reclaimed water		
12-Mar-17	Plant is not producing reclaimed water		
13-Mar-17	< 1.8	0.00	0.07
14-Mar-17	< 1.8	0.00	0.07
15-Mar-17	< 1.8	0.00	0.07
16-Mar-17	< 1.8	0.00	0.07
17-Mar-17	< 1.8	0.00	0.07
18-Mar-17	< 1.8	0.00	0.07
19-Mar-17	< 1.8	0.00	0.07
20-Mar-17	< 1.8	0.00	0.07
21-Mar-17	< 1.8	0.00	0.07
22-Mar-17	< 1.8	0.00	0.07
23-Mar-17	UV channel is down due to maintenance		
24-Mar-17	< 1.8	0.00	0.07
25-Mar-17	< 1.8	0.00	0.07
26-Mar-17	< 1.8	0.00	0.07
27-Mar-17	< 1.8	0.00	0.07
28-Mar-17	< 1.8	0.00	0.07
29-Mar-17	< 1.8	0.00	0.07
30-Mar-17	< 1.8	0.00	0.07
31-Mar-17	< 1.8	0.00	0.07
1-Apr-17	< 1.8	0.00	0.07
2-Apr-17	< 1.8	0.00	0.00

Sample Date	T_COLIFORM Avg Value Avg Qualifier	7 day Median (Result)	30 day Arithmetic Mean (Result)
3-Apr-17	< 1.8	0.00	0.00
4-Apr-17	< 1.8	0.00	0.00
5-Apr-17	< 1.8	0.00	0.00
6-Apr-17	4.5	0.00	0.15
7-Apr-17	49	0.00	1.78
8-Apr-17	< 1.8	0.00	1.78
9-Apr-17	< 1.8	0.00	1.78
10-Apr-17	< 1.8	0.00	1.78
11-Apr-17	< 1.8	0.00	1.78
12-Apr-17	< 1.8	0.00	1.78
13-Apr-17	< 1.8	0.00	1.78
14-Apr-17	< 1.8	0.00	1.78
15-Apr-17	< 1.8	0.00	1.78
16-Apr-17	< 1.8	0.00	1.78
17-Apr-17	< 1.8	0.00	1.78
18-Apr-17	2	0.00	1.85
19-Apr-17	NO SAMPLE - UV shutdown		
20-Apr-17	< 1.8	0.00	1.85
21-Apr-17	< 1.8	0.00	1.85
22-Apr-17	< 1.8	0.00	1.85
23-Apr-17	< 1.8	0.00	1.85
24-Apr-17	< 1.8	0.00	1.85
25-Apr-17	< 1.8	0.00	1.85
26-Apr-17	< 1.8	0.00	1.85
27-Apr-17	< 1.8	0.00	1.85
28-Apr-17	2	0.00	1.92
29-Apr-17	< 1.8	0.00	1.92
30-Apr-17	33	0.00	3.02
1-May-17	< 1.8	0.00	3.02
2-May-17	< 1.8	0.00	3.02
3-May-17	< 1.8	0.00	3.02
4-May-17	< 1.8	0.00	3.02
5-May-17	< 1.8	0.00	3.02
6-May-17	< 1.8	0.00	3.02
7-May-17	< 1.8	0.00	2.87
8-May-17	< 1.8	0.00	1.23
9-May-17	< 1.8	0.00	1.23
10-May-17	< 1.8	0.00	1.23
11-May-17	< 1.8	0.00	1.23
12-May-17	< 1.8	0.00	1.23
13-May-17	< 1.8	0.00	1.23

Sample Date	T_COLIFORM Avg Value Avg Qualifier	7 day Median (Result)	30 day Arithmetic Mean (Result)
14-May-17	< 1.8	0.00	1.23
15-May-17	< 1.8	0.00	1.23
16-May-17	< 1.8	0.00	1.23
17-May-17	< 1.8	0.00	1.23
18-May-17	< 1.8	0.00	1.23
19-May-17	< 1.8	0.00	1.17
20-May-17	< 1.8	0.00	1.17
21-May-17	< 1.8	0.00	1.17
22-May-17	< 1.8	0.00	1.17
23-May-17	< 1.8	0.00	1.17
24-May-17	< 1.8	0.00	1.17
25-May-17	< 1.8	0.00	1.17
26-May-17	< 1.8	0.00	1.17
27-May-17	< 1.8	0.00	1.17
28-May-17	< 1.8	0.00	1.10
29-May-17	< 1.8	0.00	1.10
30-May-17	< 1.8	0.00	0.00
31-May-17	< 1.8	0.00	0.00
1-Jun-17	< 1.8	0.00	0.00
2-Jun-17	< 1.8	0.00	0.00
3-Jun-17	< 1.8	0.00	0.00
4-Jun-17	< 1.8	0.00	0.00
5-Jun-17	< 1.8	0.00	0.00
6-Jun-17	< 1.8	0.00	0.00
7-Jun-17	< 1.8	0.00	0.00
8-Jun-17	< 1.8	0.00	0.00
9-Jun-17	< 1.8	0.00	0.00
10-Jun-17	< 1.8	0.00	0.00
11-Jun-17	< 1.8	0.00	0.00
12-Jun-17	< 1.8	0.00	0.00
13-Jun-17	< 1.8	0.00	0.00
14-Jun-17	< 1.8	0.00	0.00
15-Jun-17	< 1.8	0.00	0.00
16-Jun-17	< 1.8	0.00	0.00
17-Jun-17	< 1.8	0.00	0.00
18-Jun-17	< 1.8	0.00	0.00
19-Jun-17	< 1.8	0.00	0.00
20-Jun-17	< 1.8	0.00	0.00
21-Jun-17	< 1.8	0.00	0.00
22-Jun-17	< 1.8	0.00	0.00
23-Jun-17	< 1.8	0.00	0.00

Sample Date	T_COLIFORM Avg Value Avg Qualifier	7 day Median (Result)	30 day Arithmetic Mean (Result)
24-Jun-17	< 1.8	0.00	0.00
25-Jun-17	< 1.8	0.00	0.00
26-Jun-17	< 1.8	0.00	0.00
27-Jun-17	< 1.8	0.00	0.00
28-Jun-17	< 1.8	0.00	0.00
29-Jun-17	< 1.8	0.00	0.00
30-Jun-17	< 1.8	0.00	0.00
1-Jul-17	< 1.8	0.00	0.00
2-Jul-17	< 1.8	0.00	0.00
3-Jul-17	< 1.8	0.00	0.00
4-Jul-17	< 1.8	0.00	0.00
5-Jul-17	2	0.00	0.07
6-Jul-17	< 1.8	0.00	0.07
7-Jul-17	< 1.8	0.00	0.07
8-Jul-17	< 1.8	0.00	0.07
9-Jul-17	< 1.8	0.00	0.07
10-Jul-17	< 1.8	0.00	0.07
11-Jul-17	< 1.8	0.00	0.07
12-Jul-17	< 1.8	0.00	0.07
13-Jul-17	< 1.8	0.00	0.07
14-Jul-17	< 1.8	0.00	0.07
15-Jul-17	< 1.8	0.00	0.07
16-Jul-17	< 1.8	0.00	0.07
17-Jul-17	< 1.8	0.00	0.07
18-Jul-17	< 1.8	0.00	0.07
19-Jul-17	< 1.8	0.00	0.07
20-Jul-17	< 1.8	0.00	0.07
21-Jul-17	< 1.8	0.00	0.07
22-Jul-17	< 1.8	0.00	0.07
23-Jul-17	< 1.8	0.00	0.07
24-Jul-17	< 1.8	0.00	0.07
25-Jul-17	< 1.8	0.00	0.07
26-Jul-17	< 1.8	0.00	0.07
27-Jul-17	< 1.8	0.00	0.07
28-Jul-17	< 1.8	0.00	0.07
29-Jul-17	< 1.8	0.00	0.07
30-Jul-17	< 1.8	0.00	0.07
31-Jul-17	< 1.8	0.00	0.07
1-Aug-17	< 1.8	0.00	0.07
2-Aug-17	< 1.8	0.00	0.07
3-Aug-17	< 1.8	0.00	0.07

Sample Date	T_COLIFORM Avg Value Avg Qualifier	7 day Median (Result)	30 day Arithmetic Mean (Result)
4-Aug-17	< 1.8	0.00	0.00
5-Aug-17	< 1.8	0.00	0.00
6-Aug-17	< 1.8	0.00	0.00
7-Aug-17	2	0.00	0.07
8-Aug-17	< 1.8	0.00	0.07
9-Aug-17	< 1.8	0.00	0.07
10-Aug-17	< 1.8	0.00	0.07
11-Aug-17	< 1.8	0.00	0.07
12-Aug-17	< 1.8	0.00	0.07
13-Aug-17	< 1.8	0.00	0.07
14-Aug-17	< 1.8	0.00	0.07
15-Aug-17	2	0.00	0.13
16-Aug-17	< 1.8	0.00	0.13
17-Aug-17	< 1.8	0.00	0.13
18-Aug-17	< 1.8	0.00	0.13
19-Aug-17	< 1.8	0.00	0.13
20-Aug-17	< 1.8	0.00	0.13
21-Aug-17	< 1.8	0.00	0.13
22-Aug-17	< 1.8	0.00	0.13
23-Aug-17	< 1.8	0.00	0.13
24-Aug-17	< 1.8	0.00	0.13
25-Aug-17	< 1.8	0.00	0.13
26-Aug-17	< 1.8	0.00	0.13
27-Aug-17	< 1.8	0.00	0.13
28-Aug-17	< 1.8	0.00	0.13
29-Aug-17	< 1.8	0.00	0.13
30-Aug-17	< 1.8	0.00	0.13
31-Aug-17	< 1.8	0.00	0.13
1-Sep-17	< 1.8	0.00	0.13
2-Sep-17	< 1.8	0.00	0.13
3-Sep-17	< 1.8	0.00	0.13
4-Sep-17	< 1.8	0.00	0.13
5-Sep-17	< 1.8	0.00	0.13
6-Sep-17	< 1.8	0.00	0.07
7-Sep-17	< 1.8	0.00	0.07
8-Sep-17	< 1.8	0.00	0.07
9-Sep-17	< 1.8	0.00	0.07
10-Sep-17	< 1.8	0.00	0.07
11-Sep-17	< 1.8	0.00	0.07
12-Sep-17	< 1.8	0.00	0.07
13-Sep-17	< 1.8	0.00	0.07

Sample Date	T_COLIFORM Avg Value Avg Qualifier	7 day Median (Result)	30 day Arithmetic Mean (Result)
14-Sep-17	< 1.8	0.00	0.00
15-Sep-17	< 1.8	0.00	0.00
16-Sep-17	< 1.8	0.00	0.00
17-Sep-17	< 1.8	0.00	0.00
18-Sep-17	< 1.8	0.00	0.00
19-Sep-17	< 1.8	0.00	0.00
20-Sep-17	< 1.8	0.00	0.00
21-Sep-17	< 1.8	0.00	0.00
22-Sep-17	< 1.8	0.00	0.00
23-Sep-17	< 1.8	0.00	0.00
24-Sep-17	< 1.8	0.00	0.00
25-Sep-17	< 1.8	0.00	0.00
26-Sep-17	< 1.8	0.00	0.00
27-Sep-17	< 1.8	0.00	0.00
28-Sep-17	< 1.8	0.00	0.00
29-Sep-17	2	0.00	0.07
30-Sep-17	< 1.8	0.00	0.07
1-Oct-17	< 1.8	0.00	0.07
2-Oct-17	< 1.8	0.00	0.07
3-Oct-17	< 1.8	0.00	0.07
4-Oct-17	< 1.8	0.00	0.07
5-Oct-17	< 1.8	0.00	0.07
6-Oct-17	< 1.8	0.00	0.07
7-Oct-17	< 1.8	0.00	0.07
8-Oct-17	< 1.8	0.00	0.07
9-Oct-17	< 1.8	0.00	0.07
10-Oct-17	< 1.8	0.00	0.07
11-Oct-17	< 1.8	0.00	0.07
12-Oct-17	< 1.8	0.00	0.07
13-Oct-17	< 1.8	0.00	0.07
14-Oct-17	< 1.8	0.00	0.07
15-Oct-17	< 1.8	0.00	0.07
16-Oct-17	< 1.8	0.00	0.07
17-Oct-17	< 1.8	0.00	0.07
18-Oct-17	< 1.8	0.00	0.07
19-Oct-17	< 1.8	0.00	0.07
20-Oct-17	< 1.8	0.00	0.07
21-Oct-17	< 1.8	0.00	0.07
22-Oct-17	< 1.8	0.00	0.07
23-Oct-17	< 1.8	0.00	0.07
24-Oct-17	< 1.8	0.00	0.07

Sample Date	T_COLIFORM Avg Value Avg Qualifier	7 day Median (Result)	30 day Arithmetic Mean (Result)
25-Oct-17	< 1.8	0.00	0.07
26-Oct-17	2	0.00	0.13
27-Oct-17	< 1.8	0.00	0.13
28-Oct-17	< 1.8	0.00	0.13
29-Oct-17	< 1.8	0.00	0.07
30-Oct-17	< 1.8	0.00	0.07
31-Oct-17	< 1.8	0.00	0.07
1-Nov-17	< 1.8	0.00	0.07
2-Nov-17	< 1.8	0.00	0.07
3-Nov-17	< 1.8	0.00	0.07
4-Nov-17	< 1.8	0.00	0.07
5-Nov-17	< 1.8	0.00	0.07
6-Nov-17	< 1.8	0.00	0.07
7-Nov-17	4.5	0.00	0.22
8-Nov-17	< 1.8	0.00	0.22
9-Nov-17	< 1.8	0.00	0.22
10-Nov-17	< 1.8	0.00	0.22
11-Nov-17	< 1.8	0.00	0.22
12-Nov-17	< 1.8	0.00	0.22
13-Nov-17	< 1.8	0.00	0.22
14-Nov-17	< 1.8	0.00	0.22
15-Nov-17	< 1.8	0.00	0.22
16-Nov-17	< 1.8	0.00	0.22
17-Nov-17	< 1.8	0.00	0.22
18-Nov-17	< 1.8	0.00	0.22
19-Nov-17	< 1.8	0.00	0.22
20-Nov-17	< 1.8	0.00	0.22
21-Nov-17	< 1.8	0.00	0.22
22-Nov-17	< 1.8	0.00	0.22
23-Nov-17	< 1.8	0.00	0.22
24-Nov-17	< 1.8	0.00	0.22
25-Nov-17	< 1.8	0.00	0.15
26-Nov-17	< 1.8	0.00	0.15
27-Nov-17	< 1.8	0.00	0.15
28-Nov-17	< 1.8	0.00	0.15
29-Nov-17	< 1.8	0.00	0.15
30-Nov-17	< 1.8	0.00	0.15
1-Dec-17	< 1.8	0.00	0.15
2-Dec-17	49	0.00	1.78
3-Dec-17	< 1.8	0.00	1.78
4-Dec-17	< 1.8	0.00	1.78

Sample Date	T_COLIFORM Avg Value Avg Qualifier	7 day Median (Result)	30 day Arithmetic Mean (Result)
5-Dec-17	< 1.8	0.00	1.78
6-Dec-17	< 1.8	0.00	1.78
7-Dec-17	< 1.8	0.00	1.63
8-Dec-17	< 1.8	0.00	1.63
9-Dec-17	< 1.8	0.00	1.63
10-Dec-17	< 1.8	0.00	1.63
11-Dec-17	< 1.8	0.00	1.63
12-Dec-17	< 1.8	0.00	1.63
13-Dec-17	< 1.8	0.00	1.63
14-Dec-17	< 1.8	0.00	1.63
15-Dec-17	< 1.8	0.00	1.63
16-Dec-17	< 1.8	0.00	1.63
17-Dec-17	< 1.8	0.00	1.63
18-Dec-17	< 1.8	0.00	1.63
19-Dec-17	< 1.8	0.00	1.63
20-Dec-17	< 1.8	0.00	1.63
21-Dec-17	< 1.8	0.00	1.63
22-Dec-17	< 1.8	0.00	1.63
23-Dec-17	< 1.8	0.00	1.63
24-Dec-17	< 1.8	0.00	1.63
25-Dec-17	< 1.8	0.00	1.63
26-Dec-17	< 1.8	0.00	1.63
27-Dec-17	< 1.8	0.00	1.63
28-Dec-17	< 1.8	0.00	1.63
29-Dec-17	< 1.8	0.00	1.63
30-Dec-17	< 1.8	0.00	1.63
31-Dec-17	< 1.8	0.00	1.63

E. UV Performance 2017

UV PERFORMANCE REPORT
CY 2017
Monthly Averages

Month	UV TRANSMITTANCE pct	UV DOSE U	UV BANK #1 POWER pct	UV BANK #2 POWER pct	UV BANK #3 POWER pct	UV BANK #4 POWER pct
Jan 2017	62.59	189.32	29.71	31.65	26.90	36.71
Feb 2017	64.54	184.79	31.93	23.64	24.29	33.96
Mar 2017	58.01	176.45	21.87	25.87	19.97	24.26
Apr 2017	57.34	167.57	18.63	30.13	18.33	30.13
May 2017	60.73	187.07	36.42	36.03	33.13	39.77
Jun 2017	58.94	178.63	33.50	34.67	39.73	37.93
Jul 2017	62.44	185.21	33.48	34.90	34.90	33.03
Aug 2017	61.01	184.52	24.42	23.77	25.48	24.03
Sep 2017	62.68	185.41	31.27	31.47	31.47	29.03
Oct 2017	61.27	185.03	32.26	33.87	29.42	31.29
Nov 2017	61.54	183.76	36.97	35.53	31.63	37.93
Dec 2017	60.11	185.17	21.68	18.48	21.42	23.03
Average	60.93	182.74	29.35	30.00	28.06	31.76

VIII. Other Required Information.

A. Notes on Specific Analysis
B. Report of Operator Certification.

This page intentionally left blank

A. Notes on Specific Analyses:

1. It should be noted that some of the reference methods are equivalent. The organic priority pollutant analyses listed in E.P.A.'s Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846 (ref. c) are equivalent to the methods E.P.A. prescribes for water in Methods for Chemical Analysis for Water and Wastes, (ref.a). Specifically wastewater methods 3510 and 8270 (ref.d) together are the same as the water method 625 (ref.a), and Method 8260B (ref. c) is equivalent to Method 624 (ref.a). Methods 3550 and 8270 together are equivalent to the E.P.A. Contract Laboratory Program's (ref. aa) method for ultrasonication and gas chromatograph-mass spectrographic analysis. The E.P.A.'s metals analyses for water (ref.a) generally just refers to the procedure in Standard Methods (ref. b, bb).

B. Report of Operator Certification.

Operator Certifications:

The following lists all Wastewater Treatment Plant Operators working for the Operating Units of the Public Utilities Department and their California State certification status as of May 2017. Name, Classification, Certification Grade, Certification Number, and expiration date are shown for each operator.

South Bay Wastewater Reclamation Plant

OPERATOR CERTIFICATIONS

NAME	CERTIFICATION GRADE	EXPIRATION
ERNESTO MOLAS	GRADE V 7227	12/31/2017
EILEEN MCNEIL	GRADE V 28965	4/29/2020
EDDY MATA	GRADE III 7027	7/13/2020
TERESA A. GARDNER	GRADE III 10657	12/31/2017
WILLIAM L. MERCADO	GRADE III 41838	9/23/2020
ALBERT J. JOHNSON	GRADE III 9638	6/30/2018
HERBERT A. DECATUR	GRADE III 28880	6/30/2020
NOEMI GONZALEZ-BUENO	GRADE III 41833	7/13/2020
DOUGLAS D. EVANS SR.	GRADE II 9844	6/30/2018
ROMEO C. MILLAN JR.	GRADE II 9846	6/30/2018
GABRIEL DURESSEAU	GRADE II 28294	6/30/2018

IX. Appendices

A. Terms and Abbreviations used in this Report
B. Methods of Analysis
C. Frequency of Analysis and Type of Sample
D. Laboratories Contributing Results used in this report
E. Staff Contributing to this Report

This page left intentionally blank

A. Terms and Abbreviations used in this Report

Along with standard abbreviations the following is a list of local/uncommon abbreviations and terms for the readers' reference.

PLANT TERMS

U.S.EPA	- United States Environmental Protection Agency
NPDES	- National Pollutant Discharge Elimination System
WTP	- Wastewater Treatment Plant
WRP	- Water Reclamation Plant
PLWTP	- Pt. Loma Wastewater Treatment Plant
PLR	- Point Loma Raw (influent to the plant)
PLE	- Point Loma Effluent (effluent from the plant)
N-1-P	- North Digester Number 1, Primary, Point Loma
N-2-P	- North Digester Number 2, Primary, Point Loma
C-1-P	- Central Digester Number 1, Primary, Point Loma
C-2-P	- Central Digester Number 2, Primary, Point Loma
S-1-P	- South Digester Number 1, Primary, Point Loma
S-2-P	- South Digester Number 2, Primary, Point Loma
Dig 7	- Digester Number 7, Primary, Point Loma
Dig 8	- Digester Number 8, Primary, Point Loma
DIG COMP	- Digested Biosolids Composite; a composite of grabs taken from each of the in-service digesters
RAW COMP	- A Composite of Raw Sludge taken over the preceding 24 hours
NCWRP	- North City Water Reclamation Plant
N01-PS_INF	- The plant primary Influent from Pump Station 64
N01-PEN	- The plant primary Influent from the Penasquitos pump station.
N30-DFE	- Disinfected Final Effluent
N34-REC WATER	- Reclaimed Water.
N10-PSP COMB	- raw sludge
N15-WAS LCP	- Waste Activated Sludge – low capacity pumps
SBOO	- South Bay Ocean Outfall or South Bay Outfall
SB_INF_02	- The plant Influent
SB_OUTFALL_01	- The plant discharge to ocean effluent
SB_ITP_COMB_EFF	-The plant discharge to ocean and International Waste Treatment Plant combined effluents
SB_PRI_EFF_01	- The plant primary Influent
SB_SEC_EFF_00	-The plant secondary Influent
SB_REC_WATER_34	- Reclaimed Water
SB_RSL_10	- The plant primary sedimentation tank to raw sludge line
MBC	- Metro Biosolids Center
MBCDEWCN	- Metro Biosolids Center Dewatering Centrifuges; typically the dewatered biosolids from these
MBC_COMBCN	- MBC Combined Centrate; the centrate from all the dewatering centrifuges. (The return stream from MBC to the sewer system.)
MBC_NC_DSL	- North City to Metropolitan Biosolids Center (MBC) Digested Sludge Line
Dig 1	- MBC Digester number 1
Dig 2	- MBC Digester number 2
Dig 3	- MBC Digester number 3
Biosolids	- In most cases Biosolids and digested (a processed) Sludge is synonymous
Field Replicate	- Separate samples collected at approximately the same time from the same sample site

UNITS

mg/L .....*milligrams per liter*
ug/L .....micrograms per liter = 0.001 mg/L
ng/L ..... nanograms per liter = 0.001 ug/L
mg/Kg ..... milligrams per kilogram
ug/Kg..... micrograms per kilogram
ng/Kg..... nanograms per kilogram
pg/L ..... picograms per liter
pg/Kg.....picograms per kilogram
pc/L or pCi/L.... pico curies per liter
TU ..... toxicity units
ntu ..... nephelometric turbidity units
^{o}C.....degrees Celsius = degrees centigrade
MGD/mgd ..... million gallons per day
umhos/cm. ….....micromhos per centimeter
uS .....microsiemens = umhos
mils/100 mL .....millions per 100 milliliters
nd.....not detected
NA.....not analyzed (when in a data column)
NR.....not required
NS .....not sampled
LA .....lab accident

CHEMICAL TERMS & ABBREVIATIONS:

AA.....Atomic Absorption Spectroscopy
BOD.....Biochemical Oxygen Demand
CN^{-}.....Cyanide
COD.....Chemical Oxygen Demand
Cr^{6+}.....Hexavalent Chromium
D.O.....Dissolved Oxygen
DDD.....Dichlorodiphenyldichloroethane
a.k.a. TDE-tetrachlorodiphenylethane)
DDE .....Dichlorodiphenyldichloroethylene
DDT .....Dichlorodiphenyltrichloroethane
$FeCl_3$ .....Ferric Chloride
G&O.....Grease and Oil
GC.....Gas chromatography.
GC-ECD.....-Electron Capture Detector.
GC-FID .....-Flame Ionization Detector.
GC-FPD .....-Flame Photometric Detector.
GC-MS.....-Mass Spectroscopy.
H_2S .....Hydrogen Sulfide
Hg.....Mercury
IC .....Ion Chromatography
Induct .....ICP-AES Inductively Coupled Plasma-Atomic Emission Spectroscopy
MDL.....Method Detection Limit
MSD.....Mass Spectroscopy Detector
NH_3 .....Ammonia
NH_3-N .....Ammonia Nitrogen
NH_4^{+} .....Ammonium ion
NO_3^{-}.....Nitrate
PAD .....Pulsed Amperometric Detector
PCB.....Polychlorinated Biphenyls
PO_4^{3-}.....Phosphate
SO_4^{2-} .....Sulfate
SS.....Suspended Solids
TBT.....Tributyl tin
TCH .....Total Chlorinated Hydrocarbons (i.e. chlorinated pesticides & PCB's)
TCLP.. Toxicity Characteristic Leaching Procedure
TDS.....Total Dissolved Solids
TQ.....Triple Quad
TS.....Total Solids
TVS.....Total Volatile Solids
VSS .....Volatile Suspended Solids

B. Methods of Analysis

WASTEWATER INFLUENT and EFFLUENT (General)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Alkalinity	Selected Endpoint Titration	Mettler DL-21 & 25 Titrator Orion 950 Mettler DL-15	Mettler DL-21 & 25 Titrator Orion 950 Mettler DL-15	SM 2320 B-1997
Ammonia Nitrogen	Distillation and Titration	Buchi Distillation Unit K-314, B-324, K-350 Orion 950 pH Meter Mettler DL25 titrator Mettler DL15 titrator Orion 250A	Buchi Distillation Unit K-314 & K-350 Orion 950 pH Meter/Titrator	SM 4500-NH3 B,C-1997
Biochemical Oxygen Demand (BOD-5 Day)	Dissolved Oxygen Meter with Dissolved Oxygen Probe	YSI-5000 DO Meter YSI-5100 DO Meter YSI 59 DO Meter (5905 Probe)	YSI-5000 DO Meter YSI-5100 DO Meter YSI 59 DO Meter (5905 Probe)	SM 5210 B-2001
Biochemical Oxygen Demand (BOD-Soluble)	Dissolved Oxygen Probe	YSI-5000 DO Meter YSI-5100 DO Meter YSI 59 DO Meter (5905 Probe)	YSI-5000 DO Meter YSI-5100 DO Meter YSI 59 DO Meter (5905 Probe) YSI Probe 5010	SM 5210 B-2001
Chemical Oxygen Demand (COD)	Closed Reflux / Colorimetric	Hach DR-2010 UV/Vis spectrophotometer Hach DR2700	Hach DR-2010 UV/Vis spectrophotometer Hach DR2700 Hach DR1900	HACH 8000
Conductivity	Conductivity Meter with Wheatstone Bridge probe	YSI-3100, YSI-3200, Orion 115A,Orion 250, Accumet Model 150	YSI-3100, YSI-3200, Orion 115A,Orion 250, Accumet Model 150	SM 2510 B-1997
Cyanide	Acid Digest/Distil./Colorimetric	Hach DR-4000/Vis	Hot plate distillation and Hach DR4000 Midi-Vap 4000 Distillation & Hach DR1900	SM4500-CN E 1999 & SM4500 CN B or C 1999 EPA 335.4
Floating Particulates	Flotation Funnel	Various models of balances.	Metler Toledo ML204T analytical balance	SM 2530 B-2010
Flow	Continuous Meter	Gould (pressure sensor), ADS (sonic sensor), or Venturi (velocity sensor)	Gould (pressure sensor), ADS (sonic sensor), or Venturi (velocity sensor)	
Hardness; Ca, Mg, Total	ICP-OES / Calculation	IRIS INTREPID DUO & ICAP 6300	ICAP 6300 & ICAP 7600	EPA 200.7, Rev. 4.4 (1994) & SM 2340 B-1997
Kjeldahl Nitrogen (TKN)	Macro-Digestion / Titration	Velp scientificA Buchi K-314 distiller & Orion 950 pH meter	Buchi Distillation Unit K-314 & K-350 Orion 950 pH Meter/Titrator	SM-4500-Norg B-1997
Oil and Grease	Hexane Extraction / Gravimetric	Various models of balances.	Various models of balances.	EPA 1664B
Organic Carbon (TOC)	Catalytic Oxidation / IR Water Production Laboratory)	Shimadzu ASI-5000	Shimadzu ASI-5000	5310 B (Water Production Laboratory)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
pH	Hydrogen+Reference Electrode	Various models of pH meters.	Various models of pH meters.	SM 4500-H\+\ B-2000
Radiation (alpha & beta)	Alpha Spectroscopy Gamma Spectroscopy	External Laboratory (FGL)	External Laboratory (FGL)	EPA 900 (External Laboratory)
Sulfides	Acid Digest-Distillation / Titration	Class A Manual Buret	Hot plate distillation/Class A Manual Buret	EPA 9034 & EPA 9030B (Distillation)
Solids, Dissolved-Total	Gravimetric @ 180°C using analytical balance	Various models of balances.	Various models of balances.	SM 2540 C-1997
Solids, Settleable	Volumetric	Imhoff Cone	Imhoff Cone	SM 2540 F-1997
Solids, Suspended-Total	Gravimetric @ 103-105°C	Various models of balances.	Various models of balances.	SM 2540 D-1997
Solids, Suspended-Volatile	Gravimetric @ 500°C	Various models of balances.	Various models of balances.	SM 2540 E-1997
Solids, Total	Gravimetric @ 103-105°C	Various models of balances.	Various models of balances.	SM 2540 B-1997
Solids, Total-Volatile	Gravimetric @ 500°C	Various models of balances.	Various models of balances.	EPA 160.4 (Issued 1971)
Temperature	Direct Reading	Fisher Digital Thermometer	Fisher Digital Thermometer	SM 2550 B-2010
Turbidity	Nephelometer Turbidimeter	Hach 2100-N Meter Hach 2100-AN Meter	Hach 2100-N Meter Hach 2100-AN Meter	SM 2130B-2001
Bromide, Chloride, Fluoride, Nitrate, Phosphate, Sulfate	Ion Chromatography	Dionex ICS-3000	Dionex ICS-3000	EPA 300.0, Rev 2.1 (1993)

WASTEWATER INFLUENT and EFFLUENT (Metals)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Aluminum	Acid Digestion / ICP-OES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Antimony	Acid Digestion / ICP-OES	ICAP 6300	ICAP 6300/NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Arsenic	Hydride Generation AA / ICP-MS	Thermo iCE 3000	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Barium	Acid Digestion / ICP-OES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Beryllium	Acid Digestion / ICP-OES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Boron	Acid Digestion / ICP-OES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Cadmium	Acid Digestion / ICP-OES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Calcium	ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300 & ICAP 7600	EPA 200.7, Rev. 4.4 (1994)
Chromium	Acid Digestion / ICP-OES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Cobalt	Acid Digestion / ICP-OES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Copper	Acid Digestion / ICP-OES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Lead	Acid Digestion / ICP-OES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Lithium	ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300 & ICAP 7600	EPA 200.7, Rev. 4.4 (1994)
Magnesium	ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300 & ICAP 7600	EPA 200.7, Rev. 4.4 (1994)
Manganese	Acid Digestion / ICP-OES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Mercury	Cold vapor atomic fluorescence spectroscopy (CVAF)	PSAnalytical PSA 10.035 Millennium Merlin 1631	PSAnalytical PSA 10.035 Millennium Merlin 1631	EPA 1631E for Point Loma samples only/EPA 245.7
Molybdenum	Acid Digestion / ICP-AES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Nickel	Acid Digestion / ICP-AES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Potassium	Acid Digestion / ICP-AES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Selenium	Hydride Generation AA / ICP-MS	Thermo iCE 3000	Thermo iCE 3000/ NexION 300X	SM 3114 B-2009 & SM 3114 C-2009 & EPA 200.8 Rev 5.4 (1994)
Silver	Acid Digestion / ICP-AES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Sodium	ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300 & ICAP 7600	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Thallium	Acid Digestion / ICP-AES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Vanadium	Acid Digestion / ICP-AES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)
Zinc	Acid Digestion / ICP-AES	ICAP 6300	ICAP 6300 & NexION 300X	EPA 200.7 Rev. 4.4 (1994) & EPA 200.8 Rev 5.4 (1994)

WASTEWATER INFLUENT and EFFLUENT (Organics)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Acrolein and Acrylonitrile	Purge & Trap, GC-MSD	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	EPA 8260 B
Base/Neutral Extractables	Basic / Methylene Chloride continuous extraction, GC-MSD	HP-6890GC / 5973MSD Capillary DB-5.625	Agilent 7890A GC / 5975C MSD Capillary DB-5.625	EPA 625
Benzidines	Basic / Methylene Chloride continuous extraction, GC-MSD	HP-6890GC / 5973MSD Capillary DB-5.625	Agilent 7890A GC / 5975C MSD Capillary DB-5.625	EPA 625
Chlorinated Compounds	Methylene Chloride extraction, GC-ECD	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	Agilent 7890B GC-ECD Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	EPA 608
Dioxin	Outside Contract (Frontier)	External Laboratory (Frontier & TestAmerica)	External Laboratory (Frontier & TestAmerica)	EPA 1613 (external laboratory)
Organophosphorus Pesticides	Methylene Chloride 15% / Hexane 85% extraction, GC-PFPD	Shimadzu GC-2010 PFPD RTX-OPP 30m/0.32mm/0.5um RTX-OPP2 30m/0.32mm/0.32um	Shimadzu GC-2010 PFPD RTX-OPP 30m/0.32mm/0.5um RTX-OPP2 30m/0.32mm/0.32um	EPA 614
Phenolic Compounds	Acidic / Methylene Chloride continuous extraction, GC-MSD	HP-6890GC / 5973MSD Capillary DB-5.625	Agilent 7890A GC / 5975C MSD Capillary DB-5.625	EPA 625
Purgeables (VOCs)	Purge & Trap, GC-MSD	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	EPA 8260 B
Tri, Di, and Monobutyl Tin	Methylene Chloride extraction, derivatization, hexane exchange, GC-PFPD & GC-FPD	Varian 3400 GC-FPD DB-608/30m DB-1/30m & Shimadzu GC-2010PFPD RTX-1 30m/0.25mm/1um RTX-5 30m/0.25mm/1um	Shimadzu GC-2010PFPD RTX-1 30m/0.25mm/1um RTX-5 30m/0.25mm/1um	In house method

LIQUID SLUDGE: Raw, Digested, and Filtrate (General)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Alkalinity	Selected Endpoint Titration	Mettler 25 Titrator Orion 950	Mettler 25 Titrator Orion 950	SM 2320 B-1997
Cyanide	Acid Digest-Distil / Colorimetric	Hach DR/4000V	Hot plate distillation & Hach DR4000 Hot plate distillation & Hach DR6000	EPA 9014 & EPA 9010B (Distillation)
pH	Hydrogen+Reference Electrode	Various models of pH meters.	Various models of pH meters.	SM 4500-H\+\ B-2000
Radiation (alpha & beta)	Alpha Spectroscopy Gamma Spectroscopy	External Laboratory (FGL)	External Laboratory (FGL)	EPA 900
Sulfides	Acid Digest-Distil / Titration	Class A Manual Buret	Class A Manual Buret	EPA 9034 & EPA 9030B (Distillation)
Sulfides, reactive	Distillation / Titration	Class A Manual Buret	Class A Manual Buret	Section 7.3 SW-846 EPA 9034
Solids, Total	Gravimetric @ 103-105°C	Various models of balances.	Various models of balances.	SM 2540G 1997
Solids, Total-Volatile	Gravimetric @ 500°C	Various models of balances.	Various models of balances.	SM 2540G 1997

LIQUID SLUDGE: Raw, Digested, and Filtrate (Metals)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Aluminum	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Antimony	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Arsenic	Hydride Generation / AA	Thermo iCE 3000	Thermo iCE 3000	EPA 7062
Beryllium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Barium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Boron	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Cadmium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Chromium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Cobalt	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Copper	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Iron	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Lead	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Manganese	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Mercury	Cold Vapor Atomic Absorption (CVAA) & backup method Thermal decomposition atomic absorption	PSAnalytical PSA 10.045 Millennium Backup: Milestone DMA80 (thermal decomposition, amalgamation, and atomic absorption spectrophotometry)	PSAnalytical PSA 10.045 Millennium Backup: Milestone DMA80 (thermal decomposition, amalgamation, and atomic absorption spectrophotometry)	EPA 7471A and Backup: EPA 7473
Molybdenum	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Nickel	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Selenium	Hydride Generation / AA	Thermo iCE 3000	Thermo iCE 3000	EPA 7742
Silver	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Thallium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Vanadium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Zinc	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B

LIQUID SLUDGE: Raw, Digested, and Decant (Organics)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Acrolein and Acrylonitrile	Purge & Trap, GC-MSD	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	EPA 8260B
Base/Neutral Extractables	Basic / Methylene Chloride continuous extraction, GC-MSD	HP-6890GC / 5973MSD Capillary DB-5.625	Agilent 7890A GC / 5975C MSD Capillary DB-5.625	EPA 625
Benzidines	Basic / Methylene Chloride continuous extraction, GC-MSD	HP-6890GC / 5973MSD Capillary DB-5.625	Agilent 7890A GC / 5975C MSD Capillary DB-5.625	EPA 625
Chlorinated Compounds	Methylene Chloride extraction, GC-ECD	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	Agilent 7890B GC-ECD Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	EPA 8081A
PCBs	Methylene Chloride extraction, GC-ECD	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	Agilent 7890B GC-ECD Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	EPA 8082
Dioxin	Outside Contract (Frontier)	External Laboratory (Frontier & TestAmerica)	External Laboratory (Frontier & TestAmerica)	EPA 8290 (External Laboratory)
Organophosphorus Pesticides	Methylene Chloride 15% / Hexane 85% extraction, GC-PFPD	Shimadzu GC-2010 PFPD RTX-OPP 30m/0.32mm/0.5um RTX-OPP2 30m/0.32mm/0.32um	Shimadzu GC-2010 PFPD RTX-OPP 30m/0.32mm/0.5um RTX-OPP2 30m/0.32mm/0.32um	EPA 614
Phenolic Compounds	Acidic / Methylene Chloride continuous extraction, GC-MSD	HP-6890GC / 5973MSD Capillary DB-5.625	Agilent 7890A GC / 5975C MSD Capillary DB-5.625	EPA 625
Purgeables (VOCs)	Purge & Trap, GC-MSD	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	EPA 8260B
Tri, Di, and Monobutyl Tin	Methylene Chloride extraction, derivatization, hexane exchange, GC-PFPD & GC-FPD	Varian 3400 GC-FPD DB-608/30m DB-1/30m & Shimadzu GC-2010PFPD RTX-1 30m/0.25mm/1um RTX-5 30m/0.25mm/1um	Shimadzu GC-2010PFPD RTX-1 30m/0.25mm/1um RTX-5 30m/0.25mm/1um	In house method

LIQUID SLUDGE: Raw, Digested, and Decant (Digester Gases)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Methane	Gas Chromatography	SRI 8610C GC EG&G 100AGC	SRI 8610C GC EG&G 100AGC	In house method (Based on 2720C)
Carbon Dioxide	Gas Chromatography	SRI 8610C GC EG&G 100AGC	SRI 8610C GC EG&G 100AGC	In house method (Based on 2720C)
Hydrogen Sulfide	Colorimetric	Drager H_2S	Drager H_2S	Commercial Tubes

DRIED SLUDGE: Metro Biosolids Center (General)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2016	Method 2017
Cyanide	Acid Digest-Distillation Colorimetric	Hach DR/4000V UV/Vis	Hot plate distillation & Hach DR4000 Hot plate distillation & Hach DR6000	EPA 9014 & EPA 9010B (Distillation)
Cyanide Reactive	Distillation / Colorimetric	Hach DR/4000V UV/Vis	Hot plate distillation & Hach DR4000 Hot plate distillation & Hach DR6000	EPA SW-846 Chapter 7.3 & EPA 9014
pH	Hydrogen+Reference Electrode	Various models of pH meters	Various models of pH meters	EPA 9045C
Radiation (alpha & beta)	Alpha Spectroscopy Gamma Spectroscopy	External Laboratory (FGL)	External Laboratory (FGL)	External Laboratory
Sulfides	Acid Digest-Distil / Titration	Class A Manual Buret	Class A Manual Buret	EPA 9034 & EPA 9030B (Distillation)
Sulfides, reactive	Distillation / Titration	Class A Manual Buret	Class A Manual Buret	Section 7.3 SW-846 EPA 9034
Solids, Total	Gravimetric @ 103-105 Cº	Various models balances	Various models balances	SM 2540G 1997
Solids, Total-Volatile	Gravimetric @ 500 Cº	Various models balances	Various models balances	SM 2540G 1997

DRIED SLUDGE: Metro Biosolids Center (Metals)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Aluminum	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Antimony	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Arsenic	Hydride Generation / AA	Thermo iCE 3000	Thermo iCE 3000	EPA 7062
Barium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Beryllium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Boron	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Cadmium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Chromium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Cobalt	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Copper	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Iron	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Lead	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Manganese	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Mercury	Cold Vapor Atomic Absorption (CVAA) & Thermal decomposition atomic absorption	PSAnalytical PSA 10.045 Millennium & Milestone DMA80 (thermal decomposition, amalgamation, and atomic absorption spectrophotometry)	PSAnalytical PSA 10.045 Millennium & Milestone DMA80 (thermal decomposition, amalgamation, and atomic absorption spectrophotometry)	EPA 7471A & EPA 7473 Methods 7471A for California & 7473 for Arizona
Molybdenum	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Nickel	Acid Digestion / ICP-AES	IRIS INTREPID DUO & ICAP 6000	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Selenium	Hydride Generation / AA	Thermo iCE 3000	Thermo iCE 3000	EPA 7742
Silver	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Thallium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Vanadium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ
Zinc	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B for CA & EPA 6010C for AZ

DRIED SLUDGE: Metro Biosolids Center (Organics)

Analyte	Description 2017	Instrument 2016	Instrument 2017	Method 2017
Acrolein and Acrylonitrile	Purge & Trap, GC-MSD	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	EPA 8260B
Base/Neutral Extractable	Methylene Chloride 50% / Acetone 50% Sonication Extraction GC-MSD	Agilent-7890GC/5975 MSD Capillary DB-5.625	Agilent-7890GC/5975 MSD Capillary DB-5.625	EPA 8270C EPA 3550A
Chlorinated Compounds	Methylene Chloride 50% / Acetone 50% Sonication Extraction, Hexane exchange GC-ECD	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	EPA 8081A
PCBs	Methylene Chloride 50% / Acetone 50% Sonication Extraction, Hexane exchange GC-ECD	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	EPA 8082
Dioxin	Outside Contract (Frontier)	External Laboratory (Frontier & TestAmerica)	External Laboratory (Frontier & TestAmerica)	EPA 8290 External Laboratory
Organophosphorus Pesticides	Methylene Chloride 50% / Acetone 50% Sonication Extraction, hexane exchange, GC-PFPD	Shimadzu GC-2010 PFPD RTX-OPP 30m/0.32mm/0.5um RTX-OPP2 30m/0.32mm/0.32um	Shimadzu GC-2010 PFPD RTX-OPP 30m/0.32mm/0.5um RTX-OPP2 30m/0.32mm/0.32um	EPA 8141A
Phenolic Compounds	Methylene Chloride 50% / Acetone 50% Sonication Extraction GC-MSD	Agilent-7890GC/5975 MSD Capillary DB-5.625	Agilent-7890GC/5975 MSD Capillary DB-5.625	EPA 8270C EPA 3550A
Purgeables (VOCs)	Purge & Trap, GC-MSD	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	EPA 8260B

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2016	Method 2017
Tri, Di, and Monobutyl Tin	Hexane extraction, derivatization, GC-PFPD	Varian 3400 GC-FPD DB-608/30m DB-1/30m & Shimadzu GC-2010PFPD RTX-1 30m/0.25mm/1um RTX-5 30m/0.25mm/1um	Varian 3400 GC-FPD DB-608/30m DB-1/30m & Shimadzu GC-2010PFPD RTX-1 30m/0.25mm/1um RTX-5 30m/0.25mm/1um	In house method
Total Nitrogen (TN)	Calculation Sum all Nitrogen (TKN, NO_2, NO_3)	Calculation: Sum all Nitrogen (TKN, NO_2, NO_3)	Calculation: Sum all Nitrogen (TKN, NO_2, NO_3)	Calculation Sum all Nitrogen (TKN, NO_2, NO_3)

OCEAN SEDIMENT (General)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2016	Method 2017
Biochemical Oxygen Demand (BOD-5 Day)	Dissolved Oxygen Probe	YSI-5000 DO Meter	YSI-5000 DO Meter	SM 5210 B-2001 modified
Particle Size	Coarse fraction by sieve; fine fraction by laser scatter	Horiba Partica LA-950V2	Horiba Partica LA-950V2	EPA/CE-81-1
Sulfides	Acid Digest-Distil / IC-PAD	Dionex ICS3000-PAD(Ag)	Dionex ICS3000-PAD(Ag)	DIONEX AU 107 & EPA 9030B Distillation
Solids, Total	Gravimetric @ 103-105 Cº	Various balances	Various balances	SM 2540 G
Solids, Total-Volatile	Gravimetric @ 500 Cº	Various balances	Various balances	SM 2540 G
Total Organic Carbon (TOC) and Total Nitrogen (TN)	Combustion / GC-TCD	Carlo-Erba NC-2500 Porapak QS & FLASH 2000	FLASH 2000	In house method based on "TOC/TN in Marine Sediments...", SCCWRP Annual Report, 1990-1991, and 1991-1992 & EPA 9060

OCEAN SEDIMENT (Metals)

Analyte	Description 2017	Instrument 2016	Instrument 2017	Method 2017
Aluminum	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Antimony	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B

OCEAN SEDIMENT (Metals)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Arsenic	Hydride Generation AA & Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 7062 & EPA 6010B
Beryllium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Cadmium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Chromium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Copper	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Iron	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Lead	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Manganese	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Mercury	Thermal decomposition atomic absorption	Milestone DMA80	Milestone DMA80	EPA 7473
Nickel	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Selenium	Hydride Generation AA & Acid Digestion / ICP-OES	Thermo iCE 3000	Thermo iCE 3000 & ICAP 6300	EPA 7742 & EPA 6010B
Silver	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Thallium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Tin	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B
Zinc	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 6010B

OCEAN SEDIMENT (Organics)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Base/Neutral Extractables	Methylene Chloride 50% / Acetone 50% Accelerated Solvent (ASE) Extraction GC-MSD	Dionex ASE-350 Agilent-7890GC/5975 MSD Capillary DB-5.625	Dionex ASE-350 Agilent-7890GC/5975 MSD Capillary DB-5.625	EPA 8270C / EPA 3545A
Chlorinated Compounds	Methylene Chloride 50% / Hexane 50% extraction, Accelerated Solvent Extraction GC-MS/MS	Dionex ASE-350 Varian 3800 GC Saturn 2000 MS-Ion Trap DB-XLB/60m	Dionex ASE-350 Varian 3800 GC Saturn 2000 MS-Ion Trap DB-XLB/60m	EPA 8081A / EPA 3545A
PCBs as Congeners	Methylene Chloride 50% / Hexane 50% extraction, Accelerated Solvent (ASE) Extraction GC-MS/MS	Dionex ASE-350 Varian 3800 GC Saturn 2000 MS-Ion Trap DB-XLB/60m	Dionex ASE-350 Varian 3800 GC Saturn 2000 MS-Ion Trap DB-XLB/60m	EPA 8082 / EPA 3545A

FISH TISSUE: Liver, Muscle, and Whole (General)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Solids, Total	Freeze Drying Gravimetric	Labconco Freezone 6 Various balances	Labconco Freezone 6 Various balances	”A Guide to Freeze Drying for the Laboratory...”, LABCONCO, 3-53-5/94-Rosse-5M-R3, 1994
Lipids	Hexane/Acetone Extraction Gravimetric	Dionex ASE-350 Various balances	Dionex ASE-350 Various balances	In house method

FISH TISSUE: Liver, Muscle, and Whole (Metals)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Aluminum	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3
Antimony	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3
Arsenic	Hydride Generation AA & Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	Thermo iCE 3000 & ICAP 6300	EPA 200.7 / EPA 200.3
Beryllium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3
Cadmium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3
Chromium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3
Copper	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3
Iron	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3
Lead	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3
Manganese	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3
Mercury	Thermal decomposition, amalgamation, and atomic absorption spectrophotometry	Milestone DMA80	Milestone DMA80	EPA 7473
Nickel	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3
Selenium	Hydride Generation AA & Acid Digestion / ICP-OES	Thermo iCE 3000	Thermo iCE 3000 & ICAP 6300	EPA 7742
Silver	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3
Thallium	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3
Tin	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3
Zinc	Acid Digestion / ICP-OES	IRIS INTREPID DUO & ICAP 6300	ICAP 6300	EPA 200.7 / EPA 200.3

FISH TISSUE: Liver, Muscle, and Whole (Organics)

Analyte	Description 2017	Instrumentation 2016	Instrumentation 2017	Method 2017
Base/Neutral Extractable	Basic / Methylene Chloride ASE extraction, GC-MSD	Dionex ASE-350 Agilent-7890GC/5975 MSD Capillary DB-5.625	Dionex ASE-350 Agilent-7890GC/5975 MSD Capillary DB-5.625	EPA 8270C / 3545A
Chlorinated Compounds	Methylene Chloride 50% / Hexane 50% extraction, exchange, GC- MS/MS	Bruker 450-GC Bruker 300MS DB-XLB/60m	Bruker 450-GC Bruker 300MS DB-XLB/60m	EPA 8081A / EPA 3545A
PCBs	Methylene Chloride 50% / Hexane 50% extraction, hexane exchange, GC- MS/MS	Bruker 450-GC Bruker 300MS DB-XLB/60m	Bruker 450-GC Bruker 300MS DB-XLB/60m	EPA 8082 / EPA 3545A

Method References: Methods of Analysis Used to Produce the Data Presented in this Report.

a) Methods for Chemical Analysis of Water and Wastes,
EPA, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio,
March 1979 (EPA-600/4-79-020), 1983 Revision, and March 1984 (EPA-600/4-84-017).

b) U.S. EPA Contract Laboratory Program, Statement of Work for Organic Analysis,
Multi-Media, Multi-Concentration, 7/85 revision and 1/91 revision.

c) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,
U.S. EPA Office of Solid Waste and emergency Response,
Washington, D.C. 20460, November 1986, SW-846, Third Edition.
Revision 0 September 1994, December 1996, Revision 2

d) The Determination of Inorganic Anions in Water by Ion Chromatography,
Revision 2.1, August 1993

e) U.S. EPA. The Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry. Method 200.7, Revision 4.4, EMMC Version, 1994

f) U.S. EPA. Determination of Trace Elements in Water and Wastes by Inductively Coupled Plasma-Mass Spectrometry. Method 200.8, Revision 5.4, EMMC Version, 1994

g) Standard Methods for the Examination of Water and Wastewater,
APHA, AWWA, WPCF, 18th Edition, 1992.

h) Standard Methods for the Examination of Water and Wastewater,
APHA, AWWA, WPCF, 19th Edition, 1995.

i) Standard Methods for the Examination of Water and Wastewater,
APHA, AWWA, WPCF, 20th Edition, 1998.

j) Criteria for Identification of Hazardous and Extremely Hazardous Wastes,
California Code of Regulations (CCR), Title 22.

k) DIONEX AU 107, R.D.Rocklin and E.L.Johnson, ANAL. CHEM., 1986, 55, 4

l) Adaptation of method by the Naval Ocean Systems Center, San Diego, Marine Environment Branch, San Diego, CA 92152-5000

m) ”TOC/TN in Marine Sediments...”, SCCWRP Annual Report, 1990-1991, and 1991-1992.

n) ”A Guide to Freeze Drying for the Laboratory...”, LABCONCO, 3-53-5/94-Rosse-5M-R3, 1994.

o) ”Lipids Content in Fish Tissues via Accelerated Solvent Extraction...”,WWChem, EMTS/MWWD, 1998

p) Standard Methods for the Examination of Water and Wastewater,
APHA, AWWA, WPCF, 22th Edition, 2012.

v) Procedures for Handling and Chemical Analysis of Sediment and Water Samples,
Russel H. Plumb, Jr., May 1981, EPA/Corp of Engineers Technical Committee on
Criteria for Dredged and Fill Material, EPA Contract 4805572010.

w) Method 1631, Revision E:
Mercury in water by oxidation, purge and trap, and cold vapor atomic fluorescence spectrometry

y) Method 245.7
Mercury in Water by Cold Vapor Atomic Fluorescend Spectrometry, Revision 2.0, February 2005

C. Frequency of Analysis and Type of Sample – 2017

1. Definitions.

D= 1/Day W= 1/Week M= 1/Month Q= 1/Quarter S= Semi-Annual

		FREQUENCY OF ANALYSIS		
Constituent	***Type of Sample***	***Influent***	***Effluent***	***Reclaim***
Permit Required Testing				
Flow	Recorder/Totalizer	*Continuous*	*Continuous*	*Continuous*
Biochemical Oxygen Demand -Total (5-day)	24hr Composite	*W*	*D*	*D*
Oil and Grease	Grab		*W*	
pH	Grab		*D*	*D*
Settleable Solids	Grab		*W*	
Temperature			*W*	
Total Suspended Solids	24hr Composite	*W*	*D*	*D*
Volatile Suspended Solids	24hr Composite			*D*
Total Dissolved Solids	24hr Composite			*M*
Turbidity	24hr Composite		*W*	*Continuous*
Dissolved Oxygen	Grab		*W*	
Total Residual Chlorine	Grab		*W*	
As,Cd,Cr(VI),Cu,Pb,Hg,Ni,Ag, Zn,	24hr Composite	*M*	*M*	
Cr(III), Sb, Be, Tl	24hr Composite		*Q*	
Se	24hr Composite		*M*	
Fe, Mn, B				*M*
Anions (Chloride, Sulfate, Nitrate as N, Fluoride)	24hr Composite			*M*
Ammonia-Nitrogen	24hr Composite		*M*	
MBAS	24hr Composite			*M*
Cyanide	24hr Composite	*M*		
Acrolein and Acrylonitrile	Grab		*Q*	
Base/Neutral Compounds	24hr Composite		*Q*	
Benzidines	24hr Composite		*Q*	
Dioxin, TCDD Equivalents	24hr Composite		*Q*	
Percent Sodium	24hr Composite			*M*
Pesticides, chlorinated	24hr Composite		*Q*	
Phenols, non-chlorinated	24hr Composite		*M*	
Phenols, chlorinated	24hr Composite		*M*	
Polychlorinated Biphenyls	24hr Composite		*Q*	
Purgeable (Volatile) Compounds	Grab		*Q*	
Tri, Di, & monobutyl tins	24hr Composite		*Q*	
Radiation	24hr Composite		*M*	
Toxicity (Acute & Chronic)*	24hr Composite		*Q*	
*Reported monthly in the *Toxicity Testing Report* by the Biology Section.				

D= Daily W= Weekly M= Monthly Q= Quarterly S= Semi-Annual

		FREQUENCY OF ANALYSIS		
Constituent	***Type of Sample***	***Influent***	***Effluent***	***Reclaim***
Additional Testing				
Total Dissolved Solids	24hr Composite	*D*		
Volatile Suspended Solids	24hr Composite	*D*		
Pesticides, organophosphorus	24hr Composite	*S*	*S*	*S*
Cations (Ca2+, Mg2+, Li+,Na+,K+)	24hr Composite	*M*	*M*	*M*
Anions	24hr Composite	*M*	*M*	
Fe	24hr Composite	*M*	*M*	
Oil and Grease	Grab	*Q*		*Q*
pH	Grab	*D*		
Settleable Solids	Grab	*Q*		
MBAS	24hr Composite	*Q*	*Q*	
Turbidity	24hr Composite	*Q*		*W*
Sb, Be, Tl	24hr Composite	*M*		*M*
Se	24hr Composite	*M*		*M*
Ammonia-Nitrogen	24hr Composite	*Q*		*Q*
Cyanide	24hr Composite			*Q*
Acrolein and Acrylonitrile	Grab	*Q*		*Q*
Base/Neutral Compounds	24hr Composite	*Q*		*Q*
Benzidines	24hr Composite	*Q*		*Q*
Dioxin	24hr Composite	*M*		*Q*
Pesticides, chlorinated	24hr Composite	*Q*		*Q*
Phenols, non-chlorinated	24hr Composite	*Q*		*Q*
Phenols, chlorinated	24hr Composite	*Q*		*Q*
Polychlorinated Biphenyls	24hr Composite	*Q*		*Q*
Tri, Di, & monobutyl tins	24hr Composite	*Q*		*Q*
Percent Sodium	24hr Composite		*M*	
Purgeable (Volatile) Compounds	Grab	*Q*		*Q*
Radiation	24hr Composite	*M*		*Q*

D. Summary and Overview:

The Environmental Chemistry Services (ECS) Section of the Environmental Monitoring and Technical Services (EMTS) Division performs most of the NPDES permits and other regulatory permits analytical and/or reporting functions for the City of San Diego Public Utilities Department's wastewater treatment facilities. In addition, the section provides process control testing services for the City of San Diego's E.W. Bloom Point Loma Wastewater Treatment Plant (PLWTP), South Bay Water Reclamation Plant (SBWRP), and the Metro Biosolids Center (MBC) at its laboratories located onsite each plant. The section continues to analyze North City Water Reclamation Plant (NCWRP) parameters related to the Point Loma NPDES permit.

The ECS laboratory staff also performs the chemical and physical testing of ocean sediment and fish tissue samples in support of the Ocean Monitoring Program for the City of San Diego's Point Loma Ocean Outfall (PLOO) and the SBWRP Ocean Outfall (SBOO), which is shared with the International Boundary and Water Commission's International Water Treatment Plant (IWTP). Recently, these analytical services have also been expanded to strengthen the City of San Diego's Industrial Waste Control Program (IWCP) in its compliance evaluation of industrial facilities discharging into the Metro sewerage System. Work for the IWCP also includes quarterly sampling and analysis throughout the collection system to support the annual review of local wastewater discharge limits (Local Limits) as required by the PLWTP NPDES permit. Additionally, laboratory staff provide environmental testing services to various customers, both internal to the City of San Diego and to other external agencies, e.g. other municipal water districts within the San Diego county.

The QA/QC activities of the Laboratory are comprehensive and extensive. Of the 49,015 samples received in the Laboratory in 2017, approximately 38.1% were Quality Control (QC) samples, such as blanks, check samples, and standard reference materials. A total of 147 different analyses were performed throughout the year resulting in 436,666 analytical determinations that consist of 166,836 (~38.2%) QC determinations (e.g. blanks, laboratory replicates, matrix spikes, surrogates, etc.) used to determine the accuracy, precision, and performance of each analysis and batch.

There are four (4) separate laboratory facility locations, each is independently certified by the California ELAP (Environmental Laboratory Accreditation Program) for the fields of testing required under California regulations, and one of these laboratories also owns a certification for fields of testing under the Arizona Department of Health Services (ADHS). Copies of these certifications are included as Attachment 1. These are rigorous programs involving continuing independent blind performance testing, biannual comprehensive audits, and extensive documentation requirements. California ELAP and Arizona DHS certify fields of testing for Water, Wastewater, and Hazardous Materials with methods published in the Federal Register, or specifically approved in regulation by the United States Environmental Protection Agency (USEPA). Additionally, the Laboratory performs analyses using methods for which certification does not exist, such as ocean sediment and sea water determinations. These methods have been developed in-house, derived from, or in collaboration with other scientific laboratories (e.g. Scripps Institute of Oceanography, Southern California Coastal Water Research Project, et. al.) and have been used extensively in multi-agency EPA and State sponsored studies over the past several years. Methods of analysis developed for matrices and applications not within ELAP jurisdiction have been adapted from ELAP listed methods to which we apply generally accepted standards of performance and quality control.
Furthermore, the Wastewater Treatment & Disposal Division (WWTD) facilities and all EMTS laboratories maintained International Standards Organization (ISO) 14001 Environmental

Management Systems certification. Contract laboratories are also required to use only approved methods for which they hold ELAP certification, and/or are approved by the appropriate regulatory agency (e.g. San Diego RWQCB). Copies of their certifications are included as Attachment 2.

The following report summarizes the QA/QC activities during 2017 and documents the laboratory information and certifications for those laboratories which provided data used in NPDES and other permit monitoring or environmental testing during the year.

Laboratories Contributing Results used in this report.

Laboratory Name	EPA Lab Code	ADHS Cert#	ELAP Cert.#	Address	Phone #	Contribution
Alvarado Environmental* Chemistry Laboratory	CA00380	AZ0783*	ELAP 1609	5530 Kiowa Drive L Mesa, CA 91942	(619) 668-3212	All results except those listed below.
Pt. Loma Wastewater Chemistry Laboratory	CA01435		2474	1902 Gatchell Road San Diego, CA 92106	(619) 221-8765	Process Control analyses and wet methods for the treatment plant.
Metro Biosolids Center Chemistry Laboratory	CA01437		2478	5240 Convoy Street San Diego, CA 92111	(858) 614-5834	Process Control analyses and wet methods for the treatment plant.
South Bay Wastewater Chemistry Laboratory	CA00080		2539	2411 Dairy Mart Road San Diego, CA 92173	(619) 428-7349	Process Control analyses and wet methods for the treatment plant.
City of San Diego Water Quality Laboratory	CA01393		1058	5530 Kiowa Drive La Mesa, CA 91942	(619) 668-3237	Total Organic Carbon in Wastewater; Thallium in Water
North City Wastewater Chemistry Laboratory	CA01436		2477	4949 Eastgate Mall San Diego, CA 92121	(858) 824-6009	Process Control analyses and wet methods for the treatment plant.
City of San Diego-Marine Microbiology	CA01302		2185	2392 Kincaid Road San Diego, CA 92101	(619) 758-2312	Microbiology
City of San Diego Toxicology Laboratory			1989	2392 Kincaid Road San Diego, CA 92101	(619) 758-2341	Bioassays
Nautilus Environmental			1802	4340 Vandever Ave San Diego, CA 92120	(858) 587-7333	Bioassays
TestAmerica Laboratories, Inc			2425	2800 George Washington Way, Richland, WA 99354	(509) 375-3131	Gross Alpha/Beta Radioactivity
TestAmerica Nashville Division			01168CA	2960 Foster Creighton Drive Nashville, TN 37204	(615) 756-0177	Herbicides
Frontier Analytical Laboratory			02113CA	5172 Hillsdale Circle El Dorado Hills, CA 95762	(916) 934-0900	Dioxin/Furan in Wastewater and Solids
Weck Laboratories, Inc.			1132	14859 East Clark Avenue City of Industry, CA 91745	626-336-2139 x141	Organics (Volatile & semi-volatile); Herbicides
Fruit Growers Laboratories, Inc.			1573	853 Corporation Street Santa Paula, CA 93060	(805) 392-2000	Gross Alpha/Beta Radioactivity
Babcock Laboratories, Inc.			2698	6100 Quail Valley Court Riverside CA, 92507	(951) 653-3351	Chlorinated Pesticides (608), Aroclors 8081/8082, 8151A, 200.8
* Licensed & certified as Arizona Out-of-State Laboratory						

Facilities & Scope:

The Environmental Chemistry Services (ECS) comprises four geographically separated laboratories - the main laboratory facilities located at the Alvarado Joint Laboratory building in La Mesa and three satellite chemistry laboratories located at Public Utilities Department's wastewater treatment plants. Each maintains individual California Environmental Laboratory Accreditation Program (ELAP) certification in its respective Fields of Testing (FoT). The Alvarado laboratory is also certified by the state of Arizona as an out of–state laboratory. Each laboratory also has its own USEPA Lab Code as shown in the following table.

Laboratory Facility	Laboratory	Address	Phone #	EPA Lab Code	ADHS Cert#	ELAP Cert.#
Alvarado Laboratory	Wastewater Chemistry Laboratory	5530 Kiowa Drive La Mesa, CA 91942	619.668.3215	CA00380	AZ0783	1609
Point Loma Satellite Lab	Pt. Loma Wastewater Chemistry Laboratory	1902 Gatchell Road San Diego, CA 92106	619.221.8765	CA01435		2474
Metro Biosolids Center Satellite Lab	Metro Biosolids Center Chemistry Laboratory	5240 Convoy Street San Diego, CA 92111	858.614.5834	CA01437		2478
South Bay Water Reclamation Plant Satellite Lab	South Bay Wastewater Chemistry Laboratory	2411 Dairy Mart Road San Diego, CA 92173	619.428.7349	CA01460		2539

The information presented in this report applies to ECS, including all of the laboratories listed above, unless specified otherwise. The main office for ECS is headquartered at the Alvarado laboratory, which also houses the most extensive laboratory facilities of the section. Along with a variety of process control and wet chemistry analyses, the main laboratory also handles all of the trace metals, pesticides, organics determinations, and other analyses. The satellite laboratories are primarily dedicated to process control, wet chemistry, and other analyses to directly support operations of the co-located wastewater treatment plants.

As previously reported, the North City Water Reclamation Plant Satellite Laboratory was shifted to the City of San Diego's Water Quality Chemistry Services (WQCS) Section that also consists of the Water Quality Laboratory during the October 2015 divisional restructuring. With this realignment, the now obsolete Industrial Waste Laboratory (IWL) was similarly moved to become part of ECS. Though separate databases are still maintained to simplify sectional operation, a final integration is expected with the upcoming acquisition of a new divisional Laboratory Information Management System (LIMS) in Fall 2018. Please note that results of IWL samples analyzed by ECS were entered into ECS's database and subsequently loaded into the IWL database during this 2017 reporting period.

Environmental Chemistry Services performs most of the NPDES analytical monitoring requirements and other permit process control chemical and physical testing for the:

- E.W. Blom, Point Loma Wastewater Treatment Plant (PLWTP), NPDES No. CA0107409/ Order No. R9-2017-0007, including the ocean monitoring program.
- Metro Biosolids Center (MBC), no permit, but monitoring requirements are contained in Permit No. R9-2017-0007.
- South Bay Water Reclamation Plant (SBWRP), NPDES No. CA0109045/ Order No. R9-2013-0006.
- North City Water Reclamation Plant (NCWRP), Order No. R9-2015-0091.

- City of San Diego's Industrial Pretreatment Program
- Ocean monitoring program for the PLOO and SBOO, which is shared with the International Boundary and Water Commission's International Treatment Plant.
- Other environmental testing services for various customers, both internal to the City of San Diego and other external public agencies.

A small portion of the analyses required for permit monitoring was outsourced to laboratories certified by ELAP, specifically:

- Gross Alpha- and Beta radiations to Test America Laboratories, Inc. (Richland Division) and Fruit Growers Laboratory
- Herbicides to Test America Laboratories, Inc. (Nashville Division) and Weck Laboratories
- Total organic carbon (TOC) and thallium in water to the Water Quality Laboratory, City of San Diego, Public Utilities Department
- Dioxin and Furans in solids and wastewater to Frontier Analytical Laboratories
- Organics (Semi-volatile & Volatile) analyses to Weck Laboratories, Inc.

The City of San Diego pays for additional QC samples (replicates, blanks, and spikes) as a routine quality check on contracted laboratory work. This is beyond the usual and customary practices with contract laboratory work.

Ocean Monitoring:

While there are no recognized State certifications for laboratory analyses of marine environmental samples (e.g. seawater, sediments, various tissues, etc.), the City of San Diego has been a leader in the development and standardization of analytical methods for determinations in these areas.

Many of the methods are novel approaches developed after extensive research and development from other published work (e.g. organotin analyses, sediment grain size, etc.) or adaptations of existing EPA methods (e.g. SW 846 Method 8082 for PCB congeners in sediments, etc.). For example, standards which are received as tin chlorides and sample extracts must be alkylated in order to be detected by gas chromatography for organotin determination. Recently, the laboratory successfully investigated and adopted a new, safer derivatization procedure using sodium tetraethylborate (STEB). This work was completed in collaboration with OI Analytical and results presented at Pittcon 2018.

The laboratory participate in extensive inter-laboratory calibration studies. Some of the most extensive studies have involved several academic/research, public, and private laboratories under the umbrella of the Southern California Coastal Water Research Project (SCCWRP). These studies are repeated periodically as part of the Southern California Bight Regional Monitoring/Survey Project, which is a massive sampling and monitoring program, participated in by all of the major Publicly Owned Treatment Works (POTWs), California Water Resource Control Boards, and research organizations.

Our laboratory is a reference (referee) laboratory for the NRCC (National Research Council of Canada) CARP-2 Certified Reference Material (CRM) for fish tissue. This sample was adopted as the standard reference material for QC requirement of the Southern California Bight Regional Project, and also used worldwide as a standard reference material. Additionally, we have worked with NIST to develop a West Coast marine sediment and fish tissue standard reference material (SRM).

QA/QC Activities Summary:

Report for January 1, 2017 - December 31, 2017.[6]

The sample distribution increased 5.1% in year 2017 from 2016. Of the 434,447 analytical determinations made on 49,014 samples received by the Laboratory in 2017 (see table A.) 19,085 or 38.94% were Quality Control (QC) samples: 12.22% blanks; and 25.96% were check or reference samples.

	2017		2016
	Number of Samples	Percent of total samples	% Difference
Table A. Samples			
Customer/Environmental samples	**29,929**	**61.06%**	**5.1%**
Quality Control (QC) samples	**19,085**	**38.94%**	**0.5%**
Total Samples	**49,014**	**100.00%**	**3.3%**
QC Samples:			
Blanks:			
FIELD_BLANK	**244**	**0.50%**	**2.9%**
REAGENT_BLANK	**33**	**0.07%**	**-69.7%**
TRIP BLANK	**1**	**0.00%**	**-500.0%**
METHOD_BLANK	**5,713**	**11.66%**	**-3.4%**
Total Blanks:	**5,991**	**12.22%**	
Check samples:			
External Check samples	**5,591**	**11.41%**	**-3.9%**
Internal Check samples	**7,084**	**14.45%**	**-1.5%**
Low Level MDL Verification	**19**	**0.04%**	**-100.0%**
SRMs (Standard Reference Material)	**31**	**0.06%**	**-51.6%**
Total Check Samples:	**12,725**	**25.96%**	**-2.8%**
Total QC Samples:	**18,716**	**38.19%**	**-3.1%**

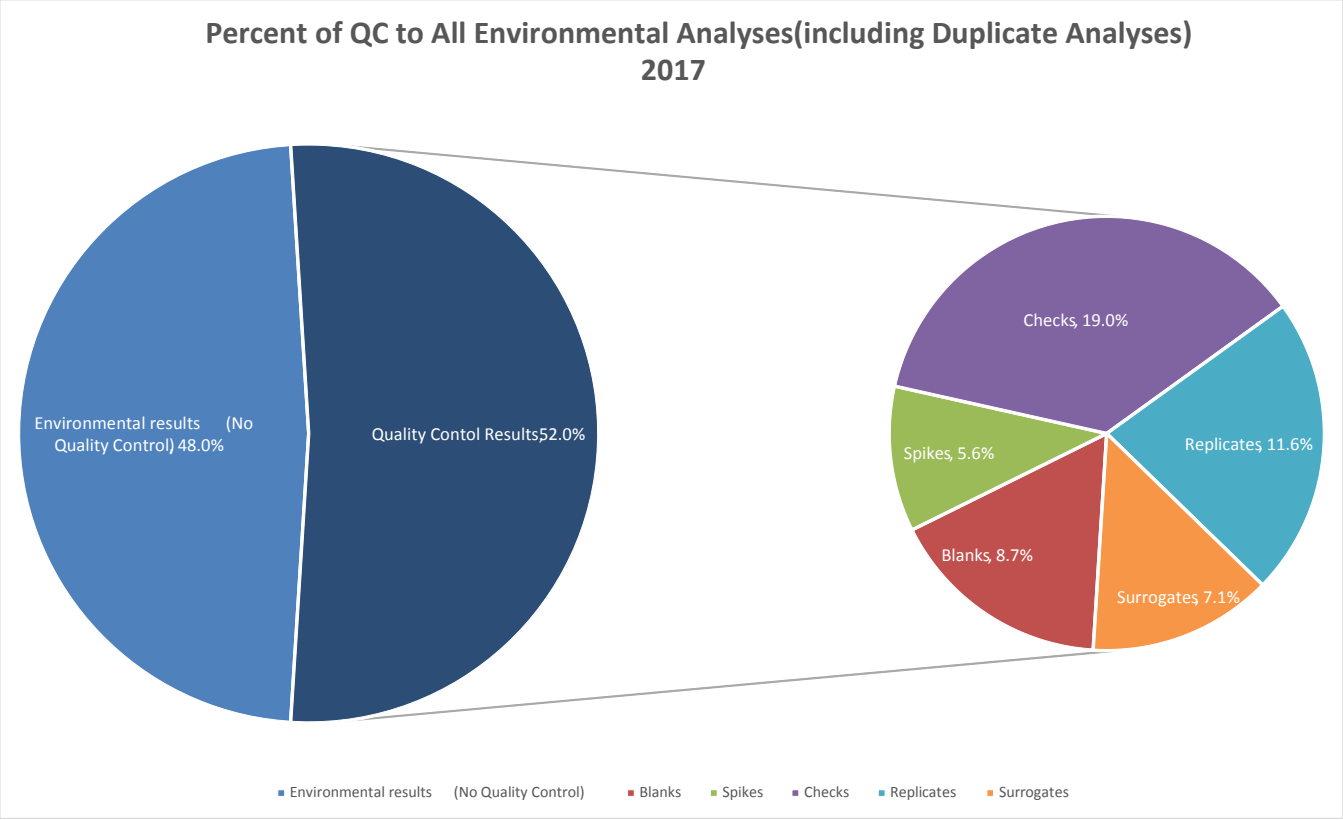
A high level of Quality Control is used for laboratory determinations. Of the 434,447 determinations (see Table A.2), 50.3% were QC (e.g. blanks, lab replicates, matrix spikes, surrogates, etc.). If calculated for the 420,173 customer determinations only, the percentage increases to 52.0%.

A small percentage (3.3%) of the total results did not meet internal QA review due to a variety of reasons - e.g. unsuccessful calibration, unacceptable QC performance, outside acceptance criteria, etc. Samples from analytical determinations that were rejected are either reanalyzed, the data is not reported, or data is reported and flagged as having not met data quality objectives and may not be suitable for compliance determination.

[6] Data counts (metrics) were obtained on March 12, 2018 and do not include analyses that were underway but incomplete as of that time. All table data is based on samples collected between January 1, 2017 and December 31, 2017. This data summary is comprehensive and includes all laboratory analyses work for all customers, projects, and programs unless otherwise indicated.

Table A.2. Analyses (results) - 2017

	Number	Percent of total (434447)	Percent of total (420173)
Total number of analytes/results determined:	**434,447**	NA	
Total results not complete [2]:	14,274	3.3%	
No. of results for Customer/Environmental Samples [1,3]:	**420,173**	**96.7%**	
Total number of rejected results:	140,513	36.06%	
No. of results for blanks [3]:	36,425	8.4%	8.7%
No. of results for matrix spikes [3]:	23,666	5.4%	5.6%
No. of results for Check samples [3]:	79,789	18.4%	19.0%
No. of results for Replicates [3]:	48,625	11.2%	11.6%
No. of results for surrogates [3]:	29,925	6.9%	7.1%
Total QC analyses run [3] :	**218,430**	**50.3%**	**52.0%**



1 – matrix spike, replicates, surrogates are also part of the total for Customer/Environmental samples.
2 – as of March 26, 2017.
3 – percent of QC samples calculated from grand total of 420,173.

NOTE: Analysis, for metrics purposes used in this report, generally refers to a parameter determined in each sample in a batch. Determination of several metals in a sample (e.g. iron, nickel, lead) would equal as three (3) analyses in the expression of totals such as those in the Analyses table on the preceding page. This means of calculation that has been used for many years with batch and method, is a useful comparative measure of laboratory performance and is one of the fundamental constants in applying quality control measures.

	No. of Batches	Percent of total
Total number of analytical batches:	15,695	100.00%
Total number of rejected analytical batches:	147	0.94%
Incomplete batches (as of March 26, 2017):	360	2.29%
	16,202	

Outside laboratories

A small number of permit required analyses are contracted out, as summarized below.

Results from sub-contracted labs.		
Laboratory	Analytes	Total in-house Analytes
Frontier Analytical	4533	1.43%
Weck Laboratory	37	0.01%
Fruit Growers Laboratory, Inc.	94	0.03%
San Diego Water Quality Laboratory	110	0.03%
Test America	682	0.22%
Total outside results:	5,456	1.72%

* Nautilus Environmental results not included in calculations.

QA Plan:

A copy of our Laboratory's current Quality Assurance Plan is included as Attachment 4. The Quality Assurance Plan was updated in March 2018.

Summary of 2017 Performance Testing (PT) Studies:

The Environmental Chemistry Services Laboratories participated in required ELAP and USEPA PT studies throughout the year. **Each of the geographically separated laboratory facilities participated individually (as required by ELAP) in** 31 PT studies for 2017**. PT studies successfully completed were purchased from ERA, Absolute Standards, and Phenova. When results submitted were determined to be outside of study acceptance limits, the laboratory reviewed its internal** protocols, modified procedures as necessary, and **participated in a subsequent study for the analytes in question. A PT study was completed with satisfactory results for all analytes by in-house chemistry laboratories.**

The results of the Laboratory PT studies for 2017 are summarized in the following tables.

Alvarado Environmental Chemistry Laboratory: See attachment 6 for copy of reports.

PT Study	Number of Analytes	Number of Acceptable results	Success Rate (%)
WP 0070	1	1	100%
R20556 (DRO GRO CN)	3	3	100%
R20556 (Pest in WW)	19	14	74%
R20557 (OPP in soil)	11	11	100%
R2557 (PCBs in soil)	7	7	100%
R2557 (Pest in soil)	15	15	100%
R20673 (Pest in WW)	19	19	100%
HW0117	28	28	100%
HW0417	125	122	98%
HW0717	31	31	100%
WP2017	14	14	100%
WP267	2	2	100%
WP268	31	31	100%
WP270	2	2	100%
WP0317	169	167	99%
WP0417	18	18	100%
WP266	8	8	100%
Total analytes:	**503**	**493**	**98%**

Metro Biosolids Center (MBC) Chemistry Laboratory: See attachment 8 for copy of reports.

PT Study	Number of Analytes	Number of Acceptable results	Success Rate (%)
WP0317	5	5	100%
HW0417	2	2	100%
Total analytes:	**7**	**7**	**100%**

Pt. Loma Environmental Chemistry Laboratory: See attachment 9 for copy of reports.

PT Study	Number of Analytes	Number of Acceptable results	Success Rate (%)
HW0417	2	2	100%
WP0317	10	10	100%
WP0417	1	1	100%
WP0517	1	1	100%
HW0717	2	2	100%
Total analytes:	**16**	**16**	**100%**

South Bay Wastewater Chemistry Laboratory: See attachment 10 for copy of reports.

PT Study	Number of Analytes	Number of Acceptable results	Success Rate (%)
HW07017	2	2	100%
WP267	1	1	100%
WP268	2	2	100%
WP270	1	1	100%
WP0417	15	14	93%
WP0517	2	2	100%
WS249	1	1	100%
Total analytes:	**24**	**23**	**96%**

E. Staff contributing to this Report

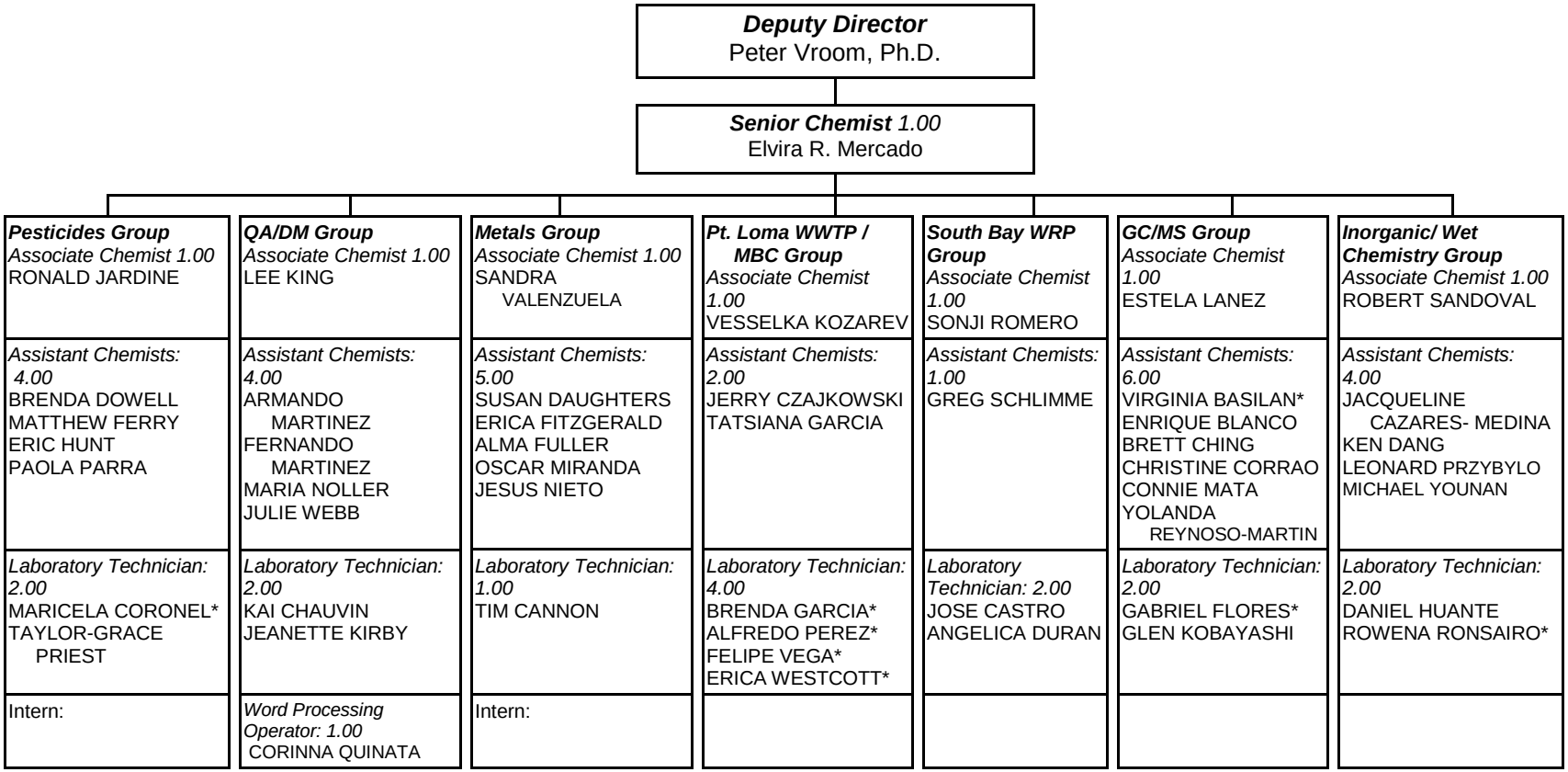
Staff Contributing to this Report in 2017

Initials	ID	First Name	Last Name	Signature
KB	KBANU	Khaleda	Banu	
VB	VBASILAN	Virginia	Basilan	
EB	EBLANCO	Enrique	Blanco	
TC	TJCANNON	Tim	Cannon	
JC	JCASTRO	Jose	Castro	
JCM	JCAZARES	Jacqueline	Cazares-Medina	
KC	KCHAUVIN	Kai	Chauvin	
BC	BCHING	Brett	Ching	
MC	MCORONEL	Maricela	Coronel	
~~CM~~	CCORRAO	Christine	Corrao	
JCM	JCZAJKOWSKI	Jerry	Czajkowski	
KD	KDANG	Ken	Dang	
MM	MMDAOUD	Mike	Daoud	
SD	SDAUGHTERS	Susan	Daughters	
BD	BDONAHUE	Brad	Donahue	
BLD	BDOWELL	Brenda	Dowell	
ACD	ADURAN	Angelica	Duran	
AJE	AJENTERA	Angela	Entera	
MF	MFERRY	Matthew	Ferry	
EFITZ	EFITZGERALD	Erica	Fitzgerald	
GAF	GAFLORES	Gabriel	Flores	
AF	AFULLER	Alma	Fuller	
BSG	BSGARCIA	Brenda	Garcia	
TG	TGARCIA	Tatsiana	Garcia	
NG	NGRIMAUD	Nicole	Grimaud	
DH	DHUANTE	Daniel	Huante	
EH	EHUNT	Eric	Hunt	
RJ	RJARDINE	Ron	Jardine	
BK	BKELLEY	Brett	Kelley	
~~LK~~ LNK	LKING	Lee	King	
JK	JKIRBY	Jeanette	Kirby	
GK	GKOBAYAHI	Glen	Kobayashi	
VK	VKOZAREV	Vesselka	Kozarev	
EL	ELANEZ	Estela	Lanez	
AM	AMARTINEZ	Armando	Martinez	
FM	FMARTINEZ	Fernando	Martinez	
CGM	CONNIEM	Connie	Mata	
JM	JMCANALLY	Jeff	McAnally	
EM	EMERCADO	Elvie	Mercado	
OM	OMIRANDASAND	Oscar	Miranda	
JN	JNIETO	Jesus	Nieto	
MN	MNOLLER	Maria	Noller	
PP	PPARRA	Paola	Parra	
CP	CPAYAN	Ciara	Payan	
AP	ALFREDOP	Alfredo	Perez	
TGP	TPRIEST	Taylor	Priest	
LP	LPRZYBYLO	Leonard	Przybylo	
CAQ	CQUINATA	Corinna	Quinata	
YXR	YREYNOSOMAR	Yolanda	Reynoso Martin	
SR	SEROMERO	Sonji	Romero	
RR	RRONSAIRO	Rowena	Ronsairo	
RS	RSANDOVAL	Robert	Sandoval	
VS	VSANTIBANEZ	Victoria	Santibanez	
GS	GSCHLIMME	Greg	Schlimme	
SV	SVALENZUELA	Sandra	Valenzuela	
FV	FVEGA	Felipe	Vega	
JW	JWEBB	Julie	Webb	
EW	EWESTCOTT	Erica	Westcott	
MY	MYOUNAN	Michael	Younan	

Figure 1. Chemistry Laboratory Organization Chart.

Public Utilities Department
Environmental Monitoring and Technical Services Division

Environmental Chemistry Services



*Primarily assigned to this group but performs additional assignment in support of another ECS work group

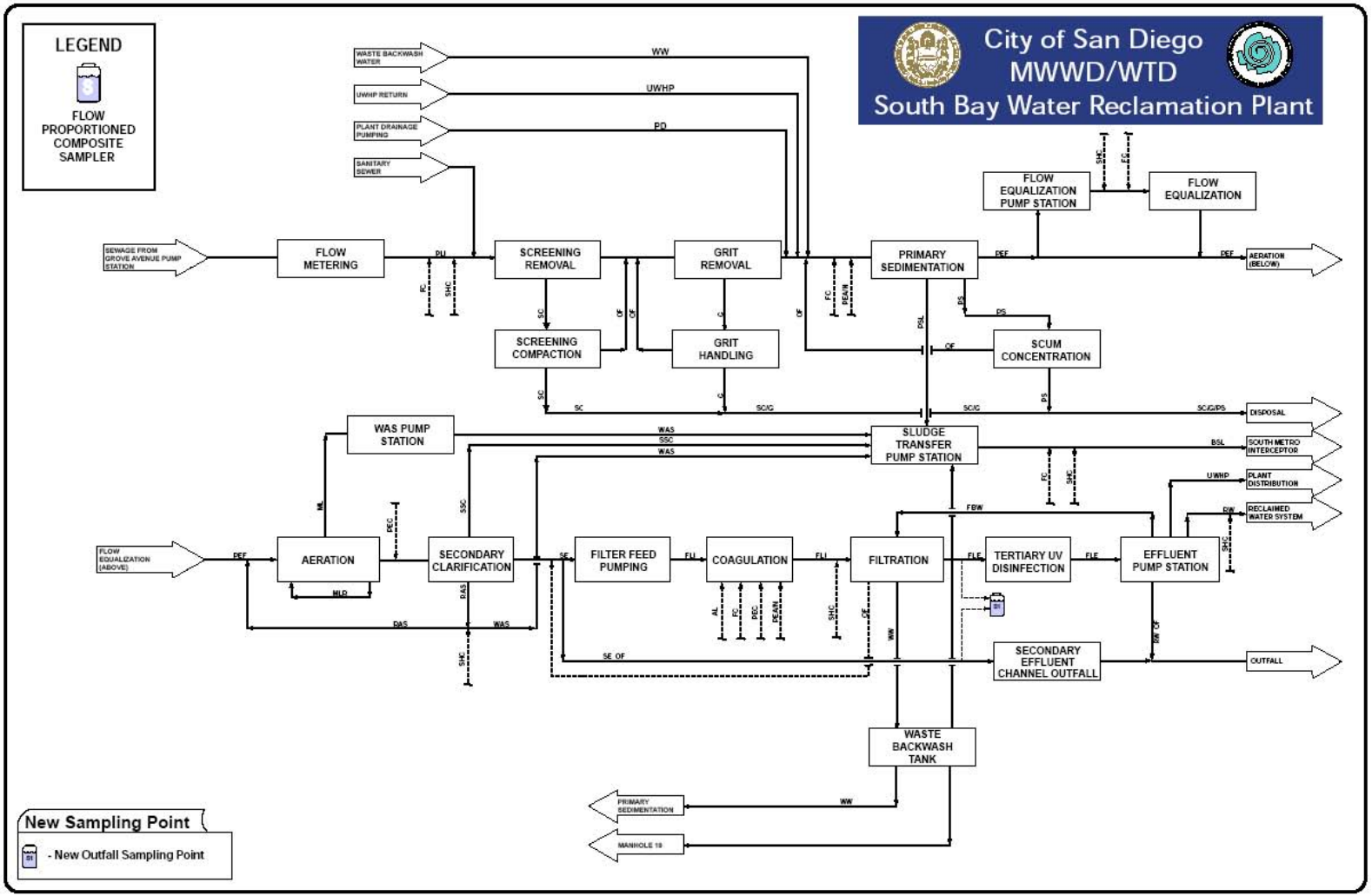


Figure 1 - New Effluent to Ocean Outfall Sample Point

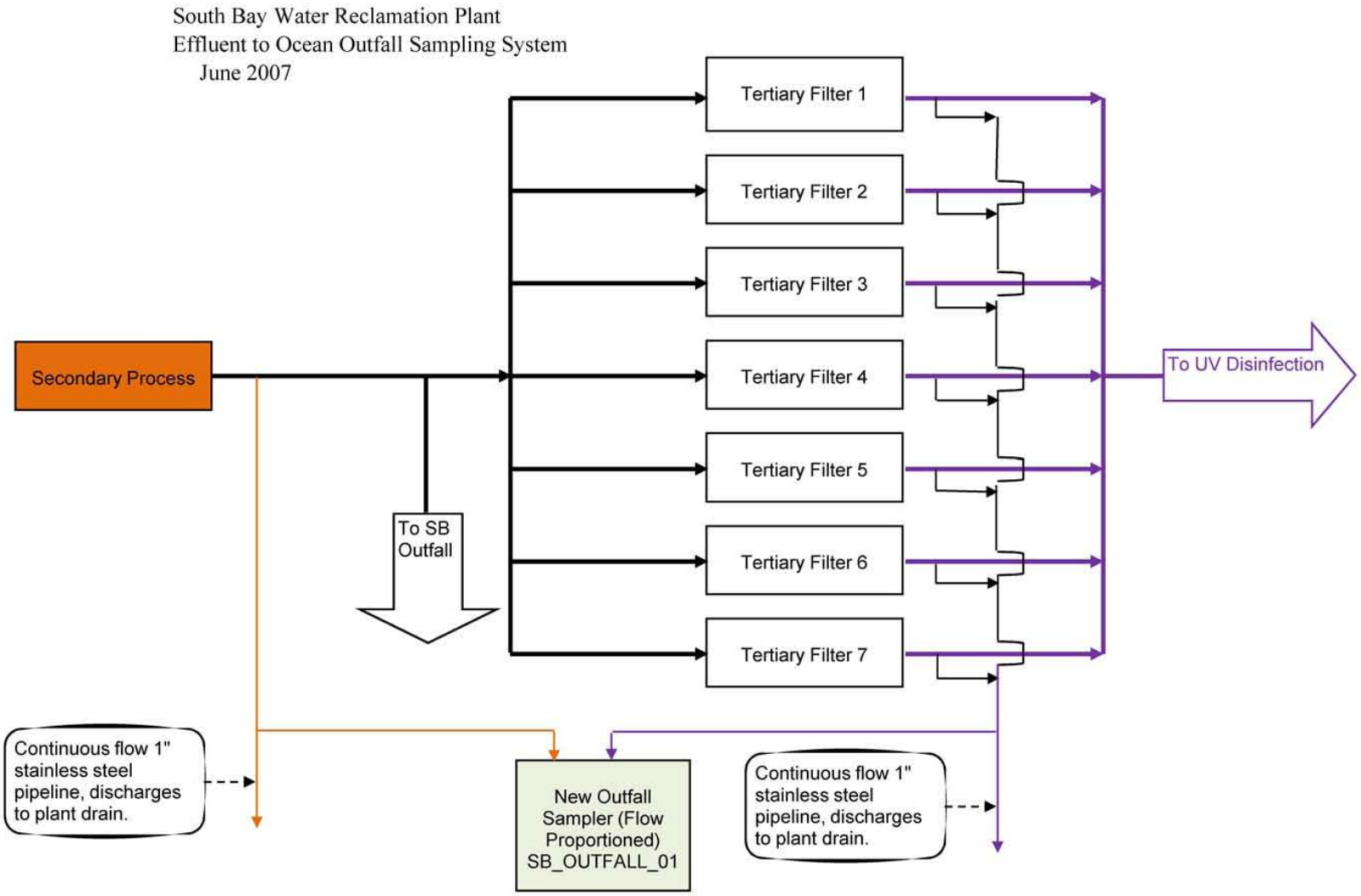


Figure 2 - Detail of Effluent Sampling System

This page intentionally left blank.