Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Regional Sewerage Program Technical Committee Meeting

AGENDA
Thursday, July 30, 2015
4:00 p.m.

Location
Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708

Thursday, July 30, 2015

Call to Order and Roll Call

1. **Approval of Minutes**
   A. Minutes of April 30, 2015 Meeting

2. **Action Items**
   No action items to include.

3. **Informational Items**
   A. Regional Pretreatment Program Local Limits Update (Written/PowerPoint)
   B. Odor Study Update (PowerPoint)
   C. Water Conservation Update (PowerPoint)
   D. Regional Contract Review (Audit) – General Findings (PowerPoint)

4. **Receive and File**
   A. Draft Minutes of the Pretreatment Committee
   B. Building Activity Report (YTD)
   C. Recycled Water Distribution - Operations Summary
   D. Draft Special Joint Workshop Agenda
   E. Recycled Water Program Strategy (Written/PowerPoint)
   F. Wastewater Facilities Master Plan (Written/PowerPoint)

5. **Other Business**
   A. IEUA General Manager's Update
   B. Committee Member Requested Agenda Items for Next Meeting
   C. Committee Member Comments
   D. Next Meeting – August 27, 2015

6. **Adjournment**

DECLARATION OF POSTING

I, Jill Kiefer, Executive Assistant of the Inland Empire Utilities Agency, A Municipal Water District, hereby certify that a copy of this agenda has been posted by 5:30 p.m. in the foyer at the Agency's main office, 6075 Kimball Avenue, Building A, Chino, CA on Monday, July 27, 2015.

Jill Kiefer

Jill Kiefer

APPROVAL OF MINUTES

1A

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Regional Sewerage Program
Technical Committee Meeting

MINUTES OF April 30, 2015 MEETING

CALL TO ORDER

A regular meeting of the IEUA/Regional Sewerage Program – Technical Committee was held on Thursday, April 30, 2015, at the Inland Empire Utilities Agency located at 6075 Kimball Avenue, Chino, California. Ryan Shaw, City of Ontario, called the meeting to order at 4:04 p.m.

ATTENDANCE

Committee Members:

Jesus Plasencia	City of Chino
Steve Nix	City of Chino Hills
Chuck Hays	City of Fontana
Mike Hudson	City of Montclair
Ryan Shaw	City of Ontario
Rosemary Hoerning	City of Upland
Braden Yu	Cucamonga Valley Water District
P. Joseph Grindstaff	Inland Empire Utilities Agency

Absent Committee Members:

None.

Others Present:

Cheyanne Reseck-Francis	Inland Empire Utilities Agency
Christina Valencia	Inland Empire Utilities Agency
Ernest Yeboah	Inland Empire Utilities Agency
Gordon Nichols	BIA
Jason Pivovaroff	Inland Empire Utilities Agency
Kathy Besser	Inland Empire Utilities Agency
Lisa Morgan-Perales	Inland Empire Utilities Agency
Martha Davis	Inland Empire Utilities Agency
Peter Soelter	Inland Empire Utilities Agency
Sapna Nangia	Inland Empire Utilities Agency
Shawn Perumean	Cucamonga Valley Water District
Sylvie Lee	Inland Empire Utilities Agency
Tina Cheng	Inland Empire Utilities Agency

1. **APPROVAL OF MINUTES**

A. **Minutes of February 26, 2015 Meeting**

Motion: By Rosemary Hoerning/City of Upland and seconded by Chuck Hays/City of Fontana to approve the minutes of the February 26, 2015 Technical Committee meeting.

Motion carried: Unanimously.

2. **ACTION ITEMS**

A. **Regional Wastewater and Recycled Water Programs Proposed Biennial Budget for Fiscal Years 2015/16 and 2016/17 and Proposed Rates/Fees for Fiscal Years 2015/16-2019/20**

Christina Valencia/IEUA thanked Gordon Nichols of the BIA for being at this meeting. She gave a presentation on the biennial budget, recycled water rates, and water connection fee, noting that there is no recommendation for the water connection fee and that it is being presented for information only. Ms. Valencia further stated that the water connection fee is new and that IEUA will be levying this charge and collecting it directly. She continued by stating that the recycled water and recharge water rates are not included in this recommendation, but they remain unchanged and will be brought back in July 2015 to be adopted in October 2015 with an effective date of July 1, 2016. The goal of the new rate structure is to reach full cost of service, which the Agency has been trying to achieve for years. The wastewater and water connection fees will be phased in over a five year period and are anticipated to reach full cost of service in FY 2017/18.

Motion: By Chuck Hays/City of Fontana and seconded by Braden Yu/CVWD to make recommendation to the IEUA Board of Directors and Policy Committee to approve the proposed:

1. Fees and Rates for FYs 2015/16-2019/20 for the Agency's Regional Wastewater Capital Improvement (RC) fund and Recycled Water (WC) fund; and

2. Biennial budget for FYs 2015/16 and 2016/17 for the Agency's Regional Wastewater Operations and Maintenance (RO) fund, Regional Wastewater Capital Improvement (RC) fund, and Recycled Water (WC) fund.

Motion carried: Unanimously.

3. **INFORMATIONAL ITEMS**

A. **Financial Update**

Javier Chagoyen-Lazaro/IEUA gave a brief presentation on the 2nd Quarter Budget Variance. He stated that recycled water sales have brought in $6.5 million in revenue in the first half of the year. Many projects have gotten off to a slow start, and will need to be sped up to meet deadlines. He stated that the Wineville project, for instance, was anticipated to be in service by July, and was targeted for June. Many projects currently in progress are on time and under budget. He stated that utility fees have been lower and the Agency's vacancy factor remains at 13.1%, or 38 full-time employees (FTEs).

B. **Regional Drought Update**

Jason Pivovaroff/IEUA gave a brief update on the drought and regional water supply conditions. He stated that there are many conservation and water use efficiency (WUE) opportunities for member agencies and their customers, and that this level of drought only occurs every 20 to 30 years. He stated that the governor issued a state of emergency in January 2014, mandated a cut in water use in February 2014, and issued emergency regulations and prohibited activities in July 2014. In March 2015, Governor Brown reissued regulations and mandated expanded and additional restrictions.

Lisa Morgan-Perales/IEUA stated that in July 2014, restrictions were: not allowing water runoff, washing vehicles without a hose nozzle in use, and use of fountains and water features. In March 2015, the additional restrictions issued were: no watering 48 hours after a rain event, drinking water served by request only at restaurants, watering two days per week, and hotels allowing a deference of linen change for guests. She stated that there are many tools available and ways to conserve, such as building tools/software for rate modeling, regional turf removal programs, tech-based software, and changing behaviors of normal use. Many of these resources may be found at www.socalwatersmart.com.

4. **RECEIVE AND FILE ITEMS**

A. **Draft Regional Policy Committee Agenda**

The Draft Regional Policy Committee Agenda was received and filed by the Committee.

B. **Building Activity Report (YTD)**

The Building Activity Report (YTD) was received and filed by the Committee.

C. **Recycled Water Operations Summary**

The Recycled Water Operations Summary was received and filed by the Committee.

D. **IEUA Quarterly Water Newsletter**

The IEUA Quarterly Water Newsletter was received and filed by the Committee.

E. **Commercial, Industrial, Institutional (CII) Turf Rebate Update**

The Commercial, Industrial, Institutional (CII) Turf Rebate Update was received and filed by the Committee.

F. **Water and Wastewater Connection Fee Study**

The Water and Wastewater Connection Fee Study was received and filed by the Committee.

5. **OTHER BUSINESS**

A. **IEUA General Manager's Update**

P. Joseph Grindstaff reiterated the drought conditions and related issues forthcoming.

B. **Committee Member Requested Agenda Items for Next Meeting**

None.

C. **Committee Member Comments**
None.

D. **Next Meeting – May 28, 2015**

6. **ADJOURNMENT** - Meeting was adjourned at 5:22 p.m.

Transcribed by:

Cheyanne Reseck-Francis
Acting Executive Assistant, IEUA

INFORMATION
ITEM
3A

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date:	July 30, 2015
To:	Regional Technical Committee
From:	Inland Empire Utilities Agency
Subject:	Regional Pretreatment Program Local Limits Evaluation

RECOMMENDATION

This is an information item on the Regional Pretreatment Program Local Limits Evaluation for the Regional Technical Committee to receive and file.

BACKGROUND

The Agency's Regional Pretreatment Program is designed to protect the regional water recycling plants, personnel, effluent and sludge from pass-through or interference from pollutants discharged by Significant Industrial Users (SIUs). The pretreatment program includes certain required elements, including a system of administering a control mechanism (wastewater discharge permit), legal authority (ordinance), and local limits (permit discharge limits).

Local Limits are site specific discharge limits to regulate SIUs developed according to 40 CFR 403.5 (c) and 403.8 (f)(4). SIUs are defined as those businesses subject to federal categorical pretreatment regulations or industries that discharge a volume greater than 25,000 gallons per day or loading defined in specific numeric terms by federal regulations. The Agency's regional pretreatment program is only required to regulate SIUs or any industry that has the potential to upset the regional water recycling plants. All other residential, commercial, non-permitted industrial dischargers or pollutant sources are considered background level and uncontrolled sources when developing local limits.

The Agency's current local limits for the regional pretreatment program were developed in 2004 and adopted in 2006. In 2013 the Regional Water Quality Control Board (RWQCB) required the Agency to reevaluate its local limits in a formal study as a result of a Pretreatment Compliance Audit. This requirement was made based on the fact that the Agency had not reevaluated its local limits in several years. Additionally, changes in the NPDES permit limits, groundwater recharge regulations, improvements in the regional pretreatment program, reduction in permitted industries, and enhancement of the treatment processes at the Agency's regional water recycling plants also justified the need to reevaluate the local limits.

On May 21, 2014, the Agency retained Arcadis U.S. Inc. to provide consulting services to reevaluate and develop logical, technically based and defensible local limits that would be effective, enforceable, and applicable to all SIUs within the Agency's service area.

The local limits evaluation process involves calculating the pollutant loading that can be received at each of the water recycling plant headworks, without exceeding specified criteria, such as NPDES permit limits, and then allocating the loading among controllable sources (SIUs) and uncontrollable sources (residential, commercial, non-permitted industries).

The development of local limits involves the following steps:

- Identify potential pollutants of concern (POCs)
- Analyze historical wastewater and flow data
- Calculate maximum allowable headworks loadings (MAHLs) for each potential POC
- Perform sensitivity analyses to refine potential POCs
- Calculate allowable SIU loadings and determine allocation strategies for each POC

Once the POCs are identified, wastewater is analyzed for concentration and flow. Although the Agency has a robust set of historical treatment plant influent/effluent and SIU data, there were data gaps in terms of background loading of potential POCs. Additional monitoring was conducted to fill this data gap.

Once the data was collected and analyzed, the calculation of allowable headworks loadings (AHLs) for each potential POC were conducted, from which the MAHLs were determined. The MAHLs were used to perform sensitivity analyses to refine the potential POCs. The outcomes were then used to calculate the allowable industrial loadings (AIL). The AIL is the portion of the MAHL that can be allocated among the SIUs. Arcadis used 10% for the safety and growth factor. For purposes of this study, non-detect (ND) laboratory results were substituted with ½ of their reporting limits to allow for calculations to determine pollutant removal efficiencies.

Based on the screening criteria above, data evaluation, and EPA guidance documents the consultant determined there were 29 potential POCs.

Table 1 summarizes the POCs, current local limits, and proposed local limits after completion of the sensitivity analyses. For those POCs where a local limit is not recommended, pollutant monitoring will be conducted as part of the pretreatment compliance monitoring program.

On April 7, 2015, the draft local limits report was distributed to the Regional Pretreatment Committee members for review and comment. The comments received from the committee members were incorporated into the final report. Pretreatment staff will be submitting the local limits report to the RWQCB as required by 40 CFR 403.18. If the proposed local limits are approved by the RWQCB, staff will present to the Regional Technical Committee in November. If the Committee concurs with the proposed changes to the local limits, staff will recommend the Agency's Board adopt a Notice of Intent to revise the local limits and set a public hearing for adoption of the local limits at the December Board meeting.

Table 1: Current Local Limits vs. Proposed Local Limits

POCs	Current Limits (mg/L)	Proposed Limits (mg/L)	Comments
Cadmium	2.8	--	Background, RP-1 influent, and CCWRF influent all non-detect; monitor via IEUA monitoring program
Chromium	60	2.79	Daily max; Based on CCWRF UCL
Copper	45	2.29	Daily max; Based on CCWRF UCL
Cyanide (free)	1.2	--	Monitor via IEUA monitoring program
Lead	14	1.38	Daily max; Based on CCWRF CFL (applied to contributory SIUs, Net Shapes and Envision Plastics); set alert level of 0.02 mg/L for other SIUs
Nickel	45	12.5	Daily max; Based on CCWRF CFL (applied to contributory SIUs, Evolution Fresh, Inland Powder, Jewlland-Freya, Net Shapes, OW Lee, Parco, Schlosser Forge, Sun Badge, and Envision Plastics); set alert level of 0.19 mg/L for other SIUs
Selenium	--	--	Monitor via IEUA monitoring program; work with Sun Badge to assess BMPs
Zinc	50	3.74	Daily max; Based on CCWRF UCL
Bis(2-Ethylhexyl)phthalate	--	--	Monitor via IEUA monitoring program
Chloride	--	--	Monitor via IEUA monitoring program
Hardness	--	--	Monitor via IEUA monitoring program
Manganese	--	--	Monitor via IEUA monitoring program
Sodium	--	--	Monitor via IEUA monitoring program
Sulfate	--	--	Monitor via IEUA monitoring program
TDS	800/550*	800/550*	Monthly average and measured as TDS (fixed)

Notes: mg/L = milligrams per liter; * = TDS limits for existing SIUs and new SIUs

The Regional Pretreatment Program Local Limits are consistent with the Agency's business goal of *Environmental Stewardship* by meeting federal, state and local pretreatment regulations within the Agency's service area, help ensure protection of the water recycling plants, and safeguarding public health and the environment.

Pretreatment Program
Local Limits Update
July 2015

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Craig Proctor
Pretreatment and Source Control Supervisor

Why Reevaluate Local Limits?

* All pretreatment programs required to have local limits
* Current local limits developed in 2004
* EPA Pretreatment Program Audit requirement
* Revision of local limits needed due to changes in:
  * Pretreatment program
  * NPDES permit regulations
  * Groundwater recharge regulations

Local Limit Objectives

* Protect the regional water recycling plants and beneficial reuse
* Be technically based/defensible
* Supplement federal categorical limits & ordinance prohibitions
* Minimize impact on industrial users
* Be easy to administer

Local Limits Development Process

* Identified 29 Pollutants of Concern
* Analyze data
* Calculate maximum loadings for each pollutant at the wastewater treatment plants
* Allowances for safety and growth
* Refine pollutant list & calculate limit for Industries

Proposed Local Limits

POCs	Current Limit (mg/L)	Proposed Limit (mg/L)
Cadmium	2.8	---
Chromium	60	2.79
Copper	45	2.29
Cyanide (free)	1.2	---
Lead	14	1.38
Nickel	45	12.5
Zinc	50	3.74
TDS	800/550*	800/550*

* TDS limits for existing and new SIUs

Local Limits Next Steps

* Draft report to Regional Committees (July 2015)
* Submit to RWQCB for comment (August 2015)
* Final report to Regional Committees (Nov. 2015)
* Public Hearing & Board adoption (Dec. 2015)

Consistent with the Agency's business goal of Environmental Stewardship by meeting federal, state and local pretreatment regulations within the IEUA service area and safeguarding public health and the environment.

Imagine the result

Inland Empire Utilities Agency

FINAL
Local Limits Report

June 2015

(revised July 2015)

ARCADIS

Local Limits Report

Prepared for:
Inland Empire Utilities Agency

Prepared by:
ARCADIS U.S., Inc.
320 Commerce
Suite 200
Irvine
California 92602
Tel 714 730 9052

Our Ref.:
05484007.0001

Date:
June 2015
(revised July 2015)

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Tables

Figures

Appendices

Acronyms and Abbreviations

AHL	Allowable Headworks Loading
Avg	average
Basin Plan	Water Quality Control Plan for the Santa Ana River Basin
BOD	Biological Oxygen Demand
BOD_5	5-Day Biochemical Oxygen Demand
$C_{dginhib}$	Anaerobic digestion inhibition criteria
C_{eff}	Effluent discharge limit
C_{inhib}	Activated sludge or nitrification inhibition criteria
C_{slgstd}	Land application sludge standard
CCWRF	Carbon Canyon Water Recycling Facility
CFR	Code of Federal Regulations
CFU/100 ml	Colony Forming Units per 100 milliliters
COD	Chemical Oxygen Demand
CVWD	Cucamonga Valley Water District
GMZ	Groundwater Management Zone
gpd	gallons per day
H & S	Health and Safety
IEUA	Inland Empire Utilities Agency
lb/day	pounds per day
MAHLs	Maximum Allowable Headworks Loadings
Max	maximum
MBAS	Methylene Blue Active Substances
MBR	membrane bio-reactor
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mgd	million gallons per day
MPN/100	Most Probably Number per 100 milliliters
MREs	Mean Removal Efficiencies
ND	Not detected
NPDES	National Pollutant Discharge Elimination System
NRW	Non-Reclaimable Wastewater
PCBs	Polychlorinated Biphenyls
POCs	Pollutants of Concern
Q_{dgstr}	Sludge flow rate to digester
Q_{sldg}	Sludge flow rate to disposal

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Acronyms and Abbreviations (cont.)

Q_{WRF}	Influent flow rate
RE_{PRIM}	Removal efficiency from headworks to primary effluent
RE_{WRF}	Removal efficiency from headworks to final effluent
REC-1	Water Contact Recreation
REC-2	Non-contact Water Recreation
RP	Regional Water Recycling Plant
RWQCB	Regional Water Quality Control Board
SIU	Significant Industrial User
SVOCs	Semivolatile Organic Compounds
TDS	Total Dissolved Solids
THM	Total Trihalomethanes
TIN	Total Inorganic Nitrogen
TKN	Total Kjeldahl Nitrogen
TOC	Total Organic Carbon
TSS	Total Suspended Solids
ug/L	micrograms per liter
USEPA	U.S. Environmental Protection Agency
VOCs	Volatile Organic Compounds
WILD	Wildlife Habitat
WRF	Water Recycling Facility

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Executive Summary

Introduction and Local Limits Overview

Local limits are designed to control industrial user discharges to wastewater treatment plants, protecting the plants from pass-through (i.e., effluent concentrations exceeding permit limits) and inhibition of treatment processes, as well as protecting the quality of the biosolids and the health and safety of collection system workers. Local limits regulate permitted significant industrial users (SIUs) and are required to be developed in accordance with the requirements listed in 40 CFR 403.5 (c) and 403.8(f)(4). Unlike federal categorical standards and general discharge prohibitions, local limits are site-specific and take into account the quality and quantity of SIU discharges.

Inland Empire Utilities Agency's (IEUA's) current local limits for SIUs were developed in 2004 for the following parameters: cadmium, chromium, copper, cyanide (available), lead, nickel, zinc, total dissolved solids (TDS) and pH. The local limits are implemented and enforced through industrial wastewater discharge permits. During a 2012 Pretreatment Compliance Audit, the Santa Ana Regional Water Quality Control Board (RWQCB) expressed concern about the implementation of the 2004 limits and required IEUA to reevaluate the local limits.

The local limits process involves calculating the pollutant loading that can be received at the treatment plant headworks, without exceeding specified criteria (such as effluent permit limits), and then allocating that loading among controllable sources (i.e., permitted SIUs) and uncontrollable sources (i.e., domestic, commercial, and non-permitted industrial users).

The development of local limits involves the following steps:

- Identify potential pollutants of concern (POCs)
- Analyze wastewater concentration and flow data
- Calculate maximum allowable headworks loadings (MAHLs) for each potential POC
- Perform sensitivity analyses to refine potential POCs
- Calculate allowable SIU loadings and determine allocation strategies for each POC

The local limit is an expression of the portion of the allowable industrial loading (AIL) allocated to each permitted SIU. The AIL may be allocated among the SIUs using a variety of methods:

- Uniform Concentration Limit (UCL), in which the AIL is divided by the total SIU flow to determine a single concentration limit applied all SIUs, regardless of their individual pollutant contributions

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- Contributory Flow Limit (CFL), in which the AIL is divided by the total flow of contributing SIUs (i.e., those discharging concentrations exceeding background levels) to determine a single concentration limit applied to these SIUs. A concentration limit based on the background concentration is applied to non-contributing SIUs.

The allocation strategy selected is POC-specific, meaning that local limits for some POCs may be based on UCLs and for others, on CFLs.

IEUA Collection System

IEUA provides regional wastewater treatment services for a 242 square mile service area in San Bernardino County. Approximately 850,000 residents from seven contracting cities and agencies – Chino, Chino Hills, Fontana, Montclair, Ontario, Upland, and the Cucamonga Valley Water District (CVWD) – discharge to IEUA's collection system. IEUA owns and operates five regional water recycling plants: Regional Water Recycling Plant No. 1 (RP-1), RP-2, RP-4, RP-5, and Carbon Canyon Water Recycling Facility (CCWRF). Wastewater treatment processes for RP-1, RP-4, RP-5, and CCWRF are very similar and include preliminary treatment using bar screens and aerated grit chambers, addition of coagulant and flocculant prior to primary settling tanks, aeration tanks with activated sludge and nitrification/denitrification processes, secondary clarifier tanks, tertiary treatment using sand filtration, disinfection using sodium hypochlorite, and dechlorination. Biosolids are anaerobically digested at RP-1 and RP-2, with RP-1 treating biosolids from RP-1 and RP-4 and RP-2 treating biosolids from the RP-5 and CCWRF facilities. The treated biosolids are then transferred to a co-composting facility. Wastewater can be diverted between the treatment plants via available routing options built into the regional collection system.

Water recycling is a critical component of the water resources management strategy and IEUA encourages maximum use of the recycled water resource for beneficial purposes, such as landscape and agricultural irrigation, construction, and industrial uses thereby conserving water within the Chino Basin and reducing the dependency on imported water. IEUA also operates the Non-Reclaimable Wastewater System (NRWS), consisting of three trunk lines that convey wastewater with higher brine concentration outside the Chino Groundwater Basin area due to the restrictive salinity requirements imposed upon IEUA's regional water recycling plants. Wastewaters containing high levels of dissolved salts or other chemicals that may degrade or limit the use of recycled water are collected from the NRW industrial users.

IEUA and the contracting cities designate industrial users as SIUs according to the criteria listed in 40 CFR 403.3, which includes:

- Subject to categorical pretreatment standards described in 40 CFR 403.6 and 40 CFR Chapter I, subchapter N,
- Discharge an average of 25,000 gallons per day (gpd) or more of process wastewater,
- Discharge process wastewater which makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant, or
- Designated as such by the permitting authority on the basis that the industrial user has a reasonable potential to adversely affect the treatment plant operations or violate any pretreatment standard or requirement.

Local limits apply to SIU discharges and are site-specific, taking into account the quality and quantity of industrial discharges to the IEUA collection system. Twenty-two industrial users have been identified as SIUs and are permitted to discharge wastewater to the IEUA collection system.

Historical Data and 2014 Additional Sampling

IEUA performs wastewater sampling at the water recycling plants in compliance with discharge permits, as well as part of routine operational procedures. For this local limits update, analytical data for metals, general chemistry parameters, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), dioxins, pesticides and polychlorinated biphenyls (PCBs) from the water recycling plants for the last five years (2009 through 2014) were compiled and reviewed. Water recycling plant influent and effluent flow data from this time period were also reviewed.

For the SIUs, sampling frequency and required analytical parameters are based on the industrial discharger permits; therefore, the historical SIU analytical data sets vary depending on individual SIUs' discharge permit requirements. Analytical and flow data from the 22 permitted SIUs from 2009 through 2014 were evaluated.

The historical data represent a robust data set for influent and effluent samples at the treatment plants; however, local limits calculations also require an assessment of background (i.e., domestic and commercial sources) loading. Additional sampling was performed during September and October 2014 to provide information on background concentrations, confirm removal efficiencies, and allow for influent mass balance assessments at the treatment plants.

Pollutants of Concern (POCs)

The first step in the local limits process is to identify potential pollutants of concern (POCs). A constituent is identified as a site-specific pollutant of concern (POC) if it has been detected in the influent, effluent, or biosolids in concentrations that exceed specific effluent, biosolids, operational, and health and safety criteria. The POC screening process was performed using methodology described in the 1987 USEPA Guidance Manual on the Development and Implementation of Local Limits Under the Pretreatment Program (1987 USEPA Guidance). A constituent was considered to be a potential POC if one of the following criteria were met:

- Maximum effluent concentration exceeds one-half of the most stringent effluent criteria.
- Maximum influent concentration exceeds the most stringent effluent criteria.
- Maximum influent concentration exceeds one-fourth of the most stringent activated sludge or nitrification inhibition criteria.
- Maximum influent concentration exceeds 1/500th of the anaerobic digestion inhibition criteria
- Maximum influent concentration exceeds the health and safety screening levels.
- Maximum biosolids concentration exceeds one-half the biosolids criteria.

Based on the screening and data evaluation process, the potential POCs are summarized in Table ES1.

Table ES1. Potential POCs

National POCs	Screened POCs
Ammonia	Aluminum
Arsenic	Bis(2-Ethylhexyl)phthalate
BOD5	Boron
Cadmium	Chloride
Chromium	Cyanide (free)
Copper	Fluoride
Cyanide (total)	Hardness
Lead	Iron
Mercury	Manganese
Molybdenum	Sodium
Nickel	Sulfate
Selenium	TDS
Silver	Toluene
TSS	Total Nitrogen
Zinc	

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Flows and Loadings

The second step in the local limits process is to analyze wastewater concentration and flow data. Wastewater flow and pollutant concentration data were used to estimate influent pollutant loadings and pollutant contributions from industrial and domestic/commercial (i.e., background) sources. This was followed by the third step in the local limits process – calculation of the Allowable Headworks Loadings (AHLs) for each potential POC. The maximum allowable headworks loadings (MAHLs) are the lowest, or most conservative, of the AHLs calculated for the POCs. The MAHLs are used in the fourth step of the local limits process to perform sensitivity analyses to refine the potential POCs. Table ES2 presents the POCs that meet one or both of the guidance thresholds in the sensitivity analysis (bold), or had previous existing local limits (*).

Table ES2. POCs Based on Sensitivity Analysis

National POCs	Screened POCs
Ammonia	Aluminum
Arsenic	**Bis(2-Ethylhexyl)phthalate**
BOD5	Boron
Cadmium*	**Chloride**
Chromium*	Cyanide (free)*
Copper*	Fluoride
Cyanide (total)*	**Hardness**
Lead*	Iron
Mercury	**Manganese**
Molybdenum	**Sodium**
Nickel*	**Sulfate**
Selenium	**TDS***
Silver	Toluene
TSS	Total Nitrogen
Zinc*	

*POC with existing Local Limit

Control Strategies and Recommended Local Limits

Control Strategies for Conventional Pollutants and for TDS were analyzed. Table ES3 presents the recommended local limits compared with the 2004 limits.

Table ES3. Recommended Local Limits

POCs	2004 Limits (mg/L)	2014 Limits (mg/L)	Comments
Cadmium	2.8	--	Background, RP-1 influent, and CCWRF influent all non-detect; monitor via IEUA monitoring program
Chromium	60	2.79	Daily max; Based on CCWRF UCL
Copper	45	2.29	Daily max; Based on CCWRF UCL
Cyanide (free)	1.2	--	Monitor via IEUA monitoring program
Lead	14	1.38	Daily max; Based on CCWRF CFL (applied to contributory SIUs, Net Shapes and Envision Plastics); set alert level of 0.02 mg/L for other SIUs
Nickel	45	12.5	Daily max; Based on CCWRF CFL (applied to contributory SIUs, Evolution Fresh, Inland Powder, Jewlland-Freya, Net Shapes, OW Lee, Parco, Schlosser Forge, Sun Badge, and Envision Plastics); set alert level of 0.19 mg/L for other SIUs
Selenium	--	--	Monitor via IEUA monitoring program; work with Sun Badge to assess BMPs
Zinc	50	3.74	Daily max; Based on CCWRF UCL
Bis(2-Ethylhexyl)phthalate	--	--	Monitor via IEUA monitoring program
Chloride	--	--	Monitor via IEUA monitoring program
Hardness	--	--	Monitor via IEUA monitoring program
Manganese	--	--	Monitor via IEUA monitoring program
Sodium	--	--	Monitor via IEUA monitoring program
Sulfate	--	--	Monitor via IEUA monitoring program
TDS	800/550*	IEUA to determine	As a result of rapidly changing increases in TDS observed in source water and the treatment plant influent, there is no assimilative capacity to allocate to the SIUs. Therefore, no recommendation can be made at this time for a TDS local limit. IEUA will determine how to best address issue with their SIUs.

Notes: mg/L = milligrams per liter; * = TDS limits for existing SIUs and new SIUs

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1. Introduction

Local limits are designed to control industrial user discharges to wastewater treatment plants, protecting the plants from pass-through (i.e., effluent concentrations exceeding permit limits) and inhibition of treatment processes, as well as protecting the quality of the biosolids and the health and safety of collection system workers. Local limits regulate permitted significant industrial users (SIUs) and are required to be developed in accordance with the requirements listed in 40 CFR 403.5 (c) and 403.8(f)(4). Unlike federal categorical standards and general discharge prohibitions, local limits are site-specific and take into account the quality and quantity of SIU discharges.

Inland Empire Utilities Agency's (IEUA's) current local limits for SIUs were developed in 2004 for the following parameters: cadmium, chromium, copper, cyanide (available), lead, nickel, zinc, total dissolved solids (TDS) and pH. The local limits are implemented and enforced through industrial wastewater discharge permits. During a 2012 Pretreatment Compliance Audit, the Santa Ana Regional Water Quality Control Board (RWQCB) expressed concern about the implementation of the 2004 limits and required IEUA to reevaluate the local limits.

This local limits report has been prepared in support of updating the 2004 local limits and includes the following elements:

- Introduction: Description of IEUA's local limits
- Local Limits Overview: Description of the local limits development process
- IEUA Collection System: Description of IEUA's wastewater collection system and SIUs
- Historical Data and 2014 Additional Sampling: Description of the data set used in the local limits evaluation
- Pollutants of Concern (POCs): Identification of pollutants most likely to cause pass-through or interference at the treatment facilities
- Flows and Loadings: Evaluation of pollutant mass loading to the influent of treatment facilities, as calculated by concentration and flow data
- Allowable Headwork Loadings (AHLs): Assessment of maximum mass loading that can be received at plant influent without causing pass-through or interference
- Sensitivity Analysis: Refine list of potential POCs based on guidance threshholds.
- Allowable Industrial Loadings (AILs): Assessment of the pollutant loading that can be allocated to SIUs and descriptions of allocation strategies

- Control Strategies for Conventional Pollutants: Assessment of the most appropriate way to control SIU discharges for biochemical oxygen demand (BOD), total suspended solids (TSS), and nitrogen species
- Control Strategies for Total Dissolved Solids (TDS): Assessment of the most appropriate way to control SIU discharges for TDS
- Conclusions and Recommendations: Discussion of the benefits and limitation of the industrial allocation strategies and recommendations for implementation

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2. Local Limits Overview

Wastewater discharges from SIUs are regulated through site-specific local limits to protect wastewater treatment facilities from possible adverse effects, including permit violations, process upset, decreased effluent or sludge quality, or harm to workers. The local limits process involves calculating the pollutant loading that can be received at the treatment plant headworks, without exceeding specified criteria (such as effluent permit limits), and then allocating that loading among controllable sources (i.e., permitted SIUs) and uncontrollable sources (i.e., domestic, commercial, and non-permitted industrial users).

The development of local limits involves the following steps:

- Identify potential POCs
- Analyze wastewater concentration and flow data
- Calculate maximum allowable headworks loadings (MAHLs) for each potential POC
- Perform sensitivity analyses to refine potential POCs
- Calculate allowable SIU loadings and determine allocation strategies for each POC

The screening process for identifying POCs involves comparing the maximum observed influent, effluent and sludge concentrations to effluent, inhibition, health and safety, and biosolids criteria. If the maximum concentration of a pollutant exceeds any of the screening criteria, the pollutant is considered a potential POC and is further evaluated by comparing the potential POC influent loading to the estimated MAHL. If the POC influent loading/MAHL ratio exceeds sensitivity thresholds, then the POC is retained throughout the local limits development process. The POC screening methodology and results are described in Section 5.

Wastewater concentration and flow data are used to calculate pollutant loadings. Evaluation of the data set includes assessing data gaps, data quality and quantity, frequency of non-detect results, and variability of reporting limits. Since local limits are typically re-evaluated during renewal of NPDES permits, data sets frequently span a five-year period; however, shorter alternative time periods may better reflect changes in flow rates and other site-specific conditions. Historical and additional 2014 sampling data, as well as the methodology and the results of pollutant loading calculations, are described in Section 6.

AHLs are calculated for the applicable effluent, inhibition, and biosolids criteria for each POC. The most conservative (i.e., smallest value) of the AHLs is considered the MAHL, which is the pollutant loading that can be received at the influent without exceeding criteria. For some POCs, including BOD, TSS, and nitrogen species, the local limits evaluation takes into consideration plant treatment capacity. The methodology and results of the AHL calculations are described in Section 7.

The allowable industrial loading (AIL) is the portion of the MAHL that can be allocated among the controlled sources (i.e., permitted SIUs). The AIL is calculated by subtracting the background loading from uncontrolled sources (i.e., domestic, commercial and non-permitted industrial users) and an allowance for other factors, including growth, data variability, slug loadings, and quality/quantity of the data, from the MAHL. Figure 1 presents an example of how the MAHL can be allocated between background, safety allowance, and industries.

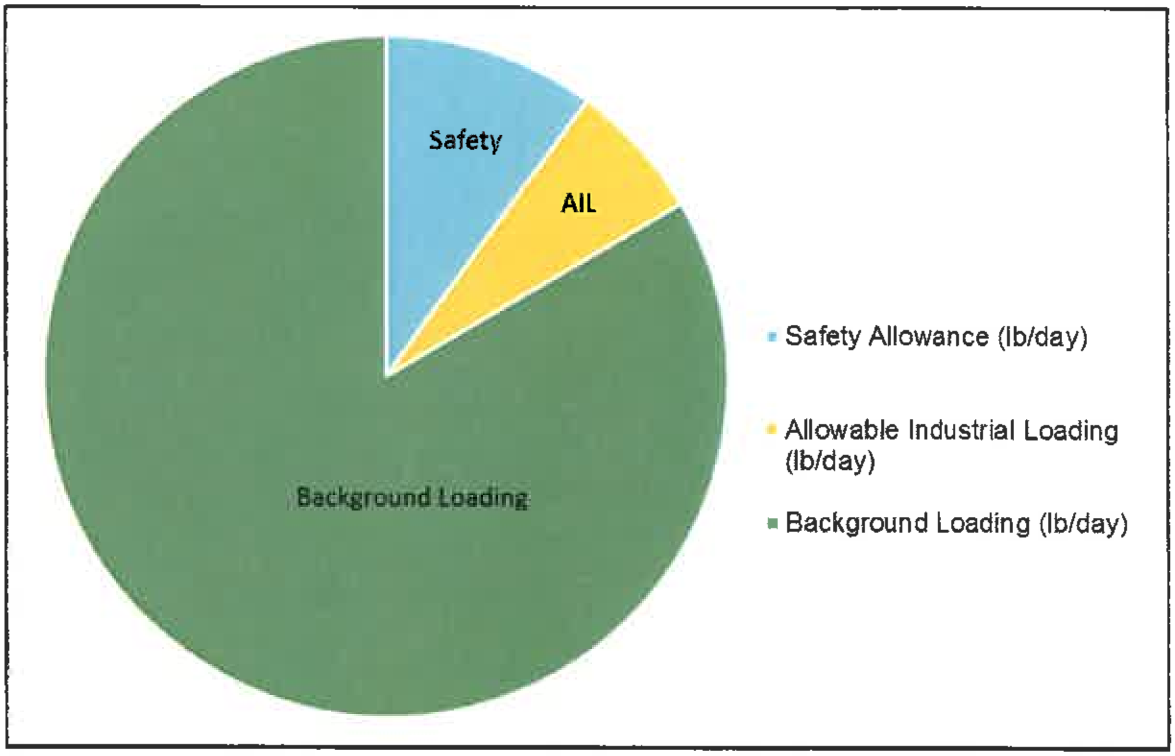


Figure 1: Components of Maximum Allowable Headworks Loading

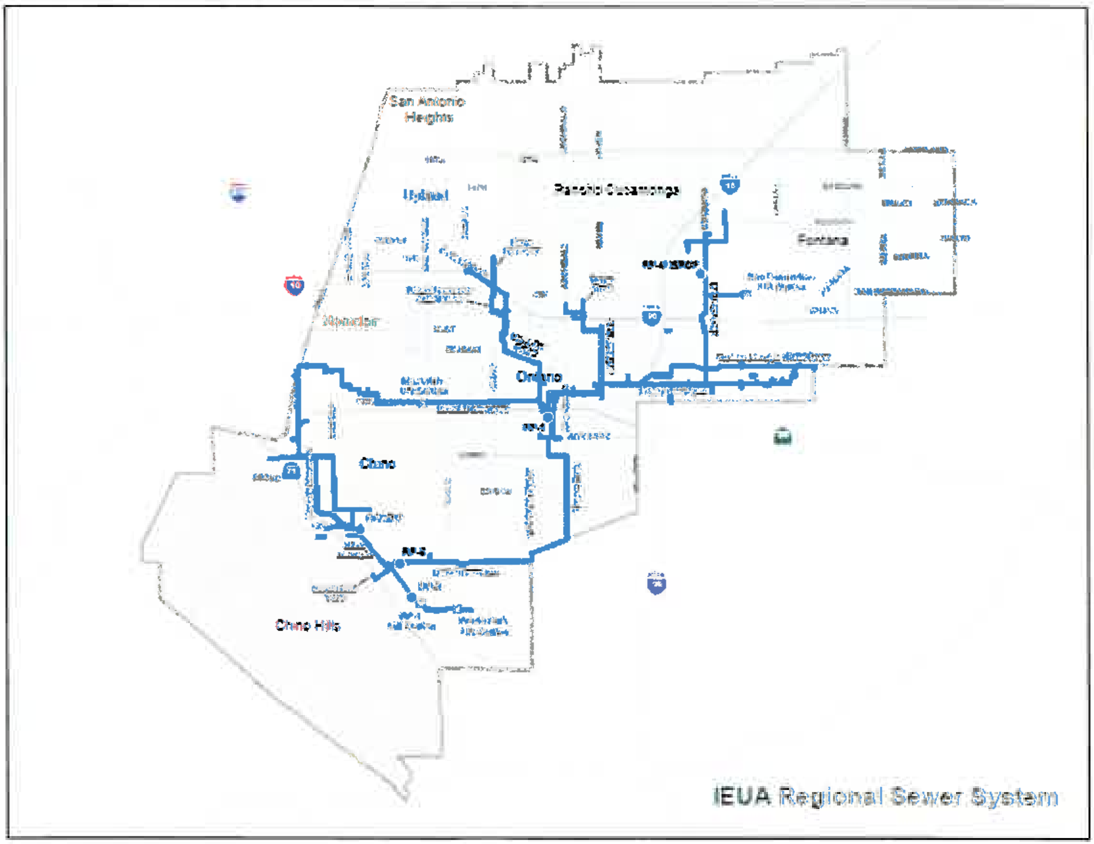
The local limit is an expression of the portion of the AIL allocated to each permitted SIU. The AIL may be allocated among the SIUs using a variety of methods:

- Uniform Concentration Limit (UCL), in which the AIL is divided by the total SIU flow to determine a single concentration limit applied all SIUs, regardless of their individual pollutant contributions
- Contributory Flow Limit (CFL), in which the AIL is divided by the total flow of contributing SIUs (i.e., those discharging concentrations exceeding background levels) to determine a single concentration limit applied to these SIUs. A concentration limit based on the background concentration is applied to non-contributing SIUs.

The allocation strategy selected is POC-specific, meaning that local limits for some POCs may be based on UCLs and for others, on CFLs. Calculation of AILs and allocation methodology and results are listed in Section 9.

3. IEUA Collection System

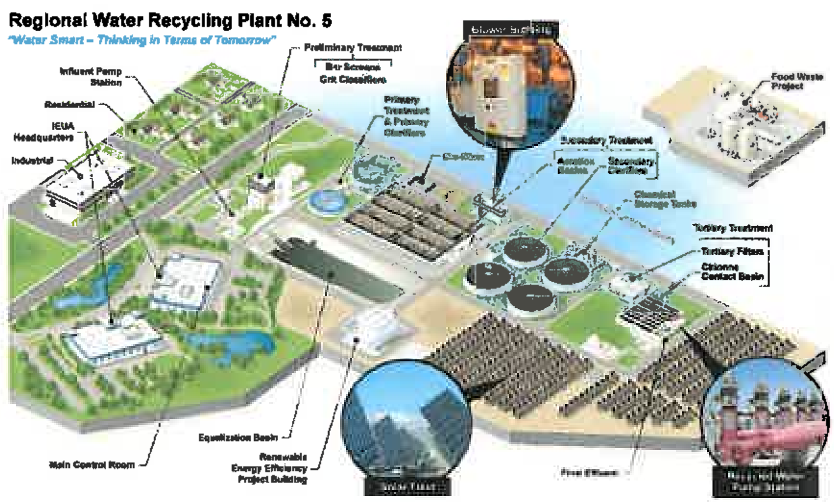
IEUA provides regional wastewater treatment services for a 242 square mile service area in San Bernardino County. Approximately 850,000 residents from seven contracting cities and agencies – Chino, Chino Hills, Fontana, Montclair, Ontario, Upland, and the Cucamonga Valley Water District (CVWD) – discharge to IEUA's collection system. Figure 2 shows an overview of IEUA's service area. The system receives wastewater discharges from various industries, including light manufacturing, metals finishing, and food industries. Permitted SIUs represent approximately two percent of the overall volume of wastewater treated by IEUA (based on 2013 to 2014 flow data).



(Source: IEUA)

Figure 2. IEUA Service Area

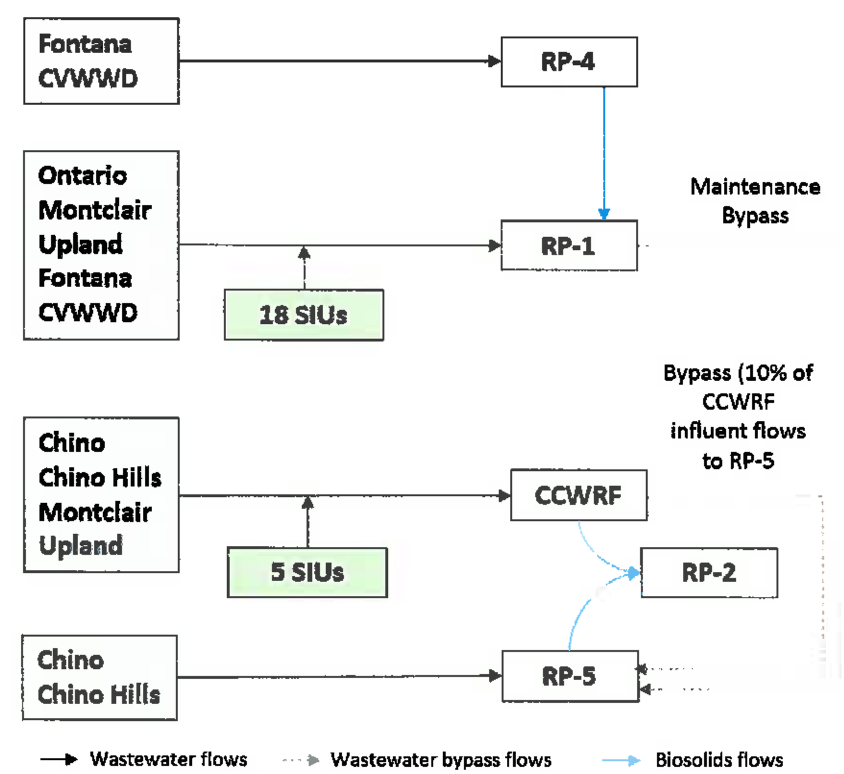
IEUA owns and operates five regional water recycling plants: Regional Water Recycling Plant No. 1 (RP-1), RP-2, RP-4, RP-5, and Carbon Canyon Water Recycling Facility (CCWRF). Wastewater treatment processes for RP-1, RP-4, RP-5, and CCWRF are very similar and include preliminary treatment using bar screens and aerated grit chambers, addition of coagulant and flocculant prior to primary settling tanks, aeration tanks with activated sludge and nitrification/denitrification processes, secondary clarifier tanks, tertiary treatment using sand filtration, disinfection using sodium hypochlorite, and dechlorination. Figure 3 shows the unit processes associated with RP-5.



(Source: IEUA)

Figure 3. Wastewater treatment processes for RP-5

Biosolids are anaerobically digested at RP-1 and RP-2, with RP-1 treating biosolids from RP-1 and RP-4 and RP-2 treating biosolids from the RP-5 and CCWRF facilities. The treated biosolids are then transferred to a co-composting facility. Wastewater can be diverted between the treatment plants via available routing options built into the regional collection system. Figure 4 shows potential wastewater bypasses between treatment plants.



Notes: One of the SIUs (Jewlland-Freya) can discharge to either RP-1 or CCWRF; for the purposes of the local limits evaluation this SIU is counted as discharging to both treatment plants

Figure 4. IEUA Wastewater and Biosolids Flow Schematic

The IEUA, Chino Basin Watermaster (Watermaster), Chino Basin Water Conservation District, and San Bernardino County Flood Control District are partners in the implementation of the Chino Basin Recycled Water Groundwater Recharge Program. This is part of a comprehensive water supply program to enhance water supply reliability and improve the groundwater quality in local drinking water wells throughout the Chino Groundwater Basin by increasing the recharge of stormwater, imported water and recycled water. This program is an integral part of Watermaster's Optimum Basin Management Plan (OBMP).

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Water recycling is a critical component of the water resources management strategy for the IEUA. IEUA provides customers with disinfected tertiary recycled water that meets all the requirements for Title 22 Water Recycling Criteria. The overall goal of the IEUA Recycled Water Program is to encourage maximum use of the recycled water resource for beneficial purposes, such as landscape and agricultural irrigation, construction, and industrial uses thereby conserving water within the Chino Basin and reducing the dependency on imported water.

IEUA also operates the Non-Reclaimable Wastewater System (NRWS), consisting of three trunk lines that convey wastewater with higher brine concentration outside the Chino Groundwater Basin area due to the restrictive salinity requirements imposed upon IEUA's regional water recycling plants. Wastewaters containing high levels of dissolved salts or other chemicals that may degrade or limit the use of recycled water are collected from the NRW industrial users. This flow is conveyed to 1) the County Sanitation District of Los Angeles County's (CSDLAC's) wastewater sewerage system for treatment and ultimate disposal in the Pacific Ocean, or, 2) through the Inland Empire Brine Line (Brine Line) to the County Sanitation Districts of Orange County (CSDOC) for treatment and ultimate disposal in the Pacific Ocean. The Regional Water Recycling Plants discharge effluents to natural surface waters or to systems that serve to recharge the Chino Groundwater Basin. IEUA and the contracting cities designate industrial users as SIUs according to the criteria listed in 40 CFR 403.3, which includes:

- Subject to categorical pretreatment standards described in 40 CFR 403.6 and 40 CFR Chapter I, subchapter N,
- Discharge an average of 25,000 gallons per day (gpd) or more of process wastewater,
- Discharge process wastewater which makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant, or
- Designated as such by the permitting authority on the basis that the industrial user has a reasonable potential to adversely affect the treatment plant operations or violate any pretreatment standard or requirement.

Local limits apply to SIU discharges and are site-specific, taking into account the quality and quantity of industrial discharges to the IEUA collection system. Twenty-two industrial users have been identified as SIUs and are permitted to discharge wastewater to the IEUA collection system. The SIUs discharge to either RP-1 or CCWRF, and wastewater from RP-1 can be diverted to RP-5 via a bypass line. Table 1 identifies the SIUs discharging to the IEUA water recycling plants.

Table 1. SIUs Discharging to the IEUA Collection System

SIU		Location	Discharges to
1	Cliffstar Corp.	Fontana	RP-1
2	Coca-Cola	Ontario	
3	Discuss Dental, LLC		
4	Inland Powder Coating Corp.		
5	Nestlé Waters North America		
6	Net Shapes, Inc.		
7	O.W. Lee Co.		
8	Parco, Inc.		
9	Sun Badge Co.		
10	Amphastar Pharmaceuticals, Inc.	Rancho Cucamonga	
11	Aquamar Inc.		
12	Evolution Fresh		
13	Nongshim America, Inc.		
14	PAC Rancho Inc.		
15	Parallel Products		
16	Schlosser Forge Co.		
17	Western Metals Decorating Co.		
18	Jewlland-Freya Health Sciences	Montclair	RP-1 or CCWRF
19	American Beef Packers, Inc.	Chino	CCWRF
20	Envision Plastics Industries		
21	Scott Brothers Dairy		
22	Wing Lee Farms, Inc.		

Notes: Jewlland-Freya Health Sciences discharges can be routed to either RP-1 or CCWRF; wastewater from RP-1 can also be routed to RP-5 for treatment

4. Historical Data and 2014 Additional Sampling

IEUA performs wastewater sampling at the water recycling plants in compliance with discharge permits, as well as part of routine operational procedures. For this local limits update, analytical data for metals, general chemistry parameters, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), dioxins, pesticides and polychlorinated biphenyls (PCBs) from the water recycling plants for the last five years (2009 through 2014) were compiled and reviewed. Water recycling plant influent and effluent flow data from this time period were also reviewed.

For the SIUs, sampling frequency and required analytical parameters are based on the industrial discharger permits; therefore, the historical SIU analytical data sets vary depending on individual SIUs' discharge permit requirements. Analytical and flow data from the 22 permitted SIUs from 2009 through 2014 were evaluated.

The historical data represent a robust data set for influent and effluent samples at the treatment plants; however, local limits calculations also require an assessment of background (i.e., domestic and commercial sources) loading. Additional sampling was performed during September and October 2014 to provide information on background concentrations, confirm removal efficiencies, and allow for influent mass balance assessments at the treatment plants. Results from September and October 2014 sampling event are identified as the "2014 additional sampling" throughout this local limits report.

4.1 Historical Data

Influent and effluent analytical data were summarized for each of the water recycling plants: RP-1, RP-2, RP-4, RP-5, and Carbon Canyon Water Recycling Facility (CCWRF). The following tables in Appendix A present the number of results, the number of non-detected results, average, and maximum concentrations:

- Table A-1: RP-1 influent and effluent
- Table A-2: RP-4 influent and effluent
- Table A-3: RP-5 influent and effluent
- Table A-4: CCWRF influent and effluent

Table A-5 presents the summary statistics of dewatered biosolids analytical data (centrifuge and belt press cake) from RP-1 and RP-2.

4.2 2014 Additional Sampling

The 2014 additional sampling was originally described in the August 2014 Local Limits Study Sampling Plan (ARCADIS, 2014), included in Appendix A. The following locations were sampled during the 2014 additional sampling event:

- RP-1 influent/effluent/primary sludge
- RP-4 influent/effluent/primary sludge
- RP-5 influent/effluent/primary sludge
- CCWRF influent/effluent/primary sludge
- SIU effluent from American Beef Packers, Scott Brothers Dairy, Envision Plastics, Wing Lee Farms, and Jewlland-Freya Health Sciences

Rather than attempting to collect samples representative of domestic and commercial sources throughout the cities, the influent samples from RP-4 and RP-5 were used to represent background loadings since these plants do not receive SIU discharges. During the 2014 additional sampling, RP-1 and CCWRF bypasses to RP-5 were curtailed so that influent pollutant concentrations could also be used to represent background concentrations. The five SIUs selected for the additional sampling discharge to CCWRF permitted mass balance calculations to be performed around the CCWRF headworks.

The analytical parameters selected for the 2014 additional sampling were identified as preliminary pollutants of concern (POCs) based on an initial screening of historical influent and effluent analytical data compared to effluent, inhibition, biosolids, and health and safety criteria. Any of the USEPA's National POCs - arsenic, cadmium, chromium, copper, cyanide, lead, mercury, molybdenum, nickel, selenium, silver, zinc, 5-day biochemical oxygen demand (BOD_5), TSS, and ammonia - that were not identified through this initial screening process were also added to the preliminary POC list. The 2014 additional sampling analytical parameters included:

- Metals: aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, mercury, molybdenum, nickel, potassium, selenium, silver, sodium, thallium, and zinc
- BOD_5 and total organic carbon (TOC)
- Cyanide and cyanide (free)
- Ammonia, nitrate, and nitrite
- Chloride and sulfate
- Total dissolved solids (TDS), TDS (fixed), and TSS

Analytical data from the 2014 additional sampling event are presented in the following tables:

- Table A-6: influent and effluent results for RP-1, RP-4, RP-5, and CCWRF
- Table A-7: primary sludge results for RP-1, RP-4, RP-5, and CCWRF
- Table A-8: effluent results from SIUs (American Beef Packers, Scott Brothers Dairy, Envision Plastics, Wing Lee Farms, and Jewlland-Freya Health Sciences)

BOD_5 analyses were conducted for samples collected at the SIUs. However, 40 CFR 133.104 allows TOC to be substituted for BOD_5 when a long-term BOD:TOC correlation has been demonstrated. IEUA routinely uses TOC data to calculate influent and effluent BOD for compliance reporting. TOC and BOD are monitored over time to ensure the correlation equation is still valid or changed as needed. During the 2014 additional sampling event, influent and effluent samples were analyzed for TOC and the results were converted to BOD using the following formulas:

Influent BOD = 1.92 (TOC) – 13.9
Effluent BOD = 0.23 (TOC) + 0.25

During previous sampling events, IEUA staff have observed bis(2-ethylhexyl)phthalate detections that appeared to be the result of sampling artifacts. Bis(2-ethyhexyl)phthalate is a plasticizer and is considered a common contaminant in wastewater monitoring (i.e., from plastic sampling tubing). During the 2014 additional sampling, bis(2-ethylhexyl)phthalate was collected as a grab sample to minimize potential contamination.

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5. Pollutants of Concern (POCs)

The first step in the local limits process is to identify potential pollutants of concern (POCs). A POC is any pollutant that might reasonably be expected to be discharged to the IEUA collection system in amounts that would cause pass-through; interfere with treatment processes, biosolids use, or biosolids disposal; or pose a risk to the health and safety of workers. POCs may include both toxic pollutants (e.g., metals) and conventional pollutants (e.g., five-day biochemical oxygen demand, BOD_5, and total suspended solids, TSS). At a minimum, a local limits study should include the fifteen National POCs identified in the 2004 USEPA Local Limits Development Guidance (2004 USEPA Guidance): arsenic, cadmium, chromium, copper, cyanide, lead, mercury, molybdenum, nickel, selenium, silver, zinc, BOD_5, TSS, and ammonia.

5.1 Regulatory Drivers

A constituent is identified as a site-specific pollutant of concern (POC) if it has been detected in the influent, effluent, or biosolids in concentrations that exceed specific effluent, biosolids, operational, and health and safety criteria. The following section describes the criteria relevant to the IEUA plants. The most stringent of these criteria (i.e., the lowest concentrations) were then compared to influent, effluent, and biosolids analytical data from the IEUA facilities to assess potential impacts.

- ***NPDES Permit Limits***: In 2009, water recycling plant discharge and producer/user water reclamation requirements were combined into one NPDES permit, CA8000409, to regulate total discharge of up to 84.4 mgd of tertiary treated wastewater. Treated effluent is either recycled for industrial uses, irrigation, and groundwater recharge or discharged from various discharge points to Prado Lake, Cucamonga Creek, and Chino Creek. Appendix B, Table B-1 presents the NPDES limits for each of the effluent discharge locations.

- ***Basin Plan Limits***: The Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin, adopted by the Santa Ana Regional Water Quality Control Board (RWQCB), regulates waste discharges, such as effluent from wastewater treatment plants, to minimize and control their effects on water quality. The Basin Plan identifies the beneficial uses of various waters of the Santa Ana Region and lists the water quality objectives necessary to protect those beneficial uses. Table B-2 lists the beneficial uses associated with receiving waters for each of the discharge locations. Table B-3 lists the water quality standards for each of the applicable beneficial uses or receiving waters.

- ***Recycled Water Limits***: Because tertiary treated effluent from RP-1, RP-4, RP-5, and CCWRF can also be used for groundwater recharge, limits specified in the Santa Ana RWQCB Order No. R8-2007-0039, Water Recycling Requirements for the Chino Basin Recycled Water Groundwater Recharge Program, is also applicable. This order describes the requirements for use of recycled water for groundwater recharge via spreading in recharge basin sites within the Chino North Management Area. Table B-4 lists the recycled water limits and Table B-5 summarizes the most stringent effluent criteria for each of the discharge locations.

- ***Process Inhibition Criteria***: Based on the process schematics, the four water recycling plants have similar wet-stream biological processes, each incorporating nitrifying/denitrifying activated sludge processes. Biosolids from RP-4 are combined with RP-1 biosolids and anaerobically digested at RP-1. Biosolids from RP-5 and CCWRF are routed to RP-2, which also uses anaerobic digesters to process the biosolids. The same set of criteria would thus apply to all four plants: activated sludge, nitrification, and anaerobic digestion. Appendix G in the 2004 USEPA Local Limits Guidance includes criteria for activated sludge, nitrification, and anaerobic digestion inhibition. Table B-6 summarizes inhibition levels for activated sludge, nitrification, and anaerobic digestion.

- ***Health and Safety Criteria***: Health and safety screening levels, based on explosivity and fume toxicity, were evaluated relative to protecting the collection system and personnel. Discharge screening levels for explosivity and fume toxicity were based on the 2004 USEPA Guidance, Appendix I and are listed in Table B-6.

- ***Biosolids Criteria***: The national biosolids standards from 40 CFR Part 503 were evaluated to verify that biosolids discharges did not cause violations of applicable biosolids disposal or use regulations. The biosolids criteria were based on biosolids land application limits for the ceiling concentration for molybdenum (Table 1 in 40 CFR 503.13) and the monthly average pollutant concentration (Table 3 in 40 CFR 503.13) for other metals listed in 2004 USEPA Guidance, Appendix E. The biosolids criteria are listed in Table B-6.

5.2 POC Screening Methodology

The POC screening process was performed using methodology described in the 1987 USEPA Guidance Manual on the Development and Implementation of Local Limits Under the Pretreatment Program (1987 USEPA Guidance). A constituent was considered to be a potential POC if one of the following criteria were met:

- Maximum effluent concentration exceeds one-half of the most stringent effluent criteria.
- Maximum influent concentration exceeds the most stringent effluent criteria.
- Maximum influent concentration exceeds one-fourth of the most stringent activated sludge or nitrification inhibition criteria.
- Maximum influent concentration exceeds 1/500th of the anaerobic digestion inhibition criteria
- Maximum influent concentration exceeds the health and safety screening levels.
- Maximum biosolids concentration exceeds one-half the biosolids criteria.

Tables B7, B-8, B-9, and B-10 present the POCs identified through the screening process for RP-1, RP-4, RP-5, and CCWRF, respectively. The maximum influent and effluent concentrations were based on data from 2009 through 2014. The maximum biosolids concentrations were based on historical sludge cake sample results from RP-1 and RP-2. The maximum biosolids concentrations from RP-1 are listed on both the RP-1 and RP-4 POC screening tables (Tables B-7 and B-8, respectively). The maximum biosolids concentrations from RP-2 are listed on both the RP-5 and CCWRF POC screening tables (Tables B-9 and B-10, respectively).

For the inhibition criteria, the screening process varies based on where inhibition may occur within the treatment process. For the activated sludge and nitrification inhibition evaluation, the maximum influent concentration is compared to ¼ of the most stringent criteria, with the fraction providing a safety factor. For anaerobic digestion evaluation, the maximum influent concentration is compared to 1/500 of the anaerobic digestion inhibition criteria, with the fraction accounting for pollutant concentration via increased solids after sludge thickening, as well as providing a safety factor.

If the influent, effluent, or biosolids results were not detected, ½ of the laboratory reporting limit was used in the comparison to the applicable criteria in the POC evaluation. For several of the semivolatile and pesticide pollutants, the laboratory reporting limits exceeded the most stringent criteria. The laboratory reporting limits were consistent and in-line with levels achievable using the requested analytical method and instrumentation. In these cases, non-detected pollutants were not considered to be POCs.

The screening process is non-discriminatory, identifying pollutants discharged by SIUs, as well as by other sources. Pollutants from non-industrial sources may include naturally-occurring constituents present in the water supply, pollutants associated with waste disposal by domestic users, chemicals added to aid water and wastewater treatment and their by-products, and non-point source pollution. Control of these pollutants may need to be addressed in conjunction with local limits or separately.

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5.3 Outliers and Exceptions

The POC screening tables, Tables B-7 through B-10, are based on the raw data set from 2009 to 2014 without taking into account potential outliers. The following analytes were initially identified in the POC screening process and some were eliminated as potential POCs after further evaluation.

- Chloroform: Maximum influent chloroform concentrations at RP-1 and RP-5 were greater than 1/500th of the anaerobic digestion inhibition threshold level value of 1.0 mg/L, which was based on literature values from the 2004 USEPA Guidance (Appendix G) ranging from 1.0 to 16 mg/L. The 2004 USEPA Guidance states that POTWs with no past inhibition problems may not need to calculate allowable headworks loadings (AHLs) to protect against inhibition because current loadings are acceptable to the treatment work's biological processes. The 2004 USEPA Guidance also cautions against using literature values as a basis for implementing of a local limit. Of the 17 chloroform results, RP-1 had two chloroform detections and RP-5 only had one chloroform detection, suggesting that anaerobic digestion at RP-1 and RP-5 is not inhibited. Based on this evaluation, chloroform was eliminated from further analysis.
- Total trihalomethanes (THMs) and Bromodichloromethane: Maximum effluent concentrations were greater than ½ the effluent criteria for THMs at RP-1, RP-4, and CCWRF and bromodichloromethane at RP-5. THMs, which consist of chloroform, dibromochloromethane, bromodichloromethane, and bromoform, are formed during treatment as disinfection byproducts. The individual components of THMs, with the exception of chloroform described above, were not detected in the influent samples and are not considered to be an SIU discharge issue. THMs and bromodichloromethane were not included in further analysis.
- Benzene and Ethylbenzene: Maximum influent concentrations for benzene and ethylbenzene were greater than the effluent criteria at CCWRF. After outlier data points for ethylbenzene were eliminated, the maximum influent concentration was below the effluent criteria. Two benzene influent detections (0.046 mg/L from 2/20/2011 and 0.022 mg/L from 7/18/2011) were above the effluent criteria of 0.001 mg/L, based on recycled water limits for groundwater recharge. When viewed over the entire IEUA collection system, these data points appear to be anomalous and were not considered to be associated with SIU discharges. Benzene and ethylbenzene were not included in further analysis.
- Toluene: The maximum influent toluene concentration was greater than the most stringent effluent criteria (0.15 mg/L) and the health and safety criteria (2.075 mg/L) at CCWRF. Of the 30 influent results, there were 11 toluene detections. Eliminating outlier data points resulted in a maximum influent concentration below the health and safety

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criteria but still above the effluent criteria. While the few remaining detections may be anomalous results, toluene was included through the sensitivity analysis, described in Section 6.7.

- Trichloroethene: Of the 27 trichloroethene influent results, there was only one detection (0.062 mg/L from 6/18/2011) that was greater than the effluent criteria (0.005 mg/L), 1/500th of the anaerobic digestion inhibition criteria (0.002 mg/L), and the health and safety criteria (0.012 mg/L) for CCWRF. After eliminating the outlying data point, trichloroethene was not considered a potential POC and was not included in further analysis.
- Total Inorganic Nitrogen (TIN): The maximum TIN influent concentrations were greater than effluent criteria at RP-5, and CCWRF and the maximum effluent concentrations were greater than ½ the effluent criteria at RP-1, RP-4, RP-5, and CCWRF. TIN consists of ammonia, nitrate, and nitrite. Nitrogen is also present in wastewater in organic form. Nitrogen species undergo transformations during treatment processes, and organic nitrogen may be converted to inorganic forms. Effluent TIN may be affected by influent organic nitrogen. To account for the potential impact of organic nitrogen, total nitrogen (TN), comprising ammonia, nitrate, nitrite, and organic nitrogen) was used as the surrogate parameter in sensitivity and AHL analyses.
- Dioxins: Dioxin was not specifically identified through the screening process, but has historically been a parameter of interest for IEUA. Dioxins, were reported as a TCDD scan with no reporting limit. Based on the historical results there were no detections at any of the four plants. Therefore this was removed from further analysis.

Based on the screening and data evaluation process, the potential POCs are summarized in Table 2.

Table 2. Potential POCs

National POCs	Screened POCs
Ammonia	Aluminum
Arsenic	Bis(2-Ethylhexyl)phthalate
BOD5	Boron
Cadmium	Chloride
Chromium	Cyanide (free)
Copper	Fluoride
Cyanide (total)	Hardness
Lead	Iron
Mercury	Manganese
Molybdenum	Sodium
Nickel	Sulfate
Selenium	TDS
Silver	Toluene
TSS	Total Nitrogen
Zinc	

6. Flows and Loadings

The second step in the local limits process is to analyze wastewater concentration and flow data. Wastewater flow and pollutant concentration data were used to estimate influent pollutant loadings and pollutant contributions from industrial and domestic/commercial (i.e., background) sources. Domestic and commercial sources are not regulated as SIUs; discharges from these sources could potentially reduce the pollutant loads that can be allocated to SIU dischargers.

Pollutant loadings were calculated by multiplying concentration data, in milligrams per liter (mg/L), by the flow rate, in million gallons per day (mgd), and a unit conversion factor (8.34) to yield loadings reported in pounds per day (lb/day). In cases where concentrations were reported as "not detected", ½ the reporting limit was substituted for the non-detected values.

6.1 Wastewater and Sludge Flows

Wastewater flow data collected at the influent to each of the water recycling plants and at the SIUs were compiled and reviewed. Daily influent flow data from 2009 through 2014 were available. SIU flow data varied in quality and quantity, and determination of representative values is complicated due to a number of industries discharging as batch flows. Several of the SIUs do not have flow meters. Overall flow rates appear to be decreasing slightly over time, possibly due to water conservation or drought conditions. Tables 3 and 4 summarize influent and SIU flows, respectively.

Table 3. Influent Flow Summary

Average Flows (mgd)	RP-1	RP-4	RP-5	CCWRF	Total Flow
2009	30.9	8.9	8.1	8.8	57.6
2010	28.5	11.0	7.4	7.4	54.5
2011	27.8	10.0	8.3	7.1	53.2
2012	27.1	9.8	8.2	7.5	52.9
2013	27.5	10.0	8.3	6.8	52.6
2014	26.2	10.2	7.5	7.8	51.7
2009 – 2014	28.1	10.0	8.0	7.5	53.9
2013 – 2014	27.0	10.1	8.0	7.2	52.2

Notes: mgd = million gallons per day; 2014 flows represent 1/1/2014 through 9/22/2014; Average RP-1 plant flow used in the 2004 local limits report was 38.1 mgd.

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Table 4. SIU Flow Summary

Significant Industrial Users	Flow (mgd)
Discharging to RP-1	
1 Amphastar Pharmaceuticals, Inc.	0.002
2 Aquamar Inc.	0.029
3 Cliffstar Corp.	0.059
4 Coca-Cola	0.126
5 Discus Dental, LLC	0.0005
6 Evolution Fresh	0.053
7 Inland Powder Coating Corp.	0.005
8 Jewlland-Freya Health Sciences*	0.0013
9 Nestlé Waters North America	0.109
10 Net Shapes, Inc.	0.0015
11 Nongshim America, Inc.	0.025
12 O.W. Lee Co.	0.003
13 PAC Rancho Inc.	0.010
14 Parallel Products	0.064
15 Parco, Inc.	0.005
16 Schlosser Forge Co.	0.005
17 Sun Badge Co.	0.0004
18 Western Metals Decorating Co.	0.002
Total SIU Flow to RP-1	**0.501**
2013 – 2014 Average RP-1 Influent Flow	**27.0**
% SIU / Influent Flow	**1.8**
Discharging to CCWRF	
1 American Beef Packers, Inc.	0.306
2 Scott Brothers Dairy	0.052
3 Envision Plastics Industries	0.069
4 Wing Lee Farms, Inc.	0.038
5 Jewlland-Freya Health Sciences*	0.0013
Total SIU Flow to CCWRF	**0.466**
2013 – 2014 Average CCWRF Influent Flow	**7.2**
% SIU / Influent Flow	**6.5**

Notes: mgd = million gallons per day; SIU flows based on average available 2013 through 2014 flows; if flow rates were not available, permitted flow rates were used. * = Jewlland-Freya Health Sciences can discharge to either RP-1 or CCWRF and is counted as a potential industrial source for both plants; Total industrial flow used in the 2004 local limits report was 1.297 mgd

Table 5 summarizes the digested sludge flows at RP-1 and RP-2. Because the digested sludge flows represent biosolids from multiple plants, the percent contribution from each plant was estimated as an equivalent fraction of the overall influent wastewater flows. For example, the total influent flow for RP-1 and RP-4 was 38.1 mgd (average from 2009 through 2014). Based on their relative influent flows, the RP-1 sludge flows were estimated to be 74 percent (28.1/38.1 mgd) from RP-1 and 26 percent (10.0/38.1 mgd) from RP-4. For RP-2, sludge contributions were estimated as 52 percent from RP-5 and 48 percent from CCWRF.

Table 5. Sludge Flow Summary

Water Recycling Plant	Percent Contribution	Digested Sludge Flows (mgd)	Biosolids to Disposal (wet tons/day)
RP-1 (2013 -2014 Avg)	--	0.201	127
RP-1	74%	0.149	93.9
RP-4	26%	0.052	33.0
RP-2 (2013 – 2014 Avg)	--	0.098	57.1
RP-5	52%	0.051	29.7
CCWRF	48%	0.047	27.4

Notes: mgd = million gallons per day; Avg = average; Average digested sludge flows are based on available data from 2009 through 2014; Average biosolids disposal averages based on available 2010 to 2014 data from annual biosolids report; From the 2004 local limits report, the average digested sludge flow was 0.292 mgd and biosolids to disposal was 274,126 lb/day (137 tons per day)

6.2 Pollutant Loadings

Average and maximum influent POC loadings were calculated for each plant. Using 2013 to 2014 data, the average flow rates were multiplied by the average and maximum influent concentrations to yield average and maximum influent loadings, respectively. The influent concentrations and loadings are summarized in Appendix C, Table C-1, for the parameters identified as potential POCs.

Background pollutant loadings were calculated using average 2013 to 2014 influent flow from each plant and the average of the influent concentrations from RP-4 and RP-5 from the 2014 additional sampling. Influent samples from RP-4 and RP-5 were assumed to be representative of background concentrations of all IEUA service areas since these plants do not directly receive SIU discharges. During the 2014 additional sampling, RP-1 and CCWRF bypasses to RP-5 were curtailed so that influent pollutant concentrations could also be used to represent background concentrations. In Appendix C, Tables C-2 and C-3 present RP-4 and RP-5 influent concentrations from the 2014 additional sampling event. Table 6 summarizes the average background concentrations, based on the 2014 RP-4 and RP-5 data. In Table 6, the blue highlighted cells signify that the results for the POC were all non-detect values and that ½ the reporting limit was used for calculating averages.

Table 6. Average Background Concentrations

Parameters	Avg RP-4 Influent	Avg RP-5 Influent	Avg Background
Metals (mg/L)			
Aluminum	0.41	0.40	0.41
Arsenic	**0.005**	**0.005**	0.005
Boron	0.2	0.3	0.2
Cadmium	**0.005**	**0.005**	0.005
Chromium	**0.005**	**0.005**	0.005
Copper	0.05	0.06	0.05
Iron	0.36	0.35	0.35
Lead	**0.01**	**0.01**	0.01
Manganese	0.02	0.02	0.02
Mercury	**0.00025**	**0.00025**	0.00025
Molybdenum	**0.005**	**0.005**	0.005
Nickel	**0.005**	**0.005**	0.005
Selenium	**0.01**	**0.01**	0.01
Silver	**0.005**	**0.005**	0.005
Sodium	95	84	91
Zinc	0.16	0.14	0.15
General Chemistry (mg/L)			
Ammonia	44.2	36.1	41.0
BOD	280	259	272
Chloride	95	112	102
Cyanide (free)	**0.001**	**0.001**	0.001
Cyanide (total)	0.011	0.009	0.010
Hardness	168	196	179
Nitrate	0.09	0.09	0.09
Nitrite	0.14	0.12	0.14
Sulfate	56	42	50
TDS	510	493	503
TDS (fixed)	434	416	427
TSS	266	193	237
Organics (mg/L)			
Toluene	**0.005**	**0.005**	0.005
Bis(2-Ethylhexyl)phthalate	0.011	0.011	0.011

Notes: Avg = flow-weighted average; mg/L= milligrams per liter; BOD = biochemical oxygen demand; TDS = total dissolved solids; TSS = total suspended solids; Nondetect values were substituted with ½ reporting limit for average calculations; Results for the POCs that were all nondetect are noted in red (bold)

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SIU loadings were calculated using 2013 through 2014 average flow data (from Table 3) multiplied by average concentration and the conversion factor. In Appendix C, Table C-4 and C-5 present SIU loadings to RP-1 and CCWRF, respectively. Table 7 summarizes the SIU loadings as a percentage of RP-1 and CCWRF influent loadings.

Table 7. SIU Loading Contributions

Parameters	RP-1 SIU Loading (lb/day)	RP-1 Influent Loading (lb/day)	% SIU / RP-1	CCRWF SIU Loading (lb/day)	CCWRF Influent Loading (lb/day)	% SIU / CCWRF
Metals						
Aluminum	0.0013	189	0.0007	11.4	45.1	25.3
Arsenic	0.0065	1.13	0.57	0.030	0.300	9.93
Boron	0.00054	60.8	0.0009	1.11	19.3	5.75
Cadmium	0.0041	1.13	0.36	0.030	0.300	10.0
Chromium	0.011	1.13	0.97	0.046	0.300	15.3
Copper	0.034	14.4	0.24	0.206	3.77	5.46
Iron	2.45	403	0.61	9.09	44.0	20.7
Lead	0.011	2.25	0.49	0.095	0.600	15.8
Manganese	0.028	6.98	0.40	0.544	2.00	27.2
Mercury	0.0000027	0.065	0.004	0.002	0.017	11.8
Molybdenum	0.000073	2.03	0.004	0.033	2.40	1.33
Nickel	0.012	1.13	1.06	0.038	0.300	12.7
Selenium	0.015	2.25	0.67	0.061	0.600	10.2
Silver	0.0086	1.13	0.76	0.026	0.300	8.67
Sodium	0.965	20,491	0.005	596	6,045	9.86
Zinc	0.239	42.8	0.82	0.804	13.2	6.09
General Chemistry Parameters						
Ammonia	0.017	6,625	0.0002	148	1,987	7.45
BOD	4,817	127,508	3.8	4,013	27,502	14.6
Chloride	1.01	19,497	0.005	575	7,273	7.90
Cyanide (free)	0.000011	0.248	0.004	0.009	0.060	15.0
Cyanide (total)	0.0044	2.48	0.18	0.068	0.557	12.2
Nitrate	0.010	121	0.008	3.93	12.3	32.0
Nitrite	0.013	78.8	0.016	3.32	1.80	184
Sulfate	0.927	13,736	0.007	222	3,668	6.05
TDS	4,194	106,285	3.9	4,652	32,666	14.2
TSS	802	103,223	0.78	1,438	20,955	6.86
Organics						
bis(2-Ethylhexyl) phthalate	0.0092	1.58	0.058%	--	0.486	--

Notes: SIUs discharging to RP-1 and CCWRF are listed in Table 4; lb/day = pounds per day; % = percent of the pollutant influent loading that is contributed by the significant industrial users discharging to a plant; "—" = not available; Loadings based on 2013 – 2014 concentration and flow data

Influent mass balances were calculated to ascertain if there were potential sources of unaccounted wastewater contributions. For the mass balance evaluation, SIU loading was added to background loading to yield calculated influent loading, which was then compared to the observed influent loading. The 2004 USEPA Guidance states that the mass balance results should fall between 80 to 120 percent if all sources are accounted for.

The 2014 additional sampling event was designed to collect the data needed for calculating an influent mass balance around CCWRF. The five SIUs discharging to CCWRF were sampled during this time period, and bypasses to RP-4 and RP-5 were curtailed so that influent concentrations were representative of background conditions. To estimate background loading of POCs at CCWRF, flow-weighted averages of the influent concentrations observed at RP-4 and those observed at RP-5 were calculated independently for each plant; a combined, flow-weighted average of the resulting averages for the two plants was determined and the resulting combined flow-weighted average was then multiplied by the average CCWRF influent flow (9.8 mgd) observed during the 2014 additional sampling. Table 8 presents the results of the mass balance evaluation; bolded mass balance values represent percentages outside of the 80 to 120 percent window. Tables C-6 and C-7 (Appendix C) summarize the SIU loadings and CCWRF influent loadings used in the mass balance.

A number of pollutants had mass balance values outside of the 80 to 120 percent window. For aluminum, boron, iron, zinc, and sulfate, the mass balance values, which fell in the range of 60 to 80 percent, were most likely due to the variability of the limited data set rather than additional unaccounted pollutant sources.

Table 8. Mass Balances for CCWRF

Parameters	CCWRF SIU Loadings (lb/day)	Avg Background Loading (lb/day)	Calculated Influent Loading (lb/day)	Avg Observed CCWRF Influent Loading (lb/day)	Mass Balance (%)
Metals					
Aluminum	11.4	33.1	44.5	61.6	**72.3**
Arsenic	0.028	0.409	0.437	0.410	106.5
Boron	1.06	19.3	20.7	27.3	**74.6**
Cadmium	0.028	0.409	0.437	0.410	106.5
Chromium	0.045	0.409	0.454	0.410	110.7
Copper	0.154	4.34	4.60	5.01	89.6
Iron	8.87	29.0	37.8	60.1	**62.9**
Lead	0.093	0.817	0.910	0.820	111.0
Manganese	0.520	1.62	2.19	2.73	**78.2**
Mercury	0.002	0.020	0.022	0.026	87.9
Molybdenum	0.031	0.409	0.440	3.30	**13.3**
Nickel	0.037	0.409	0.446	0.410	108.7
Selenium	0.058	0.817	0.875	0.820	106.7
Silver	0.024	0.409	0.433	0.410	105.5
Sodium	568	7,404	7,879	9,083	87.8
Zinc	0.759	12.5	13.1	18.0	**73.5**
General Chemistry Parameters					
Ammonia	136	3,351	3,420	2,717	**128.3**
BOD	3,556	22,200	25,519	32,212	80.0
Chloride	530	8,318	9,521	10,939	80.9
Cyanide (free)	0.008	0.082	0.090	0.082	109.4
Cyanide (total)	0.065	0.821	0.878	0.761	116.5
Sulfate	206	4,094	4,179	6,613	**65.0**
TDS	3,654	41,111	44,765	50,370	88.9
TSS	1,379	19,374	20,040	25,853	80.3
Organics					
Toluene	–	0.422	0.409	0.414	102.0
bis(2-Ethylhexyl)phthalate	–	0.900	0.899	0.772	116.6

Notes: Avg = average; lb/day = pounds per day; % = percent; Bolded mass balance values represent percentages outside of the 80 – 120% window; SIU and CCWRF influent loadings based on concentration and flow data from the 2014 additional sampling; Average background loadings based on average concentrations from RP-4 and RP-5 influent multiplied by the CCWRF influent flow from the 2014 additional sampling; Organic parameters were not sampled for SIUs during the 2014 additional sampling

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7. Allowable Headworks Loadings (AHLs)

The third step in the local limits process is to calculate the AHLs for each potential POC. The AHL is defined as the maximum POC loading that can be received at the headworks that would not cause pass-through, inhibit treatment processes, or diminish the quality/reuse potential of the biosolids. AHLs were calculated for the applicable effluent, biological process inhibition, and biosolids criteria. The most conservative (i.e., smallest value) of the calculated AHLs is considered the MAHL, which is the pollutant loading that can be received at the influent without exceeding any of the criteria. The following sections present the AHL variables, methodologies, and calculations for the applicable criteria. Tables D-1 through D-4 (Appendix D) summarize the AHL calculations for each of the water recycling plants.

For conventional pollutants (BOD, TSS, and nitrogen species), the local limits evaluation involves the assessment of plant treatment capacity as opposed to the AHL analyses. These pollutants are described in Section 9.

7.1 Removal Efficiencies

The removal efficiency component in the allowable headworks loading (AHL) calculation accounts for the percentage of the influent loading removed during treatment processes and operations. Two types of removal efficiencies were used in the AHL calculations: overall removal efficiency (removal from the wastewater influent at the headworks to final wastewater effluent) and primary removal efficiency (removal from the wastewater influent at the headworks to primary clarifier effluent).

7.1.1 Overall Removal Efficiency

The overall removal efficiency was calculated using the Mean Removal Efficiency (MRE) method described in the 2004 USEPA Guidance. Paired influent and effluent data (i.e., collected on the same day) from 2009 through 2014 were used to generate site-specific removal efficiencies using the following formula:

$$\text{MRE} = \frac{\text{average influent concentration} - \text{average effluent concentration}}{\text{average influent concentration}}$$

Appendix E, Tables E-1 through E-4 present the calculated MREs for RP-1, RP-4, RP-5, and CCWRF, respectively. Removal efficiencies were not calculated for pollutants that were not detected in either the influent or effluent. For non-detected results, ½ the reporting limit was used in the MRE calculations and noted on the tables as blue shaded cells. In cases where all

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influent and effluent results were non-detects, removal efficiencies were not calculated and is listed as "NC" on the tables.

Appendix E, Table E-5 summarizes the removal efficiencies observed at each of the plants and also includes literature values for removal efficiencies based on the 2004 USEPA Guidance, Appendix R for comparison purposes. For several POCs, like arsenic and lead, calculated removal efficiencies were less than zero, reflecting variable or low level concentrations in the data set. For other POCs, such as chloride and sodium, the addition of chemicals to aid coagulation and flocculation caused concentration increases across the headworks to the final effluent, resulting in negative values. In these cases (i.e., non-detections or negative results), a removal efficiency of zero was assumed for calculations of AHLs based on effluent criteria.

For AHL calculations based on sludge digestion inhibition and biosolids land application criteria, the removal efficiency appears in the equation's denominator. For removal efficiencies estimated as zero, the removal efficiency was designated as 0.005 (0.5%) to indicate a low removal efficiency but still enable calculation of the AHLs.

Table 9 summarizes removal efficiencies for each of the water recycling plants.

Table 9. Removal Efficiency Summary

Parameters	Calculated RE_{WRF} (%)			
	RP-1	RP-4	RP-5	CCWRF
Metals				
Aluminum	95	95	97	95
Arsenic	NC	NC	NC	NC
Boron	9	-5	-2	5
Cadmium	NC	NC	NC	NC
Chromium	81	80	82	74
Copper	96	88	90	87
Iron	96	91	88	95
Lead	NC	NC	NC	NC
Manganese	75	-1	-29	92
Mercury	91	NC	90	91
Molybdenum	-1	15	22	-5
Nickel	50	36	41	39
Selenium	NC	NC	NC	NC
Silver	97	NC	NC	NC
Sodium	-17	-7	-15	-17
Zinc	89	79	77	83
General Chemistry Parameters				
Chloride	-35	-15	-19	-16
Cyanide (free)	13	NC	8	10
Cyanide (total)	72	59	68	63
Fluoride	38	33	23	22
Hardness	15	15	7	14
Sulfate	-4	-11	-22	-37
TDS	-1	7	-3	4
Organics				
Toluene	89	NC	87	88
bis(2-Ethylhexyl)phthalate	92	91	89	81

Notes: RE_{WRF} = removal efficiency from headworks to final effluent; Removal efficiencies were calculated from paired influent and effluent sample results from 2009 to 2014; % = percent; NC = not calculated

7.1.2 Primary Removal Efficiency

The primary removal efficiency, used in calculating AHLs based on secondary treatment inhibition criteria, could not be calculated due to insufficient primary effluent data. Observed concentrations in the primary sludge data indicate that some primary removal efficiency does occur. Literature values for primary removal efficiencies listed in the 2004 USEPA Guidance range from 10 to 27 percent. For the inhibition-based AHL, the removal efficiency was assumed conservatively to be 10 percent.

7.2 AHLs Based on Effluent Criteria

The effluent criteria from NPDES permit limits, Basin Plan limits, and recycled water limits were summarized in Table B-5 (Appendix B). The most stringent of these effluent criteria was used to calculate the effluent criteria AHL, using the following formula:

$$AHL = (8.34 * C_{eff} * Q_{WRF}) / (1 - RE_{WRF})$$

Where: AHL = Allowable headworks loading, in lb/day

$8.34 \frac{lb \cdot L}{mg \cdot mgal}$ = Unit conversion factor

C_{eff} = effluent discharge limit, in mg/L

Q_{WRF} = Average influent flow rate (2009 through 2014), in mgd

RE_{WRF} = Removal efficiency from headworks to final effluent, specific to each water recycling facility

7.3 AHLs Based on Secondary Process Inhibition Criteria

Inhibition AHL calculations vary depending on the type of biological process. Biological wastewater treatment processes at the IEUA water recycling plants include activated sludge and nitrification. For determination of secondary process inhibition AHLs, the more stringent value from the low end of the reported ranges of activated sludge and nitrification inhibition threshold levels (Appendix G, 2004 USEPA Guidance) was used as the inhibition criteria. The following formula was used to determine the secondary process inhibition AHL:

$$AHL = (8.34 * C_{inhib} * Q_{WRF}) / (1 - RE_{PRIM})$$

Where: AHL = Allowable headworks loading in lb/day

$8.34 \frac{lb \cdot L}{mg \cdot mgal}$ = Unit conversion factor

C_{inhib}= Inhibition criteria, in mg/L

Q_{WRF} = Average influent flow rate to the water recycling facility (WRF), in mgd

RE_{PRIM} = Removal efficiency from headworks to primary treatment effluent (conservatively assumed to be 10 percent)

7.4 AHLs Based on Sludge Digestion Inhibition Criteria

Biosolids are anaerobically digested at RP-1 and RP-2 with RP-4 biosolids routed to RP-1 and biosolids from RP-5 and CCWRF routed to RP-2, where they are also processed through anaerobic digestion. For anaerobic digestion inhibition, the following formula was used to determine the sludge digestion inhibition AHL:

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$AHL = (8.34 * C_{dginhib} * Q_{dgstr})/(RE_{WRF})$

Where: AHL = Allowable headworks loading in lb/day

$8.34 \frac{lb \cdot L}{mg \cdot mgal}$ = Unit conversion factor

$C_{dginhib}$= Anaerobic digestion inhibition criteria, in mg/L

Q_{dgstr} = Average sludge flow rate to digester, in mgd

RE_{WRF} = removal efficiency from headworks to final effluent; for compounds with an assumed zero removal, an efficiency of 0.005 was designated to allow calculation.

7.5 AHLs Based on Biosolids Criteria for Land Application

Dewatered biosolids from RP-1 and RP-2 are transported to a co-composting facility. Part 503 Biosolids regulations have established pollutant limits based on the biosolids end use. For the purposes of the AHL calculations, the limits were based on 40 CFR Part 503, Table 3, Monthly Average Pollutant Concentrations (also found in Appendix E of the 2004 USEPA Guidance). The following formula was used to determine the biosolids AHL for land application:

$AHL = (8.34 * C_{slgstd} * PS/100 * Q_{sldg}) / (RE_{WRF})$

Where: AHL = Allowable headworks loading in lb/day

$8.34 \frac{lb \cdot L}{mg \cdot mgal}$ = Unit conversion factor

C_{slgstd}= Sludge standard, in mg/kg dry weight

PS = Percent solids of sludge

Q_{sldg} = Average sludge flow rate, in wet tons per day

RE_{WRF} = Removal efficiency from headworks to final effluent

7.6 MAHLs

The maximum allowable headworks loadings (MAHLs) are the lowest, or most conservative, of the AHLs calculated for the POCs. However, where the secondary process inhibition or sludge digestion inhibition AHLs were the most conservative values, an additional step was taken in designating the MAHL. The 2004 USEPA Guidance states that treatment plants with no past inhibition problems may not need to calculate AHLs to protect against inhibition because the current loadings are acceptable to the treatment plant's biological processes. The 2004 USEPA Guidance also cautions against using literature values, such as those used for the inhibition criteria, as the basis for calculating a local limit as site-specific conditions are preferred: "Accurate and defensible local limits cannot be developed without the collection of site-specific data..." (2004 USEPA Guidance).

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For some of the IEUA water recycling plants, copper, silver, zinc, and/or cyanide (total) had secondary process inhibition or sludge digestion inhibition AHLs that were the most conservative of the AHL results. For these POCs, the MAHLs were based on the next lowest, non-inhibition AHL values. Tables D-1 through D-4 (Appendix D) present the selected MAHLs for each of the plants. Table 10 summarizes the MAHLs and lists the applicable AHL criteria.

Table 10. MAHLs Summary

Parameter	RP-1		RP-4		RP-5		CCWRF	
	(lb/day)	source	(lb/day)	source	(lb/day)	source	(lb/day)	source
Metals								
Aluminum	937	E	334	E	445	E	250	E
Arsenic	2.34	E	0.834	E	0.667	E	0.626	E
Boron	193	E	62.6	E	50.0	E	49.4	E
Cadmium	0.398	E	0.142	E	0.113	E	0.250	E
Chromium	61.7	E	20.9	E	18.5	E	12.0	E
Copper	45.8	LA	12.6	E	12.1	E	13.0	LA
Iron	1,758	E	278	E	167	E	375	E
Lead	0.961	E	0.342	E	0.274	E	0.938	E
Manganese	46.9	E	4.17	E	3.34	E	39.1	E
Mercury	5.21	E	0.167	E	0.155	LA	1.39	E
Molybdenum	439	LA	5.15	LA	2.79	LA	113	LA
Nickel	24.6	LA	12.0	LA	8.40	LA	8.14	LA
Selenium	0.961	E	0.342	E	0.667	E	0.626	E
Silver	391	E	4.17	E	3.34	E	3.13	E
Sodium	25,779	E	9,174	E	5,004	E	6,881	E
Zinc	92.2	LA	36.5	LA	29.8	LA	25.5	LA
General Chemistry								
Chloride	32,810	E	11,676	E	5,004	E	8,757	E
Cyanide (free)	1.13	E	0.350	E	0.334	E	0.299	E
Cyanide (total)	126	E	30.5	E	31.3	E	25.4	E
Fluoride	378	E	124	E	86.6	E	80.2	E
Hardness	13,786	E	4,906	E	3,587	E	3,637	E
Sulfate	35,153	E	12,510	E	4,003	E	9,383	E
TDS	128,89 5		49,323	E	36,696	E	35,836	E
Organics								
Toluene	320	E	12.5	E	77.0	E	78.2	E
bis(2-Ethylhexyl) phthalate	11.7	E	3.71	E	2.43	E	1.32	E

Notes: lb/day = pounds per day; Source = applicable AHL criteria selected as MAHL; E = AHL based on effluent criteria; LA = AHL based on biosolids criteria for land application

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8. Sensitivity Analysis

The fourth step in the local limits process involves performing a sensitivity analysis to refine the potential POCs. The 2004 USEPA Guidance recommends developing a local limit for a pollutant when its average influent loading exceeds 60 percent of the MAHL or the maximum daily influent loading exceeds 80 percent of the MAHL. Table D-5 (Appendix D) presents average and maximum influent loadings compared to MAHLs to evaluate which POCs observed in the influent warrant the development of local limits. In addition, potential POCs with existing local limits were also further analyzed. Table 11 presents the POCs that meet one or both of the guidance thresholds in the sensitivity analysis (bold) or which had an existing local limit (*).

Table 11. POCs Based on Sensitivity Analysis

National POCs	Screened POCs
Ammonia	Aluminum
Arsenic	**Bis(2-Ethylhexyl)phthalate**
BOD_5	Boron
Cadmium*	**Chloride**
Chromium*	Cyanide (free)*
Copper*	Fluoride
Cyanide (total)*	**Hardness**
Lead*	Iron
Mercury	**Manganese**
Molybdenum	**Sodium**
Nickel*	**Sulfate**
Selenium	**TDS***
Silver	Toluene
TSS	Total Nitrogen
Zinc*	

*POC with existing Local Limit

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9. Allowable Industrial Loadings (AILs)

The fifth step in the local limits process is to calculate the allowable industrial loadings (AILs) and determine allocation strategies for each POC. The AIL is the fraction of the MAHL that can be allocated to SIUs after accounting for a safety allowance (SA) and contributions from background sources. The AIL is calculated using the following formula:

$$AIL = MAHL - Background - SA$$

Where: AIL = Allowable industrial loading, in lb/day
MAHL = Maximum allowable headworks loading, in lb/day
Background = Loadings from uncontrolled (i.e., domestic and commercial) sources, in lb/day
SA = Safety allowance, which is safety factor * MAHL, in lb/day

9.1 Safety Factor

The safety factor in the AIL calculation protects the water recycling plants by accounting for data variability and slug loads. The 2004 USEPA Guidance generally recommends at least 10 percent for the safety factor. The representativeness of removal efficiencies, the number of not detected data or results around the reporting limit, or pollutants with large fluctuations in influent concentrations and loadings, are examples that would warrant use of a larger safety factor. For this evaluation, a safety factor of 10 percent was used and provides an allowance for factors such as growth, data variability, slug loadings, and quality/quantity of the data.

9.2 Uniform Concentration Limits

There are several accepted methods for allocating the AIL among controlled sources. For the uniform concentration limit (UCL) method, the AIL for each POC is divided by the total flow rates from all SIUs. The UCL has the advantage of being relatively simple to calculate and enforce, with a single concentration limit applied to all SIUs, but the method is relatively inflexible and may result in an overly stringent limit because industries that do not discharge a particular pollutant are still given an allocation. The UCL is calculated as follows:

$$UCL = AIL / (Q_{SIU} * 8.34)$$

Where: UCL = Uniform concentration limit, in mg/L
AIL = Allowable industrial loading, in lb/day
Q_{SIU} = Significant industrial users flows, in mgd

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$8.34 \frac{lb \cdot L}{mg \cdot mgal}$ = Conversion factor

UCLs were calculated for RP-1 and CCWRF since those plants directly receive SIU discharges.

9.3 Contributory Flow Limit

The contributory flow limit (CFL) method allocates the AIL only among the SIUs that discharge a particular pollutant above concentrations established as background concentrations. In this analysis, these SIUs are referred to as "controlled dischargers". CFLs were calculated for POCs where the UCL was close to or below SIU discharge concentrations. The CFL method may provide for increased flexibility, and limits do not tend to be excessively stringent. The CFL is calculated using the following formula:

$CFL = (AIL - L_{back}) / (Q_{cont} * 8.34)$

Where: CFL = Contributory flow limit, in mg/L
AIL = Allowable industrial loading, in lb/day
L_{back} = Background loading allocation from non-contributory SIUs (i.e., SIUs discharging pollutant at concentrations below the background concentration), in lb/day
Q_{cont} = Contributory SIU flows, in mgd; applicable to SIUs discharging the pollutant at concentrations greater than the background concentration threshold
$8.34 \frac{lb \cdot L}{mg \cdot mgal}$ = Unit conversion factor

The CFL is applied as discharge limit for only the SIUs identified as contributory dischargers. Table 12 summarizes the contributory dischargers to RP-1 and CCWRF.

Table 12. Contributory SIUs for CFL Calculations

POCs	SIUs
RP-1	
Nickel	Evolution Fresh, Inland Powder, Jewlland-Freya, Net Shapes, OW Lee, Parco, Schlosser Forge, Sun Badge
Selenium	Sun Badge Co.
TDS	Aquamar Inc., Cliffstar Corp., Coca-Cola, Evolution Fresh, Jewlland-Freya, Nongshim America Inc.
CCWRF	
Lead	Envision Plastics
Nickel	Envision Plastics, Jewlland-Freya
TDS	American Beef Packers, Scott Brothers Dairy, Envision Plastics Industries, Wing Lee Farms, Jewlland-Freya Health Sciences

Notes: Contributory SIUs = SIUs with wastewater discharge concentrations greater than or equal to the background concentration (flow-weighted averaged RP-4 and RP-5 influent from the 2014 additional sampling); SIU concentrations based on 2013 – 2014 data

AILs, UCLs, and CFLs were calculated for RP-1 and CCWRF since these plants directly receive SIU discharges and are presented in Tables F-1 and F-2 (Appendix F). Table F-3 compares the UCLs and CFLs, based on the 2013 to 2014 data set, to the 2004 limits. Recommendations for implementing the local limits are described in Section 12.

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10. Control Strategies for Conventional Pollutants

The 2004 USEPA Guidance suggests that the conventional pollutants BOD, TSS, and nitrogen be evaluated in a broader context than other POCs, as treatment facilities are typically designed to treat these pollutants, and alternatives to local limits may be considered. These options include, among others, expanding facilities; modifying plant processes, operations, or flow configurations to optimize performance; and reducing loadings of conventional pollutants from industrial sources through incentives and disincentives (e.g., surcharges).

In 2014, IEUA developed a series of technical memoranda as part of a wastewater facilities master plan (CH2MHILL & Carollo, Draft Technical Memoranda 4 through 8, 2014) to determine the 20-year capital improvements program (CIP) plant expansion projects and capital costs for each of the IEUA plants. Alternative flow routing was evaluated to determine the best options to achieve the following objectives with respect to reliability and redundancy:

- Ability to divert flows to RP-5 for system-wide redundancy
- Ability to utilize flow equalization/storage
- Robust capacity at RP-5 for receiving bypass flows
- RP-1 and RP-4 need to meet total inorganic nitrogen (TIN) requirements for groundwater recharge

Rated capacities of existing facilities to achieve these goals were determined through process modeling and CIP project schedules were based on these capacities. Recommendations for the 20-year planning period for RP-1 included adding secondary clarifiers, expanding liquid treatment facilities with the construction of a new membrane bio-reactor (MBR) facility, and expanding solids treatment facilities with the construction of new anaerobic digesters. Recommendations for RP-5 included expansion of liquid treatment facilities and relocation of RP-2 solids handling facilities to RP-5.

The wastewater facilities master planning project also included evaluation of diversion alternatives to balance flows and loadings to each plant (CH2MHill, Workshop No. 1 PowerPoint presentation, March, 2014). The plant capacity analyses demonstrated that IEUA can exercise its ability to direct and divert wastewater flows between service areas and plants to maintain optimal plant performance until the recommended CIP projects are completed.

SIUs contribute approximately 3.8 percent of the BOD loadings, 0.8 percent of the TSS loadings and 0.0002 percent of the ammonia loadings to RP-1 and approximately 15 percent of the BOD loadings, 6.9 percent of the TSS loadings, and 7.4 percent of the ammonia loadings to CCRWF.

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11. Control Strategies for TDS

The most stringent effluent criteria for TDS was based on NPDES effluent permit requirements. The NPDES permit states that the TDS limit is the lower of the following two limits:

1) The 12-month flow-weighted running average TDS constituent concentration and mass emission rates shall not exceed 550 mg/L and 366,960 lb/day, respectively. This limitation may be met on an agency-wide basis using flow-weighted averages of the discharges from RP-1, RP-4, RP-5, and CCWRF, or
2) The 12-month flow-weighted running average TDS concentration shall not exceed the 12-month flow-weighted running average TDS concentration in the water supply by more than 250 mg/L. This limitation may be met on an agency-wide basis using flow-weighted averages of the water supplied to RP-1, RP-4, RP-5, and CCWRF service areas.

Effluent TDS concentrations vary between the plants, as summarized in Table 13. The TDS concentration in the combined IEUA system-wide effluent was 502 mg/L for the 2013 to 2014 time period.

Table 13. Effluent TDS Concentrations

	RP-1	RP-4	RP-5	CCWRF	Combined IEUA-Wide
Flow-weighted Effluent TDS (mg/L)	492	470	534	547	502

Notes: mg/L = milligrams per liter; flow-weighted concentrations based on 2013 to 2014 data

As illustrated in Figure 5, the TDS concentrations of the source water among the water recycling plants has been increasing over recent years. The flow-weighted TDS concentration of the combined source water increased from 241 mg/L in 2009 to 265 mg/L in 2014. Based on 2014 data, the 12-month running, flow-weighted average of the combined source water (257 mg/L) plus 250 mg/L resulted in a target of 507 mg/L.

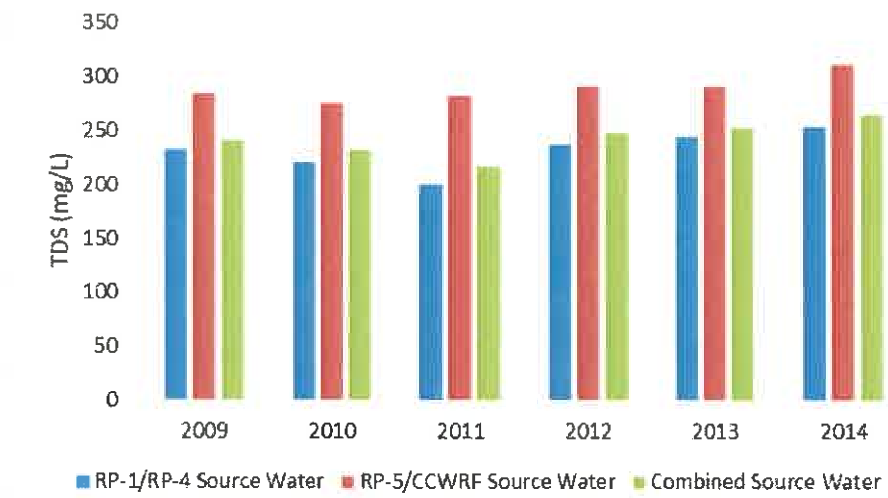

Figure 5. TDS Concentrations in Source Water

TDS was identified as a POC with potential issues during the 2004 local limits evaluation which was calculated based on flows from RP-1. Elevated background concentrations and loadings are due in part to the increasing source water concentrations, water conservation, and continuing drought conditions. As the background concentrations of TDS increase, the amount of TDS loading that can be allocated to SIUs becomes more constrained. To provide a consistent basis for calculation, the TDS effluent limit of 550 mg/L was chosen as a basis of calculation for the MAHL. This basis was also chosen to provide a conservative estimate as background TDS continues to rise.

Table 14 summarizes the key components of the local limits calculations for TDS for data compiled from January 2013 – April 2014, plus additional data from the Sept 2014 sampling event. The TDS MAHLs, based on 550 mg/L as the most stringent effluent criteria and assuming a removal efficiency of zero, were 128,895 lb/day for RP-1 and 35,836 lb/day for CCWRF. Based on the flow-weighted average TDS background concentration was 503 mg/L for both RP-1 and CCWRF and the background loadings were 111,168 lb/day (RP-1) and 28,232 lb/day (CCWRF). Assuming a 10 percent safety factor, the calculated AILs were 4,837 lb/day (RP-1) and 4,020 lb/day (CCWRF). Based on these AILs, the calculated TDS UCLs were 1,158 mg/L for RP-1 and 1,034 mg/L for CCWRF. However, based on the TDS concentrations in the SIU discharges, the UCLs may be challenging for some of the SIUs to meet. CFLs were then calculated to determine whether a more flexible, yet protective limit could be set. The calculated TDS CFLs were 1,746 mg/L for RP-1 and 1,034 mg/L for CCWRF. For CCWRF, the UCL and CFL limits were the same since all of the SIUs discharging to that plant had TDS concentrations greater than the background and were classified as contributing SIUs. The elevated background loadings may also be causing a bias in the calculated CFLs.

Table 14. TDS Local Limits Calculations Summary

Parameter	RP-1	CCWRF
Q_{WRF} (mgd)	27.0	7.2
MAHLs (lb/day)	128,895	35,836
Avg Background Conc (mg/L)	503	503
Avg Background Loading (lb/day)	111,168	28,232
AIL (lb/day)	4,837	4,020
Observed Avg Influent Conc (mg/L)	472	544
Avg Influent Loading (lb/day)	106,285	32,666
AIL/Avg Influent Loading (%)	4.55	12.3
UCLs (mg/L)	1,158	1,034
CFLs (mg/L)	1,746	1,034

Notes: mgd = million gallons per day; mg/L = milligrams per liter; lb/day = pounds per day; Avg = average; Q_{WRF} based on 2013 to 2014 flow data; MAHLs from Tables D-1 & D-4 (based on 2009 to 2014 flows); Avg Background Conc = flow weighted average from 2014 additional sampling (Table 6); average background loading from Tables F-1 & F-2; average influent concentration and loading from Jan 2013 through April 2014 data plus additional data from Sept 2014 sampling event (Table C-1); AILs, UCLs, and CFLs, from Tables F-1 and F-2

Another element adding to the complexity of regulating SIU discharges of TDS involves the ability to measure TDS. TDS measured at an SIU discharge consists of inorganic salts and small amounts of organic matter that are dissolved in the wastewater. As wastewater moves through the collection system some of the organic matter is biodegraded or solubilized, meaning that the TDS measured at the SIU discharge may be higher than the SIU's TDS contribution at the treatment plant influent. The analytical method for measuring TDS, Standard Method (SM) 2540C, involves measuring sample residue after drying at 180 degrees Celsius. One approach to measure the salt or mineral content of TDS rather than the organic component is through performing SM 2540E for TDS (fixed) analysis. This method involves measuring sample residue after drying at 550 degrees Celsius, thereby eliminating much of the organic contribution.

Table 15 presents TDS and TDS (fixed) concentrations and loadings for SIUs, observed influents, and calculated backgrounds at RP-1 and CCWRF. The TDS (fixed) to TDS concentrations will vary depending on the type of wastewater being discharged by the SIU. SIUs having more organic laden wastewater typically had lower TDS (fixed) than TDS concentrations.

Table 15. SIU TDS and TDS (Fixed) Loadings

SIUs	Avg Flow (mgd)	TDS		TDS (fixed)		TDS (fixed)/ TDS (%)
		Avg Conc (mg/L)	Avg Loading (lb/day)	Avg Conc (mg/L)	Avg Loading (lb/day)	
RP-1 SIUs						
Amphastar	0.002	40	0.679	--	--	--
Aquamar	0.029	824	199	564	136	68.3
Cliffstar	0.059	2860	1,401	736	361	25.8
Coca-Cola	0.126	1302	1,368	580	609	44.5
Discus Dental	0.0005	245	1.02	--	--	--
Evolution Fresh	0.053	1150	507	611	268	52.8
Inland Powder	0.0052	182	7.94	--	--	--
Jewliand-Freya	0.0013	514	5.56	285	3.09	55.6
Nestle	0.11	397	362	342	311	85.9
Netshapes	0.0015	304	3.77	--	--	--
Nong Shim	0.025	714	147	529	109	74.1
O.W. Lee	0.003	253	6.33	--	--	--
PAC Rancho	0.010	307	25.3	--	--	--
Parallel Products	0.064	232	123	135	71.6	58.2
Parco	0.005	301	11.5	--	--	--
Schlosser Forge	0.005	441	18.4	--	--	--
Sun Badge	0.00045	421	1.57	--	--	--
Western Metals	0.002	270	4.51	--	--	--
Total RP-1 SIUs			4,194		1,870	44.6
Avg RP-1 Influent	27.0	472	106,285	414	93,225	87.7
Avg RP-1 Background	26.5	503	111,168	427	94,371	84.9
CCWRF SIUs						
American Beef Packers	0.306	1196	3,056	549	1403	45.9
Envision Plastics	0.069	894	515	511	294	57.1
Jewliand-Freya	0.0013	513	5.56	285	3.09	55.6
Scott Brothers Dairy	0.052	1819	790	663	288	36.4
Wing Lee Farms	0.038	909	285	536	168	58.9
Total CCWRF SIUs			4,652		2,156	46.3
Avg CCWRF Influent	7.2	544	32,666	493	29,604	90.6
Avg CCWRF Background	6.73	503	28,232	427	23,967	84.9

Notes: mgd = million gallons per day; mg/L = milligrams per liter; lb/day = pounds per day; % = percent; Avg = average; background flow = influent flow – SIU flow; average influent concentration and loading from Jan 2013 through April 2014 data plus additional data from Sept 2014 sampling event (Table C-1); SIU loading is based on 2013 to 2014 data (Tables C-4 & C-5); background loading is based on 2013 to 2014 data (Tables F-1 & F-2)

Using the TDS (fixed) analytical method will take into account the loss of organic components of TDS during transport through the collection system. Given the available TDS (fixed) data, implementing a local limit based on a UCL and TDS (fixed) as a monthly average would provide flexibility for implementation without being overly burdensome to the dischargers or for IEUA to implement. This strategy will be protective of the water recycling plants, and has already received approval by the RWQCB. While SIUs may comply with local TDS limits using the SM 2540E TDS (fixed) analytical method, IEUA should have SIUs monitor for both TDS and TDS (fixed) as the amount of degradation during transport in the collection system is not well understood.

Unfortunately, the ongoing drought has resulted in a rapid increase in source water TDS which has caused a dramatic increase in the IEUA water recycling plants' influent TDS. As mentioned previously, the flow weighted average source water TDS was 265 mg/L during the study period (2013-2014). The source water TDS data as of May 2015 is ~340 mg/L. As climatologists expect the drought to continue for some time in California, IEUA should be looking at other options for controlling TDS. Data evaluated by IEUA from October 2014 through May 2015 shows that the flow weighted TDS of the background water recycling plant influent is 553 mg/L compared to 503 mg/L during the study period. When the updated background loading is applied to the calculation for the TDS local limit along with the application of the safety factor, the allowable industrial loading (AIL) becomes a negative number. Since the AIL is a negative number, there is currently no available TDS for allocation to the permitted SIUs. As a result, it is difficult to make a technically based recommendation for TDS at this time. If conditions change IEUA should consider reevaluating the local limits for TDS.

Additional approaches for controlling TDS

IEUA should explore the possibility of connecting industries to the NRWS when feasible, allowing for additional flexibility for the remaining SIUs. IEUA has encouraged the use of the NRWS for dischargers with high levels of dissolved salts, however the cost to develop the necessary infrastructure to connect to the NRWS has previously been a deterrent. IEUA should consider engaging in discussions with SIUs – either individually or as a group – to explore whether this option can be revisited.

IEUA has the ability to divert flows from RP-1 and CCWRF. Diverting flows could potentially distribute the TDS loading to the plants. However, the typical driver for diverting plant flows is demand management of the recycled water demands rather than pollutant loading. Therefore, it is not anticipated that this strategy will be used to control TDS. If source water TDS decreases in the future, IEUA may want to consider reevaluating the local limits for TDS, including the potential for SIU compliance via TDS (fixed). If compliance via TDS (fixed) becomes no longer feasible, one approach is to revert back to compliance via TDS method 2540C which may be challenging for some SIUs to meet.

12. Conclusions and Recommendations

IEUA initiated this study in order to update the 2004 local limits, reflecting current (2013 to 2014) site-specific conditions to be protective of the water recycling plants. The methodology used in this local limits evaluation is technically defensible and based on the 2004 USEPA Guidance. The local limits study involved identifying potential POCs, analyzing wastewater concentration and flow data, calculating AHLs, performing sensitivity analyses, calculating AILs, and determining allocation strategies for each POC.

Wastewater flows within the IEUA collection system have decreased over the last four years (2009 to 2014), in part due to water conservation. IEUA has the ability to divert wastewater flows between plants. The local limits calculations, presented in this report, used wastewater flows and concentrations from 2013 to 2014. Additional sampling was performed during September and October 2014 to supplement available wastewater data and focused on data needed for influent mass balance calculations, removal efficiencies, and background concentrations. To estimate background concentrations, bypasses to RP-4 and RP-5 were curtailed so that influent concentrations at these two plants did not contain SIU discharges.

Industrial discharge limits, in the form of UCLs and CFLs, were calculated for RP-1 and CCWRF since these plants directly receive SIU discharges. Tables 16 through 32 summarize the key elements of the local limits evaluation for each of the POCs, along with recommendations for implementing an updated local limit or continuing to monitor without enforcing a local limit.

The recommendations are based on POC-specific conditions, including SIU loading compared to background loading, SIU concentrations relative to calculated UCLs/CFLs, the number of non-detected values in the data set that the UCL/CFL was based on, and relative impact of implementing UCL or CFL on SIUs. The overall SIU flow contribution to these plants was relatively low: 1.8% for RP-1 and 6.5% for CCWRF. The recommendations listed in Table 33 are based on the calculated limits for CCWRF, since the CCWRF limits were more conservative and would be protective of both plants. Basing the local limit values on the more conservative values also removes incentives for new industries to locate in specific portions of the service area. For those POCs where local limits were not established, IEUA will incorporate these POCs into their existing monitoring program to ensure that these constituents do not pose issues for the plants in the future. This existing monitoring program includes sampling the plant influent on a weekly basis for conventional pollutants, cyanide (free), TDS, and TDS (fixed); and on a quarterly basis for metals. SIU's monitor on a quarterly or semi-annual basis, depending on the constituent.

Table 16. Overview of Local Limits Evaluation for Cadmium

Local Limits	Evaluation
POC Trigger	Identified during screening process and evaluated for local limits based on meeting influent loading/MAHL sensitivity thresholds
2004 Local Limit	2.8 mg/L
Avg background concentration	Non-detect RP-1 and CCWRF influent concentrations were also non-detect
2014 calculated UCLs	0.09 mg/L (RP-1) and 0.06 mg/L (CCWRF), UCLs assumed zero background loading
2014 calculated CFLs	Not calculated; there were no contributing SIUs
Avg Influent Loading /MAHL	283% (RP-1) and 120% (CCWRF) However, influent concentrations were all non-detect; percentages above the 60% sensitivity threshold are artifact of non-detect substitution
Max Influent Loading /MAHL	Not applicable since influent concentrations were all non-detect
SIU loading contribution	SIU loading = 0.36% of RP-1 influent loading and 10.0% of CCWRF influent loading (based on non-detect substitutions) RP-1 SIU loading is from Inland Powder (0.00016 lb/day) and Net Shapes (0.00010 lb/day) CCWRF SIUs were non-detect for cadmium
SIU concentrations	During 2013 – 2014, RP-1 SIUs only had 2 cadmium detections out of 101 results and CCWRF SIUs were non-detect for cadmium
Recommendation *= Monitor at plant influent/effluent and applicable SIUs with no local limit; based on the number of non-detect data points, the 2014 calculated UCLs may be influenced due to the non-detect substitution*	

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Table 17. Overview of Local Limits Evaluation for Chromium

Local Limits	Evaluation
POC Trigger	Identified during screening process but was below influent loading/MAHL sensitivity thresholds; Existing 2004 local limit.
2004 Local Limit	60 mg/L
Avg background concentration	Non-detect RP-1 and CCWRF influent concentrations were also non-detect
2014 calculated UCLs	13.3 mg/L (RP-1) and 2.79 mg/L (CCWRF), UCLs assumed zero background loading
2014 calculated CFLs	No calculated
Avg Influent Loading /MAHL	1.8% (RP-1) and 2.5% (CCWRF) Both are less than the sensitivity threshold of 60% for assessing as local limit
Max Influent Loading /MAHL	Not applicable since influent concentrations were all non-detect
SIU loading contribution	SIU loading = 0.97% of RP-1 influent loading and 15.3% of CCWRF influent loading RP-1 SIU loading is from Amphastar (0.00015 lb/day), Evolution Fresh (0.005 lb/day), Jewlland-Freya (0.000082 lb/day), Net Shapes (0.00010 lb/day), PAC Rancho (0.00075 lb/day), Parco (0.0005 lb/day), and Western Metals (0.00036 lb/day) CCWRF SIU loading is from Envision Plastic (0.021 lb/day) and Jewlland-Freya (0.000082 lb/day)
SIU concentrations	RP-1 SIU average concentrations range from 0.0076 mg/L (Jewlland-Freya) to 0.021 mg/L (Wing Lee Farms) CCWRF SIU average concentrations range from 0.0076 mg/L (Jewlland-Freya) to 0.037 mg/L (Envision Plastics)

***Recommendation** = Update local limits to 2.79 mg/L as a daily max and continue to monitor at plant influent/effluent and applicable SIUs. The 2014 calculated UCLs are below the 2004 local limit but still above average SIU concentrations.*

Table 18. Overview of Local Limits Evaluation for Copper

Local Limits	Evaluation
POC Trigger	Identified during screening process but was below influent loading/MAHL sensitivity thresholds; Existing 2004 local limit.
2004 Local Limit	45 mg/L
Avg background concentration	0.05 mg/L
2014 calculated UCLs	7.22 mg/L (RP-1) and 2.29 mg/L (CCWRF)
2014 calculated CFLs	Not calculated
Avg Influent Loading /MAHL	31% (RP-1) and 29% (CCWRF) Both are less than the sensitivity threshold of 60% for assessing as local limit
Max Influent Loading /MAHL	39% (RP-1) and 37% (CCWRF) Both are less than the sensitivity threshold of 80% for assessing as local limit
SIU loading contribution	SIU loading = 0.24% of RP-1 influent loading and 5.46% of CCWRF influent loading RP-1 SIU loading is from Amphastar (0.00017 lb/day), Discus Dental (0.00016 lb/day), Evolution Fresh (0.019 lb/day), Jewlland-Freya (0.0012 lb/day), Net Shapes (0.0011 lb/day), OW Lee (0.00033 lb/day), PAC Rancho (0.00078 lb/day), Parallel Products (0.0085 lb/day), Parco (0.0016 lb/day), Schlosser Forge (0.0005 lb/day), Sun Badge (0.00006 lb/day), and Western Metals (0.00019 lb/day) CCWRF SIU loading is from Envision Plastic (0.098 lb/day), Jewlland-Freya (0.0012 lb/day), and Wing Lee Farms (0.06 lb/day)
SIU concentrations	RP-1 SIU average concentrations ranged from 0.0095 mg/L (PAC Rancho) to 0.11 mg/L (Jewlland-Freya) CCWRF SIU average concentrations ranged from 0.11 mg/L (Jewlland-Freya) to 0.19 mg/L (Wing Lee Farms)

***Recommendation** = Update local limits to 2.29 mg/L as a daily max and continue to monitor at plant influent/effluent and applicable SIUs. The 2014 calculated UCLs are below the 2004 local limit but still above average SIU concentrations.*

Table 19. Overview of Local Limits Evaluation for Cyanide

Local Limits	Evaluation
POC Trigger	Identified during screening process for cyanide (free) and cyanide (total) but was below influent loading/MAHL sensitivity threshold; Existing 2004 local limit
2004 Local Limit	1.2 mg/L for cyanide (available)
Avg background concentration	Background concentrations for cyanide (free) were nondetect and for cyanide (total) = 0.010 mg/L
2014 calculated UCLs	Calculated for cyanide (free), 0.24 mg/L (RP-1) and 0.07 mg/L (CCWRF), assumed zero background loading
2014 calculated CFLs	Not calculated; no contributory SIUs discharges for cyanide (free)
Avg Influent Loading /MAHL	22% (RP-1) and 20% (CCWRF) for cyanide (free) 2.0% (RP-1) and 2.2% (CCWRF) for cyanide (total) Both below the 60% sensitivity threshold
Max Influent Loading /MAHL	60% (RP-1) and not applicable for CCWRF since influent concentrations were all non-detect for cyanide (free); 4.1% (RP-1) and 4.0% (CCWRF) since influent concentrations were all non-detect for cyanide (total) Both below the 80% sensitivity threshold
SIU loading contribution	SIU loading = 0.004% of RP-1 influent loading and 15.0% of CCWRF influent loading for cyanide (free) SIU loading = 0.18% of RP-1 influent loading and 12.2% of CCWRF influent loading for cyanide (total) For cyanide (total), RP-1 SIU loading ranged from Jewlland-Freya (0.000053 lb/day) to Evolution Fresh (0.0018 lb/day); for cyanide (free), RP-1 SIUs were either not detected or not analyzed For cyanide (total), CCWRF SIU loading ranged from Jewlland-Freya (0.000053 lb/day) to American Beef Packers (0.059 lb/day); for cyanide (free), CCWRF SIU loading ranged from Envision Plastic (0.00058 lb/day) to American Beef Packers (0.0069 lb/day)
SIU concentrations	RP-1 SIU average concentrations for cyanide (total) ranged from 0.0029 mg/L (OW Lee) to 0.013 mg/L (Amphastar); only one SIU had cyanide (free) analyzed and it was non-detect CCWRF SIU average concentrations for cyanide (free) were 0.0027 mg/L (American Beef Packers and Wing Lee Farms) and for cyanide (total) ranged from 0.0049 mg/L (Jewlland-Freya) to 0.023 mg/L (American Beef Packers)

***Recommendation**: Monitor cyanide (free) at plant influent/effluent and applicable SIUs with no local limit; based on the number of non-detect data points, the 2014 calculated UCLs may be influenced due to the non-detect substitution*

Table 20. Overview of Local Limits Evaluation for Lead

Local Limits	Evaluation
POC Trigger	Identified during screening process and evaluated for local limits based on meeting influent/MAHL sensitivity thresholds
2004 Local Limit	14 mg/L
Avg background concentration	Non-detect RP-1 and CCWRF influent concentrations were also non-detect
2014 calculated UCLs	0.21 mg/L (RP-1) and 0.22 mg/L (CCWRF), UCLs assumed zero background loading
2014 calculated CFLs	1.38 mg/L (CCWRF), assumed zero background loading Not calculated for RP-1
Avg Influent Loading /MAHL	234% (RP-1) and 64% (CCWRF) However, influent concentrations were all non-detect; percentages above the 60% sensitivity threshold are artifact of non-detect substitution
Max Influent Loading /MAHL	Not applicable since influent concentrations were all non-detect
SIU loading contribution	SIU loading = 0.49% of RP-1 influent loading and 15.8% of CCWRF influent loading RP-1 SIU loading is from Net Shapes (0.0004 lb/day) CCWRF SIU loading is from Envision Plastic (0.044 lb/day)
SIU concentrations	RP-1 average SIU concentration is 0.032 mg/L (Net Shapes) and is based on 1 detection out of 6 results CCWRF average SIU concentration is 0.077 mg/L (Envision Plastic) and is based on 3 detections out of 3 results

***Recommendation**: Update local limit to 1.38 mg/L for Net Shapes and Envision Plastic (as contributory SIUs) as a daily max. Set alert level of 0.02 mg/L for all other SIUs (if SIU exceeds alert level, assess if SIU should be considered contributory SIU). If new SIU begins discharging to IEUA collection system, assess if it would be considered contributory SIU for lead and permit appropriately.*

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Table 21. Overview of Local Limits Evaluation for Nickel

Local Limits	Evaluation
POC Trigger	Identified during screening process but was below influent loading/MAHL sensitivity threshold; Existing 2004 local limit.
2004 Local Limit	45 mg/L
Avg background concentration	Non-detect RP-1 and CCWRF influent concentrations were also non-detect
2014 calculated UCLs	5.30 mg/L (RP-1) and 1.89 mg/L (CCWRF), UCLs assumed zero background loading
2014 calculated CFLs	35.7 mg/L (RP-1) and 12.5 mg/L (CCWRF); assumed zero background loading
Avg Influent Loading /MAHL	4.6% (RP-1) and 3.7% (CCWRF) Both below the 60% sensitivity threshold
Max Influent Loading /MAHL	Not applicable since influent concentrations were all non-detect
SIU loading contribution	SIU loading = 1.06% of RP-1 influent loading and 12.7% of CCWRF influent loading RP-1 SIU loading is from Evolution Fresh (0.0039 lb/day), Inland Powder (0.00041 lb/day), Jewlland-Freya (0.00012 lb/day), Net Shapes (0.00036 lb/day), OW Lee (0.0003 lb/day), Parco (0.0018 lb/day), Schlosser Forge (0.0005 lb/day), and Sun Badge (0.000034 lb/day) CCWRF SIU loading is from Envision Plastic (0.013 lb/day) and Jewlland-Freya (0.00012 lb/day)
SIU concentrations	RP-1 SIU average concentrations ranged from 0.0089 mg/L (Evolution Fresh) to 0.046 mg/L (Parco) CCWRF SIU average concentrations ranged from 0.11 mg/L (Jewlland-Freya) to 0.023 mg/L (Envision Plastics)

***Recommendation**: Update local limit to 12.5 mg/L for Evolution Fresh, Inland Powder, Jewlland-Freya, Net Shapes, OW Lee, Parco, Schlosser Forge, Sun Badge, and Envision Plastics (as contributory SIUs) as a daily max. Set alert level of 0.19 mg/L for all other SIUs (if SIU exceeds alert level, assess if SIU should be considered contributory SIU). If new SIU begins discharging to IEUA collection system, assess if it would be considered contributory SIU for nickel and permit appropriately.*

Table 22. Overview of Local Limits Evaluation for Selenium

Local Limits	Evaluation
POC Trigger	Identified during screening process and evaluated for local limits based on meeting influent loading/MAHL sensitivity threshold
2004 Local Limit	No 2004 Limit
Avg background concentration	Non-detect RP-1 and CCWRF influent concentrations were also non-detect
2014 calculated UCLs	0.21 mg/L (RP-1) and 0.14 mg/L (CCWRF), UCLs assumed zero background loading
2014 calculated CFLs	227 mg/L (RP-1), assumed zero background loading Not calculated for CCWRF
Avg Influent Loading /MAHL	234% (RP-1) and 96% (CCWRF) However, influent concentrations were all non-detect; percentages above the 60% sensitivity threshold are artifact of non-detect substitution
Max Influent Loading /MAHL	Not applicable since influent concentrations were all non-detect
SIU loading contribution	SIU loading = 0.67% of RP-1 influent loading and 10.2% of CCWRF influent loading (based on non-detect substitutions) RP-1 SIU loading is from Sun Badge (0.0024 lb/day) No loading from CCWRF SIUs (all nondetect)
SIU concentrations	RP-1 SIU average concentration is 0.65 mg/L (Sun Badge) CCWRF SIUs were all nondetect

***Recommendation:** Continue monitoring at plant influent/effluent and applicable SIUs with no local limit; work with Sun Badge to assess potential best management practices (BMPs).*

Table 23. Overview of Local Limits Evaluation for Zinc

Local Limits	Evaluation
POC Trigger	Identified during screening process and evaluated for local limits based on meeting influent loading/MAHL sensitivity threshold
2004 Local Limit	50 mg/L
Avg background concentration	0.15 mg/L
2014 calculated UCLs	11.9 mg/L (RP-1) and 3.74 mg/L (CCWRF)
2014 calculated CFLs	Not calculated
Avg Influent Loading /MAHL	46% (RP-1) and 52% (CCWRF) Both below the 60% sensitivity threshold
Max Influent Loading /MAHL	59% (RP-1) and 85% (CCWRF) RP-1 below the 80% sensitivity threshold but CCWRF above the threshold
SIU loading contribution	SIU loading = 0.32% of RP-1 influent loading and 6.09% of CCWRF influent loading RP-1 SIU loading is from Amphastar (0.00057 lb/day), Discuss Dental (0.0006 lb/day), Evolution Fresh (0.079 lb/day), Inland Powder (0.010 lb/day), Jewlland-Freya (0.0087 lb/day), Net Shapes (0.0043 lb/day), OW Lee (0.0050 lb/day), PAC Rancho (0.0016 lb/day), Parallel Products (0.011 lb/day), Parco (0.010 lb/day), Schlosser Forge (0.0042 lb/day), Sun Badge (0.00045 lb/day), and Western Metals (0.0027 lb/day) CCWRF SIU loading is from American Beef Packers (0.332 lb/day), Envision Plastic (0.391 lb/day), Jewlland-Freya (0.0087 lb/day), Scott Brother Dairy (0.025 lb/day), and Wing Lee Farms (0.047 lb/day)
SIU concentrations	RP-1 SIU average concentrations ranged from 0.019 mg/L (PAC Rancho) to 0.80 mg/L (Jewlland-Freya) CCWRF SIU average concentrations ranged from 0.057 mg/L (Scott Brothers Dairy) to 0.68 mg/L (Envision Plastics)

***Recommendation**: Update local limit to 3.74 mg/L as a daily max to be protective of the IEUA collection system and continue to monitor plant influent/effluent and applicable SIUs*

Table 24. Overview of Local Limits Evaluation for BOD

Local Limits	Evaluation
POC Trigger	Identified during screening process
2004 Local Limit	No 2004 Local Limit
Avg background concentration	272 mg/L
2014 calculated UCLs	Not calculated; assessed plant capacity
2014 calculated CFLs	Not calculated; assessed plant capacity
Avg Influent Loading /MAHL	Not calculated; assessed plant capacity
Max Influent Loading /MAHL	Not calculated; assessed plant capacity
SIU loading contribution	SIU loading = 3.8% of RP-1 influent loading and 15.1% of CCWRF influent loading RP-1 SIU loading is from Amphastar (0.220 lb/day), Aquamar (256 lb/day), Cliffstar (828 lb/day), Coca-Cola (2,467 lb/day), Discuss Dental (0.867 lb/day), Evolution Fresh (388 lb/day), Inland Powder (0.742 lb/day), Jewlland-Freya (5.06 lb/day), Nestle (6.38 lb/day), Net Shapes (0.460 lb/day), Nong Shim (21.0 lb/day), OW Lee (0.183 lb/day), PAC Rancho (12.0 lb/day), Parallel Products (827 lb/day), Parco (1.76 lb/day), Schlosser Forge (1.96 lb/day), Sun Badge (0.309 lb/day), and Western Metals (0.175 lb/day) CCWRF SIU loading is from American Beef Packers (2,435 lb/day), Envision Plastic (520 lb/day), Jewlland-Freya (5.06 lb/day), Scott Brother Dairy (953 lb/day), and Wing Lee Farms (243 lb/day)
SIU concentrations	RP-1 SIU average concentrations ranged from 7.0 mg/L (Nestle) to 2348 mg/L (Coca-Cola) CCWRF SIU average concentrations ranged from 467 mg/L (Jewlland-Freya) to 2194 mg/L (Scott Brothers Dairy)

***Recommendation**: Continue monitoring at plant influent/effluent and SIUs with no local limit. Ability to divert flows between plants provides flexibility for overall system capacity.*

Table 25. Overview of Local Limits Evaluation for Nitrogen Species (Ammonia, Nitrate, Nitrite)

Local Limits	Evaluation
POC Trigger	Ammonia, nitrate + nitrite, nitrate, and total inorganic nitrogen were all identified during screening process
2004 Local Limit	No 2004 Local Limit
Avg background concentration	Ammonia = 41.0 mg/L, nitrate = 0.09 mg/L, and nitrite = 0.14 mg/L
2014 calculated UCLs	Not calculated; assessed plant capacity
2014 calculated CFLs	Not calculated; assessed plant capacity
Avg Influent Loading /MAHL	Not calculated; assessed plant capacity
Max Influent Loading /MAHL	Not calculated; assessed plant capacity
SIU loading contribution	SIU loading = 0.0002% of RP-1 influent loading and 7.45% of CCWRF influent loading for ammonia SIU loading = 0.008% of RP-1 influent loading and 32.0% of CCWRF influent loading for nitrate SIU loading = 0.016% of RP-1 influent loading and 184% of CCWRF influent loading for nitrite RP-1 SIU loading is from Jewlland-Freya (0.0033 lb/day for ammonia, 0.010 lb/day for nitrate, and 0.013 lb/day for nitrite) CCWRF SIU loading is from American Beef Packers (134 lb/day for ammonia, 2.94 lb/day for nitrate, and 2.76 lb/day for nitrite), Envision Plastic (0.748 lb/day for ammonia, 0.219 lb/day for nitrate, and 0.098 lb/day for nitrite), Jewlland-Freya (0.0033 lb/day for ammonia, 0.010 lb/day for nitrate, and 0.013 lb/day for nitrite), Scott Brothers Dairy (0.421 lb/day ammonia, 0.695 lb/day for nitrate, and 0.352 lb/day for nitrite), and Wing Lee Farms (12.9 lb/day for ammonia, 0.069 lb/day for nitrate, and 0.094 for nitrite)
SIU concentrations	RP-1 SIU average concentrations ranged from 0.30 mg/L (Jewlland-Freya) to 0.33 mg/L (Schlosser Forge); for ammonia (other SIUs were not analyzed for ammonia); nitrate (0.92 mg/L) and nitrite (1.22 mg/L) were only analyzed at Jewlland-Freya CCWRF SIU average concentrations for ammonia ranged from 0.3.0 mg/L (Jewlland-Freya) to 52.3 mg/L (American Beef Packers), for nitrate ranged from 0.22 mg/L (Wing Lee Farms) to 1.6 mg/L (Scott Brother Dairy), and for nitrite ranged from 0.17 mg/L (Envision Plastics) to 1.22 mg/L (Jewlland-Freya)

Recommendation: *Continue monitoring at plant influent/effluent and SIUs with no local limit. Ability to divert flows between plants provides flexibility for overall system capacity.*

Table 26. Overview of Local Limits Evaluation for Bis(2-Ethylhexyl)phthalate

Local Limits	Evaluation
POC Trigger	Identified during screening process and evaluated for local limits based on meeting influent/MAHL sensitivity thresholds
2004 Local Limit	No 2004 Local Limit
Avg background concentration	0.011 mg/L
2014 calculated UCLs	1.94 mg/L (RP-1) and 0.15 mg/L (CCWRF)
2014 calculated CFLs	Not calculated
Avg Influent Loading /MAHL	13% (RP-1) and 37% (CCWRF) Both below the 60% sensitivity threshold
Max Influent Loading /MAHL	27% (RP-1) and 82% (CCWRF) CCWRF above the 80% sensitivity threshold; however, the max CCWRF influent loading/MAHL exceeded the 80% threshold based on two detections)
SIU loading contribution	SIU loading = 0.058% of RP-1 influent loading and there was no available data for SIUs contributing to CCWRF influent loading RP-1 SIU loading is from PAC Rancho (0.0089 lb/day), and Schlosser Forge (0.00028 lb/day)
SIU concentrations	RP-1 SIU average concentrations ranged from 0.0068 mg/L (Schlosser Forge) to 0.108 mg/L (PAC Rancho) CCWRF SIUs were not analyzed for bis(2-ethylhexyl)-phthalate during 2013 to 2014

***Recommendation**: Bis(2-ethylhexyl)phthalate is not solely an industrial contaminant; implementing a local limit would have minimal impact on concentrations observed at the plant influents. Continue to routine monitoring at plant influent and effluent and at applicable SIUs with no local limit.*

Table 27. Overview of Local Limits Evaluation for Chloride

Local Limits	Evaluation
POC Trigger	Identified during screening process and evaluated for local limits based on meeting influent loading/MAHL sensitivity threshold
2004 Local Limit	No 2004 Local Limit
Avg background concentration	102 mg/L
2014 calculated UCLs	1,672 mg/L (RP-1) and 555 mg/L (CCWRF)
2014 calculated CFLs	Not calculated
Avg Influent Loading /MAHL	59% (RP-1) and 83% (CCWRF) Both above the 60% sensitivity threshold
Max Influent Loading /MAHL	71% (RP-1) and 101% (CCWRF) CCWRF above the 80% sensitivity threshold
SIU loading contribution	SIU loading = 0.005% of RP-1 influent loading and 7.90% of CCWRF influent loading RP-1 SIU loading is from Jewlland-Freya (1.01 lb/day); other RP-1 SIUs were not analyzed for chloride CCWRF SIU loading is from American Beef Packers (383 lb/day), Envision Plastic (74.5 lb/day), Jewlland-Freya (1.01 lb/day), Scott Brother Dairy (64.3 lb/day), and Wing Lee Farms (51.1 lb/day)
SIU concentrations	RP-1 SIU average concentration is 93 mg/L (Jewlland-Freya), other RP-1 SIUs were not analyzed for chloride CCWRF SIU average concentrations ranged from 0.057 mg/L (Scott Brothers Dairy) to 0.68 mg/L (Envision Plastics); This suggests that this is a source water issue rather than an industrial source

***Recommendation**: Continue monitoring at plant influent/effluent and applicable SIUs without setting local limit. Elevated background concentration, in relation to SIU's contribution, suggests control through local limits will not be effective. Chloride appears to be a source water issue.*

Table 28. Overview of Local Limits Evaluation for Hardness

Local Limits	Evaluation
POC Trigger	Identified during screening process for cyanide (free) and cyanide (total) and evaluated for local limits based on meeting influent/MAHL sensitivity thresholds
2004 Local Limit	No 2004 Local Limit
Avg background concentration	179 mg/L
2014 calculated UCLs	UCLs not applicable for RP-1 or CCWRF (negative UCLs due to large background loading relative to AILs)
2014 calculated CFLs	CFLs not applicable for RP-1 or CCWRF (negative CFLs due to large background loading relative to AILs)
Avg Influent Loading /MAHL	291% (RP-1) and 328% (CCWRF) Both above the 60% sensitivity threshold
Max Influent Loading /MAHL	322% (RP-1) and 452% (CCWRF) Both above the 80% sensitivity threshold
SIU loading contribution	SIU data from 2013 to 2014 not available for hardness; average influent loadings are 40,082 lb/day (RP-1), 14,657 lb/day (RP-4), 13,477 lb/day (RP-5), and 11,914 lb/day (CCWRF); this suggests that this is a source water issue rather than an industrial source
SIU concentrations	SIU data from 2013 to 2014 not available for hardness; average influent concentrations are 178 mg/L (RP-1), 174 mg/L (RP-4), 202 mg/L (RP-5), and 198 mg/L (CCWRF); this suggests that this is a source water issue rather than an industrial source

***Recommendation**: Continue monitoring at plant influent/effluent and applicable SIUs without setting local limit. Elevated background concentration, in relation to SIU's contribution, suggests control through local limits will not be effective. Hardness appears to be a source water issue.*

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Table 29. Overview of Local Limits Evaluation for Manganese

Local Limits	Evaluation
POC Trigger	Identified during screening process and evaluated for local limits based on meeting influent/MAHL sensitivity thresholds
2004 Local Limit	No 2004 Limit
Avg background concentration	0.02 mg/L
2014 calculated UCLs	9.04 mg/L (RP-1) and 8.77mg/L (CCWRF)
2014 calculated CFLs	Not calculated
Avg Influent Loading /MAHL	15% (RP-1) and 5.1% (CCWRF) Both below the 60% sensitivity threshold
Max Influent Loading /MAHL	19% (RP-1) and 6.1% (CCWRF) Both below the 80% sensitivity threshold
SIU loading contribution	SIU loading = 0.40% of RP-1 influent loading and 27.2% of CCWRF influent loading RP-1 SIU loading is from Discus Dental (0.000042 lb/day), Evolution Fresh (0.0088 lb/day), Inland Pwder (0.00052 lb/day), Jewlland-Freya (0.0011 lb/day), PAC Rancho (0.0022 lb/day), Parallel Products (0.013 lb/day), Parco (0.00057 lb/day), Sun Badge (0.00018 lb/day), and Western Metals (0.00021 lb/day) CCWRF SIU loading is from American Beef Packers (0.383 lb/day), Envision Plastic (0.13 lb/day), Jewlland-Freya (0.0011 lb/day), and Wing Lee Farms (0.028 lb/day)
SIU concentrations	RP-1 SIU concentration is 0.0004 mg/L (Net Shapes) CCWRF SIU concentration is 0.90 mg/L (Wing Lee Farms) and 0.22 mg/L (Envision Plastic)

Recommendation: *Continue to monitor at plant influent/effluent and applicable SIUs without implementing local limit. Influent loading is low compared to MAHL and controlling industrial contributions will not make significant impact.*

Table 30. Overview of Local Limits Evaluation for Sodium

Local Limits	Evaluation
POC Trigger	Identified during screening process and evaluated for local limits based on meeting influent loading/MAHL sensitivity threshold
2004 Local Limit	No 2004 Local Limit
Avg background concentration	91 mg/L
2014 calculated UCLs	739 mg/L (RP-1) and 279 mg/L (CCWRF)
2014 calculated CFLs	Not calculated
Avg Influent Loading /MAHL	79% (RP-1) and 88% (CCWRF) Both above the 60% sensitivity threshold
Max Influent Loading /MAHL	87% (RP-1) and 99% (CCWRF) Both above the 80% sensitivity threshold
SIU loading contribution	SIU loading = 0.005% of RP-1 influent loading and 9.86% of CCWRF influent loading RP-1 SIU loading is from Jewlland-Freya (0.965 lb/day); other RP-1 SIUs were not analyzed for sodium CCWRF SIU loading is from American Beef Packers (440 lb/day), Envision Plastic (38.0 lb/day), Jewlland-Freya (0.965 lb/day), Scott Brother Dairy (86.0 lb/day) and Wing Lee Farms (31.0 lb/day)
SIU concentrations	RP-1 SIU average concentration is 89 mg/L (Sun Badge) CCWRF SIU average concentrations ranged from 66 mg/L (Envision Plastics) to 198 mg/L (Scott Brothers Dairy)

***Recommendation**. Continue monitoring at plant influent/effluent and SIUs (assess if additional SIUs discharging to RP-1 should include sodium analysis). Sensitivity threshold was triggered due to high background concentrations. Average SIU concentrations ranged from 66 mg/L to 198 mg/L, well below the calculated UCLs.*

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Table 31. Overview of Local Limits Evaluation for Sulfate

Local Limits	Evaluation
POC Trigger	Identified during screening process and evaluated for local limits based on meeting influent/MAHL sensitivity thresholds
2004 Local Limit	No 2004 Local Limit
Avg background concentration	50 mg/L
2014 calculated UCLs	4,927 mg/L (RP-1) and 1,451 mg/L (CCWRF)
2014 calculated CFLs	Not calculated
Avg Influent Loading /MAHL	39% (RP-1) and 39% (CCWRF) Both below the 60% sensitivity threshold
Max Influent Loading /MAHL	204% (RP-1) and 118% (CCWRF) Both above the 80% sensitivity threshold
SIU loading contribution	SIU loading = 0.007% of RP-1 influent loading and 6.05% of CCWRF influent loading RP-1 SIU loading is from Amphastar (0.103 lb/day) and Jewlland-Freya (0.824 lb/day); other RP-1 SIUs were not analyzed for sulfate CCWRF SIU loading is from American Beef Packers (143 lb/day), Envision Plastic (24.2 lb/day), Jewlland-Freya (0.824 lb/day), Scott Brother Dairy (35.2 lb/day), and Wing Lee Farms (18.8 lb/day)
SIU concentrations	RP-1 SIU average concentrations ranged from 6.0 mg/L (Amphastar) to 76 mg/L (Jewlland-Freya) CCWRF SIU average concentrations ranged from 42 mg/L (Envision Plastics) to 81 mg/L (Scott Brothers Dairy)

***Recommendation**: Continue monitoring at plant influent/effluent and applicable SIUs. Maximum influent loading/MAHL exceeded 80% threshold due to anomalous data points, without outliers the maximum influent loading/MAHL is 40% for RP-1 and 47% for CCWRF.*

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Table 32. Overview of Local Limits Evaluation for TDS

Local Limits	Evaluation
POC Trigger	Identified during screening process and evaluated for local limits based on meeting influent/MAHL sensitivity thresholds
2004 Local Limit	800 mg/L for existing SIUs and 500 mg/L for new SIUs
Avg background concentration	503 mg/L
2014 calculated UCLs	1,158 mg/L (RP-1) and 1,034 mg/L (CCWRF)
2014 calculated CFLs	1,746 mg/L (RP-1) and 1,034 mg/L (CCWRF) All CCWRF SIUs were considered to be contributing SIUs
Avg Influent Loading /MAHL	82% (RP-1) and 91% (CCWRF) Both above the 60% sensitivity threshold
Max Influent Loading /MAHL	89% (RP-1) and 102% (CCWRF) Both above the 80% sensitivity threshold
SIU loading contribution	SIU loading = 3.9% of RP-1 influent loading and 14.2% of CCWRF influent loading RP-1 SIU loading ranges from Amphastar (0.679 lb/day) to Cliffstar (1,401 lb/day) CCWRF SIU loading ranged from Wing Lee Farms (285 lb/day) to American Beef Packers (3,056 lb/day)
SIU concentrations	RP-1 SIU average concentrations ranged from 40 mg/L (Amphastar) to 2,860 mg/L (Cliffstar) CCWRF SIU average concentrations ranged from 618 mg/L (Jewlland-Freya) to 1,819 mg/L (Scott Brothers Dairy)

***Recommendation**: As a result of rapidly changing increases in TDS observed in source water and the treatment plant influent, there is no assimilative capacity to allocate to the SIUs. Therefore, no recommendation can be made at this time for a TDS local limit. IEUA should determine how to best address this issue with their SIUs.*

Table 33 presents the recommended local limits compared with the 2004 limits.

Table 33. Recommended Local Limits

POCs	2004 Limits (mg/L)	2014 Limits (mg/L)	Comments
Cadmium	2.8	--	Background, RP-1 influent, and CCWRF influent all non-detect; monitor via IEUA monitoring program
Chromium	60	2.79	Daily max; Based on CCWRF UCL
Copper	45	2.29	Daily max; Based on CCWRF UCL
Cyanide (free)	1.2	--	Monitor via IEUA monitoring program
Lead	14	1.38	Daily max; Based on CCWRF CFL (applied to contributory SIUs, Net Shapes and Envision Plastics); set alert level of 0.02 mg/L for other SIUs
Nickel	45	12.5	Daily max; Based on CCWRF CFL (applied to contributory SIUs, Evolution Fresh, Inland Powder, Jewlland-Freya, Net Shapes, OW Lee, Parco, Schlosser Forge, Sun Badge, and Envision Plastics); set alert level of 0.19 mg/L for other SIUs
Selenium	--	--	Monitor via IEUA monitoring program; work with Sun Badge to assess BMPs
Zinc	50	3.74	Daily max; Based on CCWRF UCL
Bis(2-Ethylhexyl)phthalate	--	--	Monitor via IEUA monitoring program
Chloride	--	--	Monitor via IEUA monitoring program
Hardness	--	--	Monitor via IEUA monitoring program
Manganese	--	--	Monitor via IEUA monitoring program
Sodium	--	--	Monitor via IEUA monitoring program
Sulfate	--	--	Monitor via IEUA monitoring program
TDS	800/550*	IEUA to determine	As a result of rapidly changing increases in TDS observed in source water and the treatment plant influent, there is no assimilative capacity to allocate to the SIUs. Therefore, no recommendation can be made at this time for a TDS local limit. IEUA will determine how to best address issue with their SIUs.

Notes: mg/L = milligrams per liter; * = TDS limits for existing SIUs and new SIUs

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13. References

CH2M Hill, 2014a IEUA Wastewater Facilities Master Plan, Technical Memorandum #4 Wastewater Flow and Loading Forecast, August 21, 2014

CH2M Hill, 2014b IEUA Wastewater Facilities Master Plan, Technical Memorandum #5 RP-1 Future Plans, October 31, 2014

CH2M Hill, 2014c IEUA Wastewater Facilities Master Plan, Technical Memorandum #6 RP-4 Future Plans, October 29, 2014

CH2M Hill, 2014d IEUA Wastewater Facilities Master Plan, Technical Memorandum #7 RP-5 and RP-2 Complex Future Plans

CH2M Hill, 2014e IEUA Wastewater Facilities Master Plan, Technical Memorandum #8 CCWRF Future Plans

USEPA, 1987. *Guidance Manual on the Development and Implementation of Local Discharge Limitations*. EPA 833-B-87-202, November 1987.

USEPA, 2004. *Local Limits Development Guidance*, EPA 833-R-04-002A, July 2004.

Santa Ana RWQCB Order No. R8-2007-0039, Water Recycling Requirements for Inland Empire Utilities Agency and Chino Basin Watermaster, Chino Basin Recycled Water Groundwater Recharge Program: Phase I and Phase II Projects, San Bernardino County

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Appendix A

Local Limits Study Sampling Plan
Historical and 2014 Additional
Sampling Summary

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Infrastructure · Water · Environment · Buildings

Imagine the result

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Local Limits Study

Sampling Plan

September 2014

Tables

Figures

Acronyms and Abbreviations

ASTM	American Society for Testing & Materials
BOD_5	five-day biochemical oxygen demand
CCWRF	Carbon Canyon Water Reclamation Facility
Gen Chem	general chemistry parameters
IEUA	Inland Empire Utilities Agency
L	liter
ml	milliliter
NPDES	National Pollution Discharge Elimination System
Pests/PCBs	pesticides and polychlorinated biphenyls
POCs	Pollutants of Concern
RP	Regional Water Recycling Plant
SIUs	Significant Industrial Users
SM	Standard Methods for the Examination of Water & Wastewater
SVOCs	semivolatile organic compounds
TDS	total dissolved solids
TOC	total organic carbon
TSS	total suspended solids
USEPA	U.S. Environmental Protection Agency
VOCs	volatile organic compounds

1. Introduction

This Sampling Plan describes sampling activities for collecting site-specific samples in support of the Inland Empire Utilities Agency (IEUA) Local Limits Study. Samples will be collected at Regional Water Recycling Plant 1 (RP-1), RP-4, RP-5, and Carbon Canyon Water Reclamation Facility (CCWRF), and select Significant Industrial Users (SIUs). Data obtained during this sampling event will be used, in combination with historical data, to:

- Characterize pollutant loadings from background (i.e., domestic and commercial) sources to the IEUA treatment plants
- Identify pollutants of concern (POCs) that may pose risks of pass-through or interference to the treatment plants or to worker health and safety
- Calculate plant-specific pollutant removal efficiencies
- Update the local limits presented in the 2004 Point of Connection Standards and Local Limits Study

2. Historical Data Set

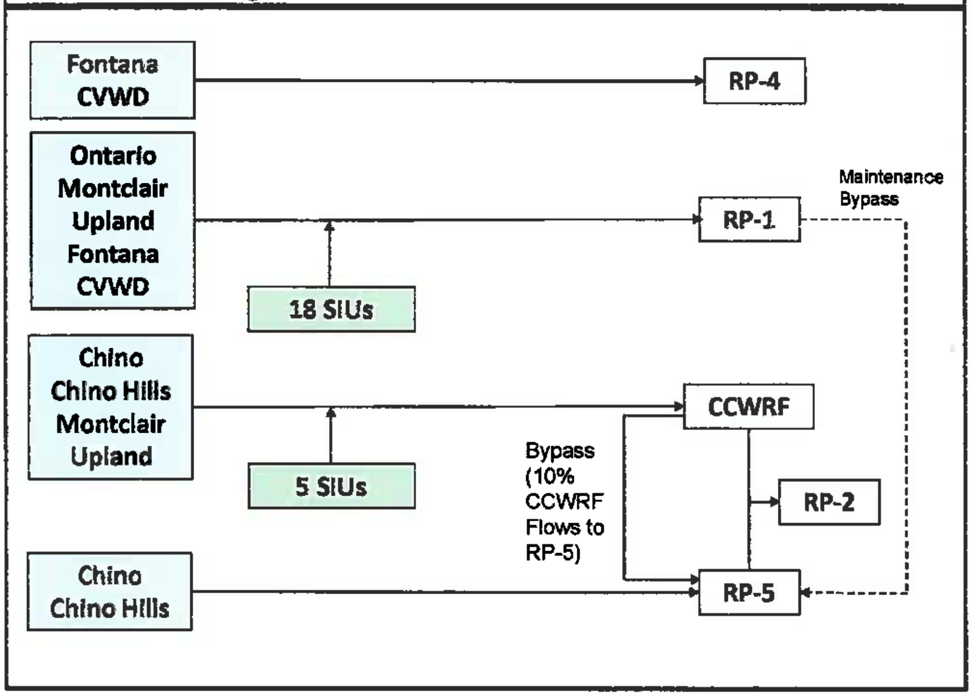
IEUA performs wastewater sampling at the treatment plants in compliance with discharge permits (NPDES No. CA8000409 and Groundwater Recycling Permit R8-2007-0039), as well as part of their routine operational procedures. For the Local Limits Study, analytical data for metals, general chemistry parameters, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), dioxins, pesticides and polychlorinated biphenyls (PCBs) from the treatment plants for the last five years (2009 through 2014) were compiled and reviewed. A summary of the data set is presented in Table 1. The treatment plants also measure daily flows at the influent and effluent locations and these data were compiled and reviewed as well.

For the SIUs, sampling frequency and specific analytical parameters sampled are based on their industrial discharger permits; therefore, historical SIU analytical data vary depending on the individual SIU's discharge permit requirements. The total data set includes samples from 22 SIUs collected during 2009 to 2014. The majority of the SIUs reported flow data as either direct measurements or estimates.

3. Sampling Locations

The historical data represents a robust data set for influent and effluent samples at the treatment plants; however, the local limits calculations will also require an assessment of background (i.e., domestic and commercial sources) loading. The locations selected for the local limits sampling were chosen to confirm removal efficiencies, provide information on background concentrations and allow for internal mass balance assessments at the treatment plants. Figure 1 presents a schematic of wastewater flows to the IEUA treatment plants.

Figure 1 – Wastewater Flow Schematic



The following locations will be sampled during the local limits sampling event:

- RP-1 influent/effluent/primary sludge
- RP-4 influent/effluent/primary sludge
- RP-5 influent/effluent/primary sludge
- CCWRF influent/effluent/primary sludge
- SIU effluent from American Beef Packers, Scott Brothers Dairy, Envision Plastics, Wing Lee Farms, and Jewlland-Freya Health Sciences

Influent data from RP-4 and RP-5 will also be used to estimate background loadings. Currently, there are no SIUs discharging directly to these two treatment plants. RP-5 can receive 10 percent of the flows going to CCWRF and there is an emergency bypass from RP-1 to RP-5. During the local limits sampling, bypasses to RP-5 will be curtailed and the influent to RP-4 and RP-5 will be representative of background concentrations. The five SIUs discharging to CCRWF will be sampled, allowing mass balance calculations to be performed around the CCRWF headworks.

4. Analytical Parameters

The analytical parameters selected for the local limits sampling event were identified as potential pollutants of concern (POCs) based on a preliminary screening of historical influent/effluent concentrations compared to effluent, inhibition, biosolids, and health and safety criteria. This list was also compared to the USEPA's National POCs, which include arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, zinc, cyanide, five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and ammonia. Table 2 presents the parameters to be analyzed at the different sampling locations.

The metals analytes include aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, silver, sodium, thallium, and zinc. General chemistry parameters include BOD_5, total organic carbon (TOC), cyanide, cyanide (free), ammonia, chloride, sulfate, nitrate, nitrite, total dissolved solids (TDS), TDS (fixed), and TSS. Samples will be analyzed by IEUA's in-house laboratory, or an appropriate subcontracted laboratory, in order to be consistent with the historical data set.

2,3,7,8-TCDD is the only dioxin isomer that has an associated effluent criteria. The entire suite of dioxin isomers will be analyzed by USEPA Method 1613B in order to provide characterization information. Based on historical analytical data, dioxins will be analyzed at the influent and effluent for RP-5 and CCWRF.

5. Sampling Procedures

In order to be consistent with and comparable to historical data, sampling will be conducted by IEUA staff according to standard procedures for effluent compliance sampling, as specified in IEUA's NPDES permit (CA8000409). Flow-weighted, 24-hour composite samples will be collected for all parameters, with the exception of cyanide, cyanide (free), and volatile organic compounds (VOCs), which will be collected as grab samples. For SVOCs, the influent sample will be collected as a 24-hour composite and the effluent sample will be collected as a grab sample. Sludge samples will also be collected as grab samples.

Samples will be collected in cleaned, certified containers provided by the laboratory. The required sample containers and preservation requirements are summarized in Table 2. Sample handling and custody procedures will follow IEUA's standard protocols.

6. Sampling Frequency and Schedule

The local limits sampling is scheduled to occur during September 2014. Sampling will take place over a two-week period, consisting of both weekday and weekend sampling. Sample frequencies were based on the USEPA Local Limits Development Guidance (USEPA 2004) and the existing data set. Sampling frequency and schedule is summarized in Table 3.

References

HDR/CGvL, 2004. Inland Empire Utilities Agency, Point of Connection Standards & Local Limits Study, September 2004.

USEPA, 2004. Local Limits Development Guidance, EPA 833-R-04-002A, July 2004.

ARCADIS

Tables

Table 1 Historical Treatment Plant Data Set Summary				
Sample Location		**Date Range**	**# of Samples**	**Parameters**
RP-1	Influent	01/2009 to 04/2014	Up to 1131	Metals, Gen Chem, VOCs, SVOCs, Pests/PCBs
	Effluent	01/2009 to 04/2014	Up to 1954	Metals, Gen Chem, VOCs, SVOCs, Pests/PCBs
RP-4	Influent	01/2009 to 04/2014	Up to 911	Metals, Gen Chem, VOCs, SVOCs, Pests/PCBs
	Effluent	01/2009 to 04/2014	Up to 1959	Metals, Gen Chem, VOCs, SVOCs, Pests/PCBs
RP-5	Influent	01/2009 to 04/2014	Up to 701	Metals, Gen Chem, VOCs, SVOCs, Pests/PCBs
	Effluent	01/2009 to 04/2014	Up to 1655	Metals, Gen Chem, VOCs, SVOCs, Pests/PCBs
CCWRF	Influent	01/2009 to 03/2014	Up to 633	Metals, Gen Chem, VOCs, SVOCs, Pests/PCBs
	Effluent	01/2009 to 04/2014	Up to 1870	Metals, Gen Chem, VOCs, SVOCs, Pests/PCBs

Notes:
Gen Chem = general chemistry parameters, VOCs = volatile organic compounds, SVOCs = semivolatile organic compounds; Pests/PCBs = pesticides and polychlorinated biphenyls

Table 2
Analytical Methods and Sample Location

Parameter	Analytical Method	Sample Containers	Sample Type	Sample Locations
Metals	USEPA 200.8/200.7/254.2	500 ml poly w/ HNO_3	24-hr comp	Influent, Effluent, Sludge*, SIUs
General Chemistry Parameters				
BOD_5	SM 5210	1 L poly	24-hr comp	SIUs
TOC	SM 5310 B/ SM5310 C	250 ml amber w/ HPO_4	24-hr comp	Influent, Effluent
Cyanide	STM D7284	500 ml poly	grab	Influent, Effluent, SIUs
Cyanide (free)	ASTM D7237			
Ammonia	USEPA 350.1	500 ml poly w/ H_2SO_4	24-hr comp	Influent, Effluent, SIUs
Chloride, sulfate, nitrate, & nitrite	USEPA 300.0	½ gallon poly	24-hr comp	Influent, Effluent, SIUs
TDS	SM 2540 C		24-hr comp	Influent, Effluent, SIUs
TDS (fixed)	SM 2540 E			
TSS	SM 2540- D			
VOCs	USEPA 624	3 x 40 ml vial w/ HCl	grab	Influent, Effluent
SVOCs	USEPA 625	2 x L amber	24-hr comp/grab**	Influent, Effluent
Dioxins	USEPA 1613B	2 x L amber	24-hr comp	Influent, Effluent
Percent Solids	ASTM D3926	500 ml poly w/ HNO_3	grab	Sludge*

Notes:
HNO_3 = nitric acid; HPO4 = hydrogen phosphate; H_2SO_4 = sulfuric acid; HCl = hydrochloric acid;

ml = milliliter; L = liter, BOD_5 = biochemical oxygen demand; TOC = total organic carbon;

TDS = total dissolved solids; TSS = total suspended solids; VOCs = volatile organic compounds;

SVOCs = semivolatile organic compounds

24-hr comp = 24-hour flow-weighted composite sample;

grab = single grab sample

* Sludge samples will be collected as a grab sample

* For SVOCs, the influent sample will be collected as a 24-hour flow-weighted composite and the effluent will be collected as a grab sample

Table 3
Sampling Schedule

Sample Location	Parameters	Week 1					Week 2			
		Mon/ Tues	Tues/ Wed	Wed/ Thurs	Thurs/ Fri	Fri/ Sat	Sun/ Mon	Mon/ Tues	Tues/ Wed	Wed/ Thurs
Treatment Plants										
CCWRF										
Influent	Metals	x	x	x	x	x	x	x	x	x
	Gen Chem	x	x	x	x	x	x	x	x	x
	VOCs/SVOCs	x	x		x					
	Dioxins	x	x		x					
Effluent	Metals	x	x	x	x	x	x	x	x	x
	Gen Chem	x	x	x	x	x	x	x	x	x
	VOCs/SVOCs	x	x		x					
	Dioxins	x	x		x					
Sludge	Metals	x	x	x						
RP-1										
Influent	Metals	x	x	x	x	x	x	x	x	x
	Gen Chem	x	x	x	x	x	x	x	x	x
	VOCs/SVOCs	x	x		x					
Effluent	Metals	x	x	x	x	x	x	x	x	x
	Gen Chem	x	x	x	x	x	x	x	x	x
	VOCs/SVOCs	x	x		x					
Sludge	Metals	x	x	x						
RP-4										
Influent	Metals	x	x	x	x	x	x	x	x	x
	Gen Chem	x	x	x	x	x	x	x	x	x
	VOCs/SVOCs	x	x		x					
Effluent	Metals	x	x	x	x	x	x	x	x	x
	Gen Chem	x	x	x	x	x	x	x	x	x
	VOCs/SVOCs	x	x		x					
Sludge	Metals	x	x	x						

Table 3
Sampling Schedule (cont.)

Sample Location	Parameters	Week 1					Week 2			
		Mon/ Tues	Tues/ Wed	Wed/ Thurs	Thurs/ Fri	Fri/ Sat	Sun/ Mon	Mon/ Tues	Tues/ Wed	Wed/ Thurs
RP-5										
Influent	Metals	x	x	x	x	x	x	x	x	x
	Gen Chem	x	x	x	x	x	x	x	x	x
	VOCs/SVOCs	x	x		x					
	Dioxins	x	x		x					
Effluent	Metals	x	x	x	x	x	x	x	x	x
	Gen Chem	x	x	x	x	x	x	x	x	x
	VOCs/SVOCs	x	x		x					
	Dioxins	x	x		x					
Sludge	Metals	x	x	x						
SIUs										
American Beef Packers	Metals	x	x	x						
	Gen Chem	x	x	x						
Scott Brothers Dairy	Metals	x	x	x						
	Gen Chem	x	x	x						
Envision Plastics	Metals	x	x	x						
	Gen Chem	x	x	x						
Wing Lee Farms	Metals	x	x	x						
	Gen Chem	x	x	x						
Jewlland-Freya Health Sciences	Metals	x	x	x						
	Gen Chem	x	x	x						

Notes:
Gen Chem = BOD_5, TOC, cyanide, cyanide (free), ammonia, chloride, sulfate, nitrate, nitrite, TDS, TDS (fixed), TSS;
Sampling days = Start and end of 24-hour composite sample

Table A-1
RP-1 Historical Results Summary Statistics
Local Limits Report

Parameters	RP-1 Influent # of Results	# of NDs	Avg	Max	RP-1 Effluent # of Results	# of NDs	Avg	Max
Metals (mg/L)								
Silver	26	25	0.0052	0.0100	69	68	0.0001	0.0005
Aluminum	--	--	--	--	69	16	0.031	0.106
Arsenic	26	26	ND	ND	76	76	0.001	0.001
Boron	64	0	0.25	0.7	121	0	0.22	0.7
Barium	26	0	0.09	0.16	69	0	0.01	0.016
Beryllium	26	26	ND	ND	69	69	ND	ND
Calcium	64	0	51.9	70	121	0	43.4	50
Cadmium	26	26	ND	ND	69	69	ND	ND
Cobalt	26	26	ND	ND	69	69	ND	ND
Chromium	26	25	0.01	0.01	69	1	0.00	0.0022
Copper	26	0	0.08	0.15	69	0	0.00	0.0048
Iron	1	0	2.12	2.12	14	0	0.08	0.13
Mercury	27	26	0.0003	0.0007	67	67	ND	ND
Potassium	64	0	16.4	19	121	0	14.3	17
Magnesium	64	0	10.6	12.9	121	0	9.2	11.1
Manganese	1	0	0.03	0.03	69	0	0.0113	0.038
Molybdenum	--	--	--	--	69	0	0.0069	0.014
Sodium	64	0	82.1	100	121	0	95.3	117
Nickel	26	26	ND	ND	69	0	0.003	0.011
Lead	26	26	ND	ND	69	69	ND	ND
Antimony	26	26	ND	ND	69	69	ND	ND
Selenium	26	26	ND	ND	69	69	ND	ND
Silicon	64	0	13.5	16.3	121	0	12.1	14.6
Thallium	26	26	ND	ND	69	69	ND	ND
Zinc	26	0	0.23	0.46	69	0	0.026	0.037
General Chemistry (mg/L)								
Alkalinity	65	0	290	318	120	0	144	170
BOD_5	58	0	476	1740	58	39	1.6	4.0
Chloride	66	0	79	112	120	0	107	146
CN, Aquatic Free (ug/L)	61	49	1.41	6	67	61	1.19	5
Fluoride	64	0	0.322	1.7	65	2	0.20	0.3
Hardness	64	0	173	222	98	0	145	165
Ammonia as N	915	0	32	55	1174	1159	0.1	0.6
Nitrite as N	280	103	0.192	1.33	870	596	0.037	0.53
Nitrate as N	280	60	0.380	18.9	869	0	6.47	12.9
Oil & Grease	2	0	851	878	--	--	--	--
Orthophosphate	5	0	4.28	6.5	483	350	0.717	7.2
Sulfate	66	0	42.4	191	120	0	43.8	71
Total Dissolved Solids	278	0	461	1190	468	0	484	1220
Total Kjeldahl Nitrogen	254	0	57.0	118	278	26	1.07	3.1
Total Organic Carbon	644	0	217	512	1954	0	5.99	10.3
Total Coliform	--	--	--	--	1738	1455	1.21	13
Total Suspended Solids	1131	0	531	1850	1783	1775	0.516	6.0
Volatile Organics (ug/L)								
1,1,1-Trichloroethane	14	14	ND	ND	21	21	ND	ND
1,1,2,2-Tetrachloroethane	14	14	ND	ND	21	21	ND	ND
1,1,2-Trichloroethane	14	14	ND	ND	21	21	ND	ND
1,1-Dichloroethane	14	14	ND	ND	21	21	ND	ND
1,1-Dichloroethene	14	14	ND	ND	21	21	ND	ND
1,2-Dichlorobenzene	14	14	ND	ND	21	21	ND	ND
1,2-Dichloroethane	14	14	ND	ND	21	21	ND	ND
1,2-Dichloropropane	14	14	ND	ND	21	21	ND	ND
1,3-Dichlorobenzene	14	14	ND	ND	21	21	ND	ND
1,4-Dichlorobenzene	14	14	ND	ND	21	21	ND	ND
2-Chloroethyl vinyl ether	14	14	ND	ND	21	21	ND	ND
Acrolein	5	5	ND	ND	5	5	ND	ND
Acrylonitrile	5	5	ND	ND	5	5	ND	ND
Benzene	14	14	ND	ND	21	21	ND	ND
Bromodichloromethane	14	14	ND	ND	28	0	20	35
Bromoform	14	14	ND	ND	28	28	ND	ND
Bromomethane	14	14	ND	ND	21	21	ND	ND
Carbon tetrachloride	14	14	ND	ND	21	21	ND	ND
Chlorobenzene	14	14	ND	ND	21	21	ND	ND
Chloroethane	14	14	ND	ND	21	21	ND	ND
Chloroform	14	12	3.54	12	28	0	75	128
Chloromethane	14	14	ND	ND	21	21	0.5	0.5

Table A-1
RP-1 Historical Results Summary Statistics
Local Limits Report

	RP-1 Influent				RP-1 Effluent			
Parameters	**# of Results**	**# of NDs**	**Avg**	**Max**	**# of Results**	**# of NDs**	**Avg**	**Max**
cis-1,3-Dichloropropene	14	14	ND	ND	21	21	0.5	0.5
Dibromochloromethane	14	14	ND	ND	28	1	3.9	9.0
Ethylbenzene	14	14	ND	ND	21	21	ND	ND
Methylene chloride	14	13	3.93	20	21	21	ND	ND
tert-Butyl alcohol (TBA)	--	--	--	--	1	1	ND	ND
Tetrachloroethene	14	14	ND	ND	21	21	ND	ND
Toluene	14	12	ND	ND	21	21	ND	ND
Total THM	--	--	--	--	7	0	119	153
trans-1,2-Dichloroethene	14	14	ND	ND	21	21	ND	ND
trans-1,3-Dichloropropene	14	14	ND	ND	21	21	ND	ND
Trichloroethene	14	14	ND	ND	21	21	ND	ND
Trichlorofluoromethane	14	14	ND	ND	21	21	ND	ND
Vinyl chloride	14	14	ND	ND	21	21	ND	ND
Semivolatile Organics (ug/L)								
1,2,4-Trichlorobenzene	15	15	ND	ND	34	34	ND	ND
1,2-Dichlorobenzene	15	15	ND	ND	34	34	ND	ND
1,3-Dichlorobenzene	15	15	ND	ND	34	34	ND	ND
1,4-Dichlorobenzene	15	15	ND	ND	34	34	ND	ND
2,4,6-Trichlorophenol	15	15	ND	ND	34	34	ND	ND
2,4-Dichlorophenol	15	15	ND	ND	34	34	ND	ND
2,4-Dimethylphenol	15	15	ND	ND	34	34	ND	ND
2,4-Dinitrophenol	15	15	ND	ND	34	34	ND	ND
2,4-Dinitrotoluene	15	15	ND	ND	34	34	ND	ND
2,6-Dinitrotoluene	15	15	ND	ND	34	34	ND	ND
2-Chloronaphthalene	15	15	ND	ND	34	34	ND	ND
2-Chlorophenol	15	15	ND	ND	34	34	ND	ND
2-Methyl-4,6-dinitrophenol	15	15	ND	ND	34	34	ND	ND
2-Nitrophenol	15	15	ND	ND	34	34	ND	ND
3,3-Dichlorobenzidine	15	15	ND	ND	34	34	ND	ND
4-Bromophenyl phenyl ether	15	15	ND	ND	34	34	ND	ND
4-Chloro-3-methylphenol	15	15	ND	ND	34	34	ND	ND
4-Chlorophenyl phenyl ether	15	15	ND	ND	34	34	ND	ND
4-Nitrophenol	15	15	ND	ND	34	34	ND	ND
Acenaphthene	15	15	ND	ND	34	34	ND	ND
Acenaphthylene	15	15	ND	ND	34	34	ND	ND
Anthracene	15	15	ND	ND	34	34	ND	ND
Azobenzene	15	15	ND	ND	34	34	ND	ND
Benzidine	15	15	ND	ND	34	34	ND	ND
Benzo(a)anthracene	15	15	ND	ND	34	34	ND	ND
Benzo(a)pyrene	15	15	ND	ND	34	34	ND	ND
Benzo(b)fluoranthene	15	15	ND	ND	34	34	ND	ND
Benzo(g,h,i)perylene	15	15	ND	ND	34	34	ND	ND
Benzo(k)fluoranthene	15	15	ND	ND	34	34	ND	ND
Bis(2-chloroethoxy)methane	15	15	ND	ND	34	34	ND	ND
Bis(2-chloroethyl)ether	15	15	ND	ND	34	34	ND	ND
Bis(2-chloroisopropyl)ether	15	15	ND	ND	34	34	ND	ND
Bis(2-ethylhexyl)phthalate	22	8	10.9	26	64	64	ND	ND
Butyl benzyl phthalate	19	19	2.50	2.5	34	34	ND	ND
Chrysene	15	15	ND	ND	34	34	ND	ND
Dibenzo(a,h)anthracene	15	15	ND	ND	34	34	ND	ND
Diethyl phthalate	22	20	7.59	34	34	31	1.53	10
Dimethyl phthalate	15	15	ND	ND	34	34	ND	ND
Di-n-butyl phthalate	15	15	ND	ND	34	34	ND	ND
Di-n-octyl phthalate	15	15	ND	ND	34	34	ND	ND
Fluoranthene	15	15	ND	ND	34	34	ND	ND
Fluorene	15	15	ND	ND	34	34	ND	ND
Hexachlorobenzene	15	15	ND	ND	34	34	ND	ND
Hexachlorobutadiene	15	15	ND	ND	34	34	ND	ND
Hexachlorocyclopentadiene	15	15	ND	ND	34	34	ND	ND
Hexachloroethane	15	15	ND	ND	34	34	ND	ND
Indeno(1,2,3-cd)pyrene	15	15	ND	ND	34	34	ND	ND
Isophorone	15	15	ND	ND	34	34	ND	ND
Naphthalene	15	15	ND	ND	34	34	ND	ND
Nitrobenzene	15	15	ND	ND	34	34	ND	ND
N-Nitrosodimethylamine	15	15	ND	ND	34	34	ND	ND
N-Nitroso-di-n-propylamine	15	15	ND	ND	34	34	ND	ND
N-Nitrosodiphenylamine	15	15	ND	ND	34	34	ND	ND

Table A-1
RP-1 Historical Results Summary Statistics
Local Limits Report

	RP-1 Influent				RP-1 Effluent			
Parameters	**# of Results**	**# of NDs**	**Avg**	**Max**	**# of Results**	**# of NDs**	**Avg**	**Max**
Pentachlorophenol	15	15	ND	ND	34	34	ND	ND
Phenanthrene	15	15	ND	ND	34	34	ND	ND
Phenol	15	15	ND	ND	34	34	ND	ND
Pyrene	15	15	ND	ND	34	34	ND	ND
TCDD Scan	5	5	ND	ND	1	1	ND	ND
Pesticides/PCBs (ug/L)								
4,4-DDD	6	6	ND	ND	6	6	ND	ND
4,4-DDE	6	6	ND	ND	6	6	ND	ND
4,4-DDT	6	6	ND	ND	6	6	ND	ND
Aldrin	6	6	ND	ND	6	6	ND	ND
Alpha-BHC	6	6	ND	ND	6	6	ND	ND
Beta-BHC	6	6	ND	ND	6	6	ND	ND
Chlordane	5	5	ND	ND	5	5	ND	ND
Delta-BHC	6	6	ND	ND	6	6	ND	ND
Dieldrin	6	6	ND	ND	6	6	ND	ND
Endosulfan I	6	6	ND	ND	6	6	ND	ND
Endosulfan II	6	6	ND	ND	6	6	ND	ND
Endosulfan Sulfate	6	6	ND	ND	6	6	ND	ND
Endrin	6	6	ND	ND	6	6	ND	ND
Endrin aldehyde	6	6	ND	ND	6	6	ND	ND
Gamma-BHC	6	6	ND	ND	6	6	ND	ND
Heptachlor	6	6	ND	ND	6	6	ND	ND
Heptachlor epoxide	6	6	ND	ND	6	6	ND	ND
PCB-1016	5	5	ND	ND	5	5	ND	ND
PCB-1221	5	5	ND	ND	5	5	ND	ND
PCB-1232	5	5	ND	ND	5	5	ND	ND
PCB-1242	5	5	ND	ND	5	5	ND	ND
PCB-1248	5	5	ND	ND	5	5	ND	ND
PCB-1254	5	5	ND	ND	5	5	ND	ND
PCB-1260	5	5	ND	ND	5	5	ND	ND
Toxaphene	5	5	ND	ND	5	5	ND	ND

Notes:
mg/L = milligrams per liter; ug/L = micrograms per liter; "--" = Not analyzed
Avg = average; Max = maximum; ND = Not detected above reporting limit; PCBs = Polychlorinated biphenyls
Averages were calculated for parameters having at least one detection; 1/2 the reporting limit was substituted for non-detects

Table A-2
RP-4 Historical Results Summary Statistics
Local Limits Report

	RP-4 Influent				RP-4 Effluent			
Parameters	**# of Results**	**# of NDs**	**Avg**	**Max**	**# of Results**	**# of NDs**	**Avg**	**Max**
Metals (mg/L)								
Silver	25	24	0.005	0.01	1	1	0.000125	0.000125
Aluminum	--	--	--	--	1	0	0.035	0.035
Arsenic	25	24	0.005	0.01	8	8	0.001	0.001
Boron	65	0	0.245	0.4	64	0	0.25	0.3
Barium	25	0	0.048	0.08	1	0	0.007	0.007
Beryllium	25	25	ND	ND	1	1	0.00025	0.00025
Calcium	65	0	49.7	110	64	0	42.0	47
Cadmium	25	25	ND	ND	1	1	0.000125	0.000125
Cobalt	25	25	ND	ND	1	1	0.0005	0.0005
Chromium	25	25	ND	ND	1	0	0.0008	0.0008
Copper	25	0	0.056	0.09	1	0	0.0025	0.0025
Iron	1	0	0.116	0.116	63	0	0.049	0.151
Mercury	26	26	ND	ND	1	1	0.000025	0.000025
Potassium	65	0	15.7	23	64	0	14.3	16
Magnesium	65	0	10.4	14.8	64	0	9.25	11.7
Manganese	--	--	--	--	1	0	0.015	0.015
Molybdenum	--	--	--	--	1	0	0.003	0.003
Sodium	65	0	86.1	175	64	0	91.6	113
Nickel	25	25	ND	ND	1	0	0.002	0.002
Lead	25	25	ND	ND	1	1	0.00025	0.00025
Antimony	25	25	ND	ND	1	1	0.0005	0.0005
Selenium	25	25	ND	ND	1	1	0.001	0.001
Silicon	65	0	12.0	17.2	65	0	11.0	13.9
Thallium	25	25	ND	ND	1	1	0.0005	0.0005
Zinc	25	0	0.159	0.2	1	0	0.022	0.022
General Chemistry (mg/L)								
Alkalinity	96	0	302	366	122	0	138	181
BOD_5	58	0	309	450	44	36	1.30	3
Chloride	67	0	89.7	228	65	0	105	133
CN, Aquatic Free (ug/L)	60	45	1.53	6	--	--	--	--
Fluoride	64	0	0.28	0.6	45	5	0.179	0.8
Hardness	63	0	167	334	13	0	148	157
Ammonia as N	911	0	40.0	59.7	1318	1298	0.056	2.3
Nitrite as N	283	147	0.06	0.51	1329	899	0.036	0.54
Nitrate as N	281	134	0.15	1.7	1324	0	3.88	10.5
Orthophosphate	438	2	8.11	16.6	943	76	2.86	10.1
Sulfate	67	0	40.5	59	65	0	45.8	59
Total Dissolved Solids	285	0	467	694	279	0	435	532
Total Kjeldahl Nitrogen	254	0	55.8	96.4	273	85	0.706	3.3
Total Organic Carbon	631	0	172	658	1959	0	3.97	5.9
Total Coliform	--	--	--	--	1941	1915	1.01	4.0
Total Suspended Solids	638	0	308	1740	1946	1923	1.03	7.0
Volatile Organics (ug/L)								
1,1,1-Trichloroethane	6	6	ND	ND	--	--	--	--
1,1,2,2-Tetrachloroethane	6	6	ND	ND	--	--	--	--
1,1,2-Trichloroethane	6	6	ND	ND	--	--	--	--
1,1-Dichloroethane	6	6	ND	ND	--	--	--	--
1,1-Dichloroethene	6	6	ND	ND	--	--	--	--
1,2-Dichlorobenzene	6	6	ND	ND	--	--	--	--
1,2-Dichloroethane	6	6	ND	ND	--	--	--	--
1,2-Dichloropropane	6	6	ND	ND	--	--	--	--
1,3-Dichlorobenzene	6	6	ND	ND	--	--	--	--
1,4-Dichlorobenzene	6	6	ND	ND	--	--	--	--
2-Chloroethyl vinyl ether	6	6	ND	ND	--	--	--	--
Acrolein	5	5	ND	ND	--	--	--	--
Acrylonitrile	5	5	ND	ND	--	--	--	--
Benzene	6	6	ND	ND	--	--	--	--
Bromodichloromethane	6	6	ND	ND	--	--	--	--
Bromoform	6	6	ND	ND	--	--	--	--
Bromomethane	6	6	ND	ND	--	--	--	--
Carbon tetrachloride	6	6	ND	ND	--	--	--	--
Chlorobenzene	6	6	ND	ND	--	--	--	--
Chloroethane	6	6	ND	ND	--	--	--	--
Chloroform	6	6	ND	ND	--	--	--	--
Chloromethane	6	6	ND	ND	--	--	--	--
cis-1,3-Dichloropropene	6	6	ND	ND	--	--	--	--

Table A-2
RP-4 Historical Results Summary Statistics
Local Limits Report

	RP-4 Influent				RP-4 Effluent			
Parameters	**# of Results**	**# of NDs**	**Avg**	**Max**	**# of Results**	**# of NDs**	**Avg**	**Max**
Dibromochloromethane	6	6	ND	ND	--	--	--	--
Ethylbenzene	6	6	ND	ND	--	--	--	--
Methylene chloride	6	6	ND	ND	--	--	--	--
tert-Butyl alcohol (TBA)	--	--	--	--	1	1	1	1
Tetrachloroethene	6	6	ND	ND	--	--	--	--
Toluene	6	6	ND	ND	--	--	--	--
trans-1,2-Dichloroethene	6	6	ND	ND	--	--	--	--
trans-1,3-Dichloropropene	6	6	ND	ND	--	--	--	--
Trichloroethene	6	6	ND	ND	--	--	--	--
Trichlorofluoromethane	6	6	ND	ND	--	--	--	--
Vinyl chloride	6	6	ND	ND	--	--	--	--
Semivolatile Organics (ug/L)								
1,2,4-Trichlorobenzene	15	15	ND	ND	--	--	--	--
1,2-Dichlorobenzene	15	15	ND	ND	--	--	--	--
1,3-Dichlorobenzene	15	15	ND	ND	--	--	--	--
1,4-Dichlorobenzene	15	15	ND	ND	--	--	--	--
2,4,6-Trichlorophenol	15	15	ND	ND	--	--	--	--
2,4-Dichlorophenol	15	15	ND	ND	--	--	--	--
2,4-Dimethylphenol	15	15	ND	ND	--	--	--	--
2,4-Dinitrophenol	15	15	ND	ND	--	--	--	--
2,4-Dinitrotoluene	15	15	ND	ND	--	--	--	--
2,6-Dinitrotoluene	15	15	ND	ND	--	--	--	--
2-Chloronaphthalene	15	15	ND	ND	--	--	--	--
2-Chlorophenol	15	15	ND	ND	--	--	--	--
2-Methyl-4,6-dinitrophenol	15	15	ND	ND	--	--	--	--
2-Nitrophenol	15	15	ND	ND	--	--	--	--
3,3-Dichlorobenzidine	15	15	ND	ND	--	--	--	--
4-Bromophenyl phenyl ether	15	15	ND	ND	--	--	--	--
4-Chloro-3-methylphenol	15	15	ND	ND	--	--	--	--
4-Chlorophenyl phenyl ether	15	15	ND	ND	--	--	--	--
4-Nitrophenol	15	15	ND	ND	--	--	--	--
Acenaphthene	15	15	ND	ND	--	--	--	--
Acenaphthylene	15	15	ND	ND	--	--	--	--
Anthracene	15	15	ND	ND	--	--	--	--
Azobenzene	15	15	ND	ND	--	--	--	--
Benzidine	15	15	ND	ND	--	--	--	--
Benzo(a)anthracene	15	15	ND	ND	--	--	--	--
Benzo(a)pyrene	15	15	ND	ND	--	--	--	--
Benzo(b)fluoranthene	15	15	ND	ND	--	--	--	--
Benzo(g,h,i)perylene	15	15	ND	ND	--	--	--	--
Benzo(k)fluoranthene	15	15	ND	ND	--	--	--	--
Bis(2-chloroethoxy)methane	15	15	ND	ND	--	--	--	--
Bis(2-chloroethyl)ether	15	15	ND	ND	--	--	--	--
Bis(2-chloroisopropyl)ether	15	15	ND	ND	--	--	--	--
Bis(2-ethylhexyl)phthalate	22	9	11.2	21	--	--	--	--
Butyl benzyl phthalate	19	18	2.8	8	--	--	--	--
Chrysene	15	15	ND	ND	--	--	--	--
Dibenzo(a,h)anthracene	15	15	ND	ND	--	--	--	--
Diethyl phthalate	22	17	6.4	13	--	--	--	--
Dimethyl phthalate	15	15	ND	ND	--	--	--	--
Di-n-butyl phthalate	15	15	ND	ND	--	--	--	--
Di-n-octyl phthalate	15	15	ND	ND	--	--	--	--
Fluoranthene	15	15	ND	ND	--	--	--	--
Fluorene	15	15	ND	ND	--	--	--	--
Hexachlorobenzene	15	15	ND	ND	--	--	--	--
Hexachlorobutadiene	15	15	ND	ND	--	--	--	--
Hexachlorocyclopentadiene	15	15	ND	ND	--	--	--	--
Hexachloroethane	15	15	ND	ND	--	--	--	--
Indeno(1,2,3-cd)pyrene	15	15	ND	ND	--	--	--	--
Isophorone	15	15	ND	ND	--	--	--	--
Naphthalene	15	15	ND	ND	--	--	--	--
Nitrobenzene	15	15	ND	ND	--	--	--	--
N-Nitrosodimethylamine	15	15	ND	ND	--	--	--	--
N-Nitroso-di-n-propylamine	15	15	ND	ND	--	--	--	--
N-Nitrosodiphenylamine	15	15	ND	ND	--	--	--	--
Pentachlorophenol	15	15	ND	ND	--	--	--	--
Phenanthrene	15	15	ND	ND	--	--	--	--

Table A-2
RP-4 Historical Results Summary Statistics
Local Limits Report

Parameters	RP-4 Influent				RP-4 Effluent			
	# of Results	# of NDs	Avg	Max	# of Results	# of NDs	Avg	Max
Phenol	15	15	ND	ND	--	--	--	--
Pyrene	15	15	ND	ND	--	--	--	--
TCDD Scan	5	5	ND	ND	--	--	--	--
Pesticides/PCBs (ug/L)								
4,4-DDD	6	6	ND	ND	--	--	--	--
4,4-DDE	6	6	ND	ND	--	--	--	--
4.4-DDT	6	6	ND	ND	--	--	--	--
Aldrin	6	6	ND	ND	--	--	--	--
Alpha-BHC	6	6	ND	ND	--	--	--	--
Beta-BHC	6	6	ND	ND	--	--	--	--
Chlordane	5	5	ND	ND	--	--	--	--
Delta-BHC	6	6	ND	ND	--	--	--	--
Dieldrin	6	6	ND	ND	--	--	--	--
Endosulfan I	6	6	ND	ND	--	--	--	--
Endosulfan II	6	6	ND	ND	--	--	--	--
Endosulfan Sulfate	6	6	ND	ND	--	--	--	--
Endrin	6	6	ND	ND	--	--	--	--
Endrin aldehyde	6	6	ND	ND	--	--	--	--
Gamma-BHC	6	6	ND	ND	--	--	--	--
Heptachlor	6	6	ND	ND	--	--	--	--
Heptachlor epoxide	6	6	ND	ND	--	--	--	--
PCB-1016	5	5	ND	ND	--	--	--	--
PCB-1221	5	5	ND	ND	--	--	--	--
PCB-1232	5	5	ND	ND	--	--	--	--
PCB-1242	5	5	ND	ND	--	--	--	--
PCB-1248	5	5	ND	ND	--	--	--	--
PCB-1254	5	5	ND	ND	--	--	--	--
PCB-1260	5	5	ND	ND	--	--	--	--
Toxaphene	5	5	ND	ND	--	--	--	--

Notes:
mg/L = milligrams per liter; ug/L = micrograms per liter; "--" = Not analyzed
Avg = average; Max = maximum; ND = Not detected above reporting limit; PCBs = Polychlorinated biphenyls
Averages were calculated for parameters having at least one detection; 1/2 the reporting limit was substituted for non-detects

Table A-3
RP-5 Historical Results Summary Statistics
Local Limits Report

	RP-5 Influent				RP-5 effluent			
Parameters	# of Results	# of NDs	Avg	Max	# of Results	# of NDs	Avg	Max
Metals (mg/L)								
Silver	27	27	ND	ND	62	62	0.000125	0.000125
Aluminum	--	--	--	--	62	53	0.017	0.095
Arsenic	27	27	ND	ND	62	62	0.001	0.001
Boron	65	0	0.263	0.4	105	1	0.267	0.3
Barium	27	0	0.067	0.1	62	0	0.020	0.053
Beryllium	26	26	ND	ND	62	62	0.00025	0.00025
Calcium	65	0	59.6	73	105	0	55.2	64
Cadmium	27	27	ND	ND	62	59	0.0001	0.0008
Cobalt	27	27	ND	ND	62	62	0.0005	0.0005
Chromium	27	27	ND	ND	62	1	0.0010	0.0043
Copper	27	0	0.059	0.09	62	0	0.0061	0.0096
Iron	1	0	0.790	0.79	8	0	0.062	0.103
Mercury	26	25	0.0003	0.0005	64	64	0.000025	0.000025
Potassium	65	0	15.4	36	105	0	15.2	17
Magnesium	65	0	12.8	15.4	105	0	12.0	15.6
Manganese	1	0	0.03	0.03	62	0	0.016	0.067
Molybdenum	--	--	--	--	62	1	0.003	0.007
Sodium	65	0	85.6	153	105	0	99.0	117
Nickel	27	27	ND	ND	62	0	0.003	0.006
Lead	27	27	ND	ND	62	61	0.0003	0.0021
Antimony	26	25	0.011	0.04	62	62	0.0005	0.0005
Selenium	27	26	0.010	0.02	62	62	0.001	0.001
Silicon	65	0	11.3	12.9	105	0	11.2	13.8
Thallium	26	26	ND	ND	62	62	0.0005	0.0005
Zinc	27	0	0.127	0.24	62	0	0.035	0.058
General Chemistry (mg/L)								
Alkalinity	74	0	287	329	158	0	141	172
BOD_5	58	0	281	870	53	43	1.30	4.0
Chloride	66	0	116	218	106	0	134	162
CN, Aquatic Free (ug/L)	64	54	1.39	6	60	52	1.25	4
Fluoride	64	0	0.214	0.4	61	8	0.166	0.9
Hardness	64	0	201	243	84	0	188	225
Ammonia as N	701	0	35.8	81	1408	1224	0.075	1.8
Nitrite as N	284	159	0.054	0.88	1154	657	0.043	0.7
Nitrate as N	282	107	0.241	6	1151	0	6.08	14.3
pH	780	0	7.57	8.25	--	--	--	--
Sulfate	68	0	43.2	114	105	0	56.0	79
Total Dissolved Solids	281	1	504	846	237	0	523	640
Total Kjeldahl Nitrogen	275	0	48.9	92	107	13	0.962	1.9
Total Organic Carbon	417	0	167	550	1655	0	4.13	7.3
Total Coliform	--	--	--	--	588	562	1.05	4.0
Total Suspended Solids	428	0	277	1310	1645	1341	1.36	10
Volatile Organics (ug/L)								
1,1,1-Trichloroethane	14	14	ND	ND	34	34	ND	ND
1,1,2,2-Tetrachloroethane	14	14	ND	ND	34	34	ND	ND
1,1,2-Trichloroethane	14	14	ND	ND	34	34	ND	ND
1,1-Dichloroethane	14	14	ND	ND	34	34	ND	ND
1,1-Dichloroethene	14	14	ND	ND	34	34	ND	ND
1,2-Dichlorobenzene	14	14	ND	ND	34	34	ND	ND
1,2-Dichloroethane	14	14	ND	ND	34	34	ND	ND
1,2-Dichloropropane	14	14	ND	ND	34	34	ND	ND
1,3-Dichlorobenzene	14	14	ND	ND	34	34	ND	ND
1,4-Dichlorobenzene	14	14	ND	ND	34	34	ND	ND
2-Chloroethyl vinyl ether	14	14	ND	ND	34	34	ND	ND
Acrolein	5	5	ND	ND	5	5	ND	ND
Acrylonitrile	5	5	ND	ND	5	5	ND	ND
Benzene	14	14	ND	ND	34	34	ND	ND
Bromodichloromethane	14	14	ND	ND	57	0	22.4	40
Bromoform	14	14	ND	ND	57	51	0.68	3
Bromomethane	14	14	ND	ND	34	34	ND	ND
Carbon tetrachloride	14	14	ND	ND	34	34	ND	ND
Chlorobenzene	14	14	ND	ND	34	34	ND	ND
Chloroethane	14	14	ND	ND	34	34	ND	ND
Chloroform	14	13	2.82	7	57	0	47.4	69
Chloromethane	14	14	ND	ND	34	34	ND	ND
cis-1,3-Dichloropropene	14	14	ND	ND	34	34	ND	ND

Table A-3
RP-5 Historical Results Summary Statistics
Local Limits Report

	RP-5 Influent				RP-5 effluent			
Parameters	# of Results	# of NDs	Avg	Max	# of Results	# of NDs	Avg	Max
Dibromochloromethane	14	14	ND	ND	57	0	7.47	22
Ethylbenzene	14	14	ND	ND	34	34	ND	ND
Methylene chloride	14	13	3.14	9	34	33	ND	ND
Tetrachloroethene	14	14	ND	ND	34	34	ND	ND
Toluene	14	12	3.32	8	34	34	ND	ND
Total THM	--	--	--	--	23	0	81.9	114
trans-1,2-Dichloroethene	14	14	ND	ND	34	34	ND	ND
trans-1,3-Dichloropropene	14	14	ND	ND	34	34	ND	ND
Trichloroethene	14	14	ND	ND	34	34	ND	ND
Trichlorofluoromethane	14	14	ND	ND	34	34	ND	ND
Vinyl chloride	14	14	ND	ND	34	34	ND	ND
Semivolatile Organics (ug/L)								
1,2,4-Trichlorobenzene	15	15	ND	ND	32	32	ND	ND
1,2-Dichlorobenzene	15	15	ND	ND	32	32	ND	ND
1,3-Dichlorobenzene	15	15	ND	ND	32	32	ND	ND
1,4-Dichlorobenzene	15	15	ND	ND	32	32	ND	ND
2,4,6-Trichlorophenol	15	15	ND	ND	32	32	ND	ND
2,4-Dichlorophenol	15	15	ND	ND	32	32	ND	ND
2,4-Dimethylphenol	15	15	ND	ND	32	32	ND	ND
2,4-Dinitrophenol	15	15	ND	ND	32	32	ND	ND
2,4-Dinitrotoluene	15	15	ND	ND	32	32	ND	ND
2,6-Dinitrotoluene	15	15	ND	ND	32	32	ND	ND
2-Chloronaphthalene	15	15	ND	ND	32	32	ND	ND
2-Chlorophenol	15	15	ND	ND	32	32	ND	ND
2-Methyl-4,6-dinitrophenol	15	15	ND	ND	32	32	ND	ND
2-Nitrophenol	15	15	ND	ND	32	32	ND	ND
3,3-Dichlorobenzidine	15	15	ND	ND	32	32	ND	ND
4-Bromophenyl phenyl ether	15	15	ND	ND	32	32	ND	ND
4-Chloro-3-methylphenol	15	15	ND	ND	32	32	ND	ND
4-Chlorophenyl phenyl ether	15	15	ND	ND	32	32	ND	ND
4-Nitrophenol	15	15	ND	ND	32	32	ND	ND
Acenaphthene	15	15	ND	ND	32	32	ND	ND
Acenaphthylene	15	15	ND	ND	32	32	ND	ND
Anthracene	15	15	ND	ND	32	32	ND	ND
Azobenzene	15	15	ND	ND	32	32	ND	ND
Benzidine	15	15	ND	ND	32	32	ND	ND
Benzo(a)anthracene	15	15	ND	ND	32	32	ND	ND
Benzo(a)pyrene	15	15	ND	ND	32	32	ND	ND
Benzo(b)fluoranthene	15	15	ND	ND	32	32	ND	ND
Benzo(g,h,i)perylene	15	15	ND	ND	32	32	ND	ND
Benzo(k)fluoranthene	15	15	ND	ND	32	32	ND	ND
Bis(2-chloroethoxy)methane	15	15	ND	ND	32	32	ND	ND
Bis(2-chloroethyl)ether	15	15	ND	ND	32	32	ND	ND
Bis(2-chloroisopropyl)ether	15	15	ND	ND	32	32	ND	ND
Bis(2-ethylhexyl)phthalate	22	15	7.3	14	60	60	ND	ND
Butyl benzyl phthalate	19	18	2.7	6	32	32	ND	ND
Chrysene	15	15	ND	ND	32	32	ND	ND
Dibenzo(a,h)anthracene	15	15	ND	ND	32	32	ND	ND
Diethyl phthalate	22	19	5.7	11	32	32	ND	ND
Dimethyl phthalate	15	15	ND	ND	32	32	ND	ND
Di-n-butyl phthalate	15	15	ND	ND	32	32	ND	ND
Di-n-octyl phthalate	15	15	ND	ND	32	32	ND	ND
Fluoranthene	15	15	ND	ND	32	32	ND	ND
Fluorene	15	15	ND	ND	32	32	ND	ND
Hexachlorobenzene	15	15	ND	ND	32	32	ND	ND
Hexachlorobutadiene	15	15	ND	ND	32	32	ND	ND
Hexachlorocyclopentadiene	15	15	ND	ND	32	32	ND	ND
Hexachloroethane	15	15	ND	ND	32	32	ND	ND
Indeno(1,2,3-cd)pyrene	15	15	ND	ND	32	32	ND	ND
Isophorone	15	15	ND	ND	32	32	ND	ND
Naphthalene	15	15	ND	ND	32	32	ND	ND
Nitrobenzene	15	15	ND	ND	32	32	ND	ND
N-Nitrosodimethylamine	15	15	ND	ND	32	32	ND	ND
N-Nitroso-di-n-propylamine	15	15	ND	ND	32	32	ND	ND
N-Nitrosodiphenylamine	15	15	ND	ND	32	32	ND	ND
Pentachlorophenol	15	15	ND	ND	32	32	ND	ND
Phenanthrene	15	15	ND	ND	32	32	ND	ND

Table A-3
RP-5 Historical Results Summary Statistics
Local Limits Report

	RP-5 Influent				RP-5 effluent			
Parameters	# of Results	# of NDs	Avg	Max	# of Results	# of NDs	Avg	Max
Phenol	15	15	ND	ND	32	32	ND	ND
Pyrene	15	15	ND	ND	32	32	ND	ND
TCDD Scan	2	2	ND	ND	1	1	ND	ND
Pesticides/PCBs (ug/L)								
4,4-DDD	5	5	ND	ND	5	5	ND	ND
4,4-DDE	5	5	ND	ND	5	5	ND	ND
4,4-DDT	5	5	ND	ND	5	5	ND	ND
Aldrin	5	5	ND	ND	5	5	ND	ND
Alpha-BHC	5	5	ND	ND	5	5	ND	ND
Beta-BHC	5	5	ND	ND	5	5	ND	ND
Chlordane	5	5	ND	ND	5	5	ND	ND
Delta-BHC	5	5	ND	ND	5	5	ND	ND
Dieldrin	5	5	ND	ND	5	5	ND	ND
Endosulfan I	5	5	ND	ND	5	5	ND	ND
Endosulfan II	5	5	ND	ND	5	5	ND	ND
Endosulfan Sulfate	5	5	ND	ND	5	5	ND	ND
Endrin	5	5	ND	ND	5	5	ND	ND
Endrin aldehyde	5	5	ND	ND	5	5	ND	ND
Gamma-BHC	5	5	ND	ND	5	5	ND	ND
Heptachlor	5	5	ND	ND	5	5	ND	ND
Heptachlor epoxide	5	5	ND	ND	5	5	ND	ND
PCB-1016	5	5	ND	ND	5	5	ND	ND
PCB-1221	5	5	ND	ND	5	5	ND	ND
PCB-1232	5	5	ND	ND	5	5	ND	ND
PCB-1242	5	5	ND	ND	5	5	ND	ND
PCB-1248	5	5	ND	ND	5	5	ND	ND
PCB-1254	5	5	ND	ND	5	5	ND	ND
PCB-1260	5	5	ND	ND	5	5	ND	ND
Toxaphene	5	5	ND	ND	5	5	ND	ND

Notes:
mg/L = milligrams per liter; ug/L = micrograms per liter; "--" = Not analyzed
Avg = average; Max = maximum; ND = Not detected above reporting limit; PCBs = Polychlorinated biphenyls
Averages were calculated for parameters having at least one detection; 1/2 the reporting limit was substituted for non-detects

Table A-4
CCWRF Historical Results Summary Statistics
Local Limits Report

Parameters	CCWRF Influent				CCWRF Effluent			
	# of Results	# of NDs	Avg	Max	# of Results	# of NDs	Avg	Max
Metals (mg/L)								
Silver	26	26	ND	ND	65	65	ND	ND
Aluminum	--	--	--	--	65	17	0.041	0.099
Arsenic	26	25	0.005	0.01	65	63	0.001	0.002
Boron	66	0	0.277	0.4	117	0	0.274	0.4
Barium	26	0	0.070	0.09	65	0	0.014	0.023
Beryllium	25	25	ND	ND	65	65	ND	ND
Calcium	66	0	59.7	153	117	0	50.8	60
Cadmium	26	26	ND	ND	65	65	ND	ND
Cobalt	26	26	ND	ND	65	65	ND	ND
Chromium	26	24	0.005	0.01	65	0	0.0011	0.0037
Copper	26	0	0.065	0.13	65	0	0.0060	0.0091
Iron	2	0	0.945	1.06	8	0	0.053	0.089
Mercury	26	24	0.0003	0.0007	64	64	ND	ND
Potassium	66	0	17.6	24	117	0	15.9	18
Magnesium	66	0	13.3	23.4	117	0	11.8	14.1
Manganese	2	0	0.12	0.2	65	2	0.008	0.028
Molybdenum	--	--	--	--	65	0	0.007	0.085
Sodium	66	0	90.8	120	117	0	105	124
Nickel	26	26	ND	ND	65	0	0.004	0.012
Lead	26	26	ND	ND	65	65	ND	ND
Antimony	25	25	ND	ND	65	58	0.0006	0.001
Selenium	26	25	0.01	0.02	65	64	0.0010	0.002
Silicon	66	0	10.9	19	117	0	9.58	12.1
Thallium	25	25	ND	ND	65	65	ND	ND
Zinc	26	0	0.204	0.62	65	0	0.041	0.101
General Chemistry (mg/L)								
Alkalinity	93	0	271	363	146	0	138	257
BOD_5	57	0	373	855	56	46	1.25	3
Chloride	68	0	119	222	119	0	136	173
CN, Aquatic Free (ug/L)	63	53	1.37	5	63	53	1.29	5
Fluoride	63	0	0.214	0.3	64	5	0.163	0.6
Hardness	63	0	203	479	96	0	175	204
Ammonia as N	903	0	32.8	53.5	1547	1429	0.070	5.4
Nitrite as N	279	149	0.065	0.48	1255	700	0.043	1.92
Nitrate as N	278	89	0.238	4.7	1255	0	4.73	8.2
Oil & Grease	1	0	44	44	--	--	--	--
Orthophosphate	1	0	19.8	19.8	2	0	6.15	6.8
pH	2	0	7.68	7.8	--	--	--	--
Sulfate	68	0	45.3	70	118	0	63.6	92
Total Dissolved Solids	274	0	543	934	264	0	524	632
Total Kjeldahl Nitrogen	249	0	50.6	78.6	121	19	0.907	2.2
Total Organic Carbon	626	0	196	629	1870	0	4.53	22.6
Total Coliform	--	--	--	--	1940	1846	1.09	23
Total Suspended Solids	633	0	314	1150	1862	1783	1.08	22
Volatile Organics (ug/L)								
1,1,1-Trichloroethane	24	24	ND	ND	19	19	ND	ND
1,1,2,2-Tetrachloroethane	24	24	ND	ND	19	19	ND	ND
1,1,2-Trichloroethane	24	24	ND	ND	19	19	ND	ND
1,1-Dichloroethane	24	24	ND	ND	19	19	ND	ND
1,1-Dichloroethene	24	24	ND	ND	19	19	ND	ND
1,2-Dichlorobenzene	24	24	ND	ND	19	19	ND	ND
1,2-Dichloroethane	24	24	ND	ND	19	19	ND	ND
1,2-Dichloropropane	24	24	ND	ND	19	19	ND	ND
1,3-Dichlorobenzene	24	24	ND	ND	19	19	ND	ND
1,4-Dichlorobenzene	24	24	ND	ND	19	19	ND	ND
2-Chloroethyl vinyl ether	24	24	ND	ND	19	19	ND	ND
Acrolein	5	5	ND	ND	6	6	ND	ND
Acrylonitrile	5	5	ND	ND	6	6	ND	ND
Benzene	24	20	19.2	189	19	19	0.5	0.5
Bromodichloromethane	24	24	ND	ND	26	0	27.5	53
Bromoform	24	24	ND	ND	26	17	3.33	21
Bromomethane	24	24	ND	ND	19	19	ND	ND
Carbon tetrachloride	24	24	ND	ND	19	19	ND	ND
Chlorobenzene	24	24	ND	ND	19	19	ND	ND
Chloroethane	24	24	ND	ND	19	19	ND	ND
Chloroform	24	24	ND	ND	26	0	44.8	78

Table A-4
CCWRF Historical Results Summary Statistics
Local Limits Report

	CCWRF Influent				CCWRF Effluent			
Parameters	**# of Results**	**# of NDs**	**Avg**	**Max**	**# of Results**	**# of NDs**	**Avg**	**Max**
Chloromethane	24	24	ND	ND	19	19	ND	ND
cis-1,3-Dichloropropene	24	24	ND	ND	19	19	ND	ND
Dibromochloromethane	24	24	ND	ND	26	0	16.2	60
Ethylbenzene	24	20	59.8	1020	19	19	ND	ND
Methylene chloride	24	24	ND	ND	19	18	0.842	7
Tetrachloroethene	24	24	ND	ND	19	19	ND	ND
Toluene	27	16	187	3080	19	19	ND	ND
Total THM	--	--	--	--	7	0	114	152
trans-1,2-Dichloroethene	24	24	ND	ND	19	19	ND	ND
trans-1,3-Dichloropropene	24	24	ND	ND	19	19	ND	ND
Trichloroethene	24	23	6.44	62	19	19	ND	ND
Trichlorofluoromethane	24	24	ND	ND	19	19	ND	ND
Vinyl chloride	24	24	ND	ND	19	19	ND	ND
Semivolatile Organics (ug/L)								
1,2,4-Trichlorobenzene	20	20	ND	ND	34	34	ND	ND
1,2-Dichlorobenzene	20	20	ND	ND	34	34	ND	ND
1,3-Dichlorobenzene	20	20	ND	ND	34	34	ND	ND
1,4-Dichlorobenzene	20	20	ND	ND	34	34	ND	ND
2,4,6-Trichlorophenol	20	20	ND	ND	34	34	ND	ND
2,4-Dichlorophenol	20	20	ND	ND	34	34	ND	ND
2,4-Dimethylphenol	20	20	ND	ND	34	34	ND	ND
2,4-Dinitrophenol	20	20	ND	ND	34	34	ND	ND
2,4-Dinitrotoluene	20	20	ND	ND	34	34	ND	ND
2,6-Dinitrotoluene	20	20	ND	ND	34	34	ND	ND
2-Chloronaphthalene	20	20	ND	ND	34	34	ND	ND
2-Chlorophenol	20	20	ND	ND	34	34	ND	ND
2-Methyl-4,6-dinitrophenol	20	20	ND	ND	34	34	ND	ND
2-Nitrophenol	20	20	ND	ND	34	34	ND	ND
3,3-Dichlorobenzidine	20	20	ND	ND	34	34	ND	ND
4-Bromophenyl phenyl ether	20	20	ND	ND	34	34	ND	ND
4-Chloro-3-methylphenol	20	20	ND	ND	34	34	ND	ND
4-Chlorophenyl phenyl ether	20	20	ND	ND	34	34	ND	ND
4-Nitrophenol	20	20	ND	ND	34	34	ND	ND
Acenaphthene	20	20	ND	ND	34	34	ND	ND
Acenaphthylene	20	20	ND	ND	34	34	ND	ND
Anthracene	20	20	ND	ND	34	34	ND	ND
Azobenzene	20	20	ND	ND	34	34	ND	ND
Benzidine	20	20	ND	ND	34	34	ND	ND
Benzo(a)anthracene	20	20	ND	ND	34	34	ND	ND
Benzo(a)pyrene	20	20	ND	ND	34	34	ND	ND
Benzo(b)fluoranthene	20	20	ND	ND	34	34	ND	ND
Benzo(g,h,i)perylene	20	20	ND	ND	34	34	ND	ND
Benzo(k)fluoranthene	20	20	ND	ND	34	34	ND	ND
Bis(2-chloroethoxy)methane	20	20	ND	ND	34	34	ND	ND
Bis(2-chloroethyl)ether	20	20	ND	ND	34	34	ND	ND
Bis(2-chloroisopropyl)ether	20	20	ND	ND	34	34	ND	ND
Bis(2-ethylhexyl)phthalate	26	18	7.9	21	63	61	1.1	6
Butyl benzyl phthalate	23	23	ND	ND	34	34	ND	ND
Chrysene	20	20	ND	ND	34	34	ND	ND
Dibenzo(a,h)anthracene	20	20	ND	ND	34	34	ND	ND
Diethyl phthalate	26	11	13.8	47	34	33	1.1	3
Dimethyl phthalate	20	20	ND	ND	34	34	ND	ND
Di-n-butyl phthalate	20	20	ND	ND	34	34	ND	ND
Di-n-octyl phthalate	20	20	ND	ND	34	34	ND	ND
Fluoranthene	20	20	ND	ND	34	34	ND	ND
Fluorene	20	20	ND	ND	34	34	ND	ND
Hexachlorobenzene	20	20	ND	ND	34	34	ND	ND
Hexachlorobutadiene	20	20	ND	ND	34	34	ND	ND
Hexachlorocyclopentadiene	20	20	ND	ND	34	34	ND	ND
Hexachloroethane	20	20	ND	ND	34	34	ND	ND
Indeno(1,2,3-cd)pyrene	20	20	ND	ND	34	34	ND	ND
Isophorone	20	20	ND	ND	34	34	ND	ND
Naphthalene	20	20	ND	ND	34	34	ND	ND
Nitrobenzene	20	20	ND	ND	34	34	ND	ND
N-Nitrosodimethylamine	20	20	ND	ND	34	34	ND	ND
N-Nitroso-di-n-propylamine	20	20	ND	ND	34	34	ND	ND
N-Nitrosodiphenylamine	20	20	ND	ND	34	34	ND	ND

Table A-4
CCWRF Historical Results Summary Statistics
Local Limits Report

	CCWRF Influent				CCWRF Effluent			
Parameters	# of Results	# of NDs	Avg	Max	# of Results	# of NDs	Avg	Max
Pentachlorophenol	20	20	ND	ND	34	34	ND	ND
Phenanthrene	20	20	ND	ND	34	34	ND	ND
Phenol	20	20	ND	ND	34	34	ND	ND
Pyrene	20	20	ND	ND	34	34	ND	ND
TCDD Scan	2	2	ND	ND	1	1	ND	ND
Pesticides/PCBs/Herbicides (ug/L)								
4,4-DDD	8	8	ND	ND	6	6	ND	ND
4,4-DDE	8	8	ND	ND	6	6	ND	ND
4,4-DDT	8	8	ND	ND	6	6	ND	ND
Aldrin	8	8	ND	ND	6	6	ND	ND
Alpha-BHC	8	8	ND	ND	6	6	ND	ND
Beta-BHC	8	8	ND	ND	6	6	ND	ND
Chlordane	5	5	ND	ND	6	6	ND	ND
Chlorpyrifos	6	0	0.06	0.1	--	--	--	--
Delta-BHC	8	8	ND	ND	6	6	ND	ND
Diazinon	6	0	0.34	0.81	--	--	--	--
Dieldrin	8	8	ND	ND	6	6	ND	ND
Endosulfan I	8	8	ND	ND	6	6	ND	ND
Endosulfan II	8	8	ND	ND	6	6	ND	ND
Endosulfan Sulfate	8	8	ND	ND	6	6	ND	ND
Endrin	8	8	ND	ND	6	6	ND	ND
Endrin aldehyde	8	8	ND	ND	6	6	ND	ND
Gamma-BHC	8	8	ND	ND	6	6	ND	ND
Heptachlor	8	8	ND	ND	6	6	ND	ND
Heptachlor epoxide	8	8	ND	ND	6	6	ND	ND
PCB-1016	5	5	ND	ND	6	6	ND	ND
PCB-1221	5	5	ND	ND	6	6	ND	ND
PCB-1232	5	5	ND	ND	6	6	ND	ND
PCB-1242	5	5	ND	ND	6	6	ND	ND
PCB-1248	5	5	ND	ND	6	6	ND	ND
PCB-1254	5	5	ND	ND	6	6	ND	ND
PCB-1260	5	5	ND	ND	6	6	ND	ND
Toxaphene	5	5	ND	ND	6	6	ND	ND

Notes:
mg/L = milligrams per liter; ug/L = micrograms per liter; "--" = Not analyzed
Avg = average; Max = maximum; ND = Not detected above reporting limit; PCBs = Polychlorimated biphenyls
Averages were calculated for parameters having at least one detection; 1/2 the reporting limit was substituted for non-detects
Chloropyrifos and diazinon detections were all from sample scollected in 2009 and analyzed by enzyme-linked immunoassay (ELISA)

Table A-5
Biosolids Historical Results Summary Statistics
Local Limits Report

Parameters	RP-1 # of Results	RP-1 # of NDs	RP-1 Avg	RP-1 Max	RP-2 # of Results	RP-2 # of NDs	RP-2 Avg	RP-2 Max
Metals (mg/kg)								
Silver	10	10	ND	ND	10	10	ND	ND
Arsenic	10	8	4.20	6.0	10	10	ND	ND
Beryllium	10	10	ND	ND	10	10	ND	ND
Cadmium	10	10	ND	ND	10	10	ND	ND
Chromium	10	0	32.1	46.0	10	0	31.2	38.0
Copper	10	0	331	386	10	0	372	484
Molydenum	10	2	8.40	11.0	10	1	8.15	9.00
Nickel	10	1	16.7	20.0	10	1	16.3	20.0
Lead	10	1	15.9	19.0	10	1	14.0	17.0
Antimony	10	9	4.35	11.0	10	10	ND	ND
Selenium	10	7	5.25	10.0	10	3	7.25	21.0
Thallium	10	10	ND	ND	10	10	ND	ND
Zinc	10	0	793	986	10	0	721	926
Total Solids (%)								
Total Solids	268	0	23.8	28.5	344	0	13.6	20.4

Notes:
mg/kg = milligrams per kilogram; % = percent; ND = Not detected above reporting limit
RP-1 biosolids results consist of centrifuge and belt press cake samples
RP-2 biosolids results consist of centrifuge and belt press cake (east and west) samples
Averages were calculated for parameters having at least one detection; 1/2 the reporting limit was substituted for non-detects

Table A-6
2014 Additional Sampling Influent and Effluent Results
Local Limits Study

Parameters	RP-1 Influent									
	9/9/2014	9/10/2014	9/11/2014	9/12/2014	9/13/2014	9/14/2014	9/15/2014	9/16/2014	9/17/2014	9/18/2014
Metals (mg/L)										
Aluminum	0.23	0.66	0.99	--	1	--	0.88	1.21	0.94	0.78
Antimony	< 0.02	< 0.02	< 0.02	--	< 0.02	--	< 0.02	< 0.02	< 0.02	< 0.02
Arsenic	< 0.01	< 0.01	< 0.01	--	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Barium	0.04	0.08	0.08	--	0.08	--	0.08	0.09	0.08	0.07
Beryllium	< 0.01	< 0.01	< 0.01	--	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Boron	0.3	0.3	0.3	--	0.2	--	0.3	0.2	0.2	0.3
Cadmium	< 0.01	< 0.01	< 0.01	--	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Calcium	47	53	54	--	56	--	56	56	54	56
Chromium	< 0.01	< 0.01	< 0.01	--	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Cobalt	< 0.01	< 0.01	< 0.01	--	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Copper	0.04	0.07	0.07	--	0.07	--	0.06	0.08	0.07	0.06
Iron	0.76	2.05	1.93	--	1.82	--	1.87	2.62	1.88	1.4
Lead	< 0.02	< 0.02	< 0.02	--	< 0.02	--	< 0.02	< 0.02	< 0.02	< 0.02
Magnesium	9.4	11	11	--	11.1	--	11.3	10.4	10.8	10.6
Manganese	< 0.02	0.03	0.03	--	0.04	--	0.03	0.04	0.04	0.03
Mercury	< 0.0005	< 0.0005	< 0.0005	--	< 0.0005	--	0.0008	< 0.0005	< 0.0005	< 0.0005
Molybdenum	0.01	0.02	0.01	--	0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Nickel	< 0.01	< 0.01	< 0.01	--	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Potassium	15	16	16	--	17	--	16	15	15	17
Selenium	< 0.02	< 0.02	< 0.02	--	< 0.02	--	< 0.02	< 0.02	< 0.02	< 0.02
Silicon	12.7	12.8	12.6	--	12.9	--	13.3	12.9	13	12.4
Silver	< 0.01	< 0.01	< 0.01	--	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Sodium	88	95	97	--	94	--	92	91	91	96
Thallium	< 0.05	< 0.05	< 0.05	--	< 0.05	--	< 0.05	< 0.05	< 0.05	< 0.05
Uranium	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	--	--	--	--
Zinc	0.09	0.2	0.19	--	0.19	--	0.19	0.22	0.19	0.16
General Chemistry (mg/L)										
Ammonia as N	25.4	27.5	26.5	--	25.5	27.6	25.4	28.6	27.5	25.7
BOD	179	308	374	--	335	383	307	417	309	299
Chloride	82	97	103	--	95	88	82	79	87	100
Cyanide	< 0.005	0.019	0.007	0.023	0.018	--	0.007	0.009	--	0.005
Cyanide, aquatic free	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	--	< 0.002
Hardness	156	178	180	--	186	--	186	183	179	183
Nitrate as N	1.1	0.3	0.6	--	0.3	< 0.1	0.4	< 0.1	< 0.1	0.6
Nitrite as N	0.77	0.15	0.15	--	0.45	0.17	0.36	0.1	0.56	0.38
Sulfate	49	57	62	--	53	318	55	36	51	56
Total Dissolved Solids	492	544	510	--	486	476	486	446	494	496
Total Dissolved Solids, Fixed	390	390	422	--	442	414	428	388	430	424
Total Organic Carbon	100	168	202	--	182	207	167	224	168	163
Total Suspended Solids	245	387	364	--	386	394	316	390	370	264
VOCs (ug/L)										
Bromodichloromethane	--	--	--	--	--	--	< 10	< 10	--	< 10
Bromoform	--	--	--	--	--	--	< 10	< 10	--	< 10
Chloroform	--	--	--	--	--	--	< 10	< 10	--	< 10
Dibromochloromethane	--	--	--	--	--	--	< 10	< 10	--	< 10
All VOC analytes	--	--	--	--	--	--	ND	ND	--	ND
SVOCs (ug/L)										
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	14	< 10	--	< 10
Diethyl phthalate	--	--	--	--	--	--	< 10	< 10	--	< 10
All other SVOC analytes	--	--	--	--	--	--	ND	ND	--	ND

Table A-6
2014 Additional Sampling Influent and Effluent Results
Local Limits Study

	RP-1 Effluent									
Parameters	9/9/2014	9/10/2014	9/11/2014	9/12/2014	9/13/2014	9/14/2014	9/15/2014	9/16/2014	9/17/2014	9/18/2014
Metals (mg/L)										
Aluminum	0.04	0.038	0.036	0.042	0.043	--	0.042	0.04	0.036	0.036
Antimony	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Arsenic	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	< 0.002	< 0.002
Barium	0.015	0.014	0.014	0.015	0.014	--	0.014	0.014	0.014	0.015
Beryllium	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Boron	0.3	0.3	0.3	0.2	0.2	--	0.2	0.2	0.2	0.2
Cadmium	< 0.00025	< 0.00025	< 0.00025	< 0.00025	< 0.00025	--	< 0.00025	< 0.00025	< 0.00025	< 0.00025
Calcium	49	49	48	48	48	--	45	46	46	48
Chromium	0.0014	0.0009	0.001	0.001	0.001	--	0.0008	0.0008	0.0008	0.0011
Cobalt	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.0047	0.0036	0.0034	0.0037	0.0036	--	0.0037	0.0036	0.0036	0.0036
Iron	0.063	0.061	0.062	0.063	0.066	--	0.068	0.074	0.072	0.067
Lead	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Magnesium	9.6	9.5	9.7	9.3	9.4	--	8.9	9.1	9.2	8.7
Manganese	0.006	0.007	0.007	0.008	0.007	--	0.006	0.009	0.008	0.011
Mercury	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	--	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Molybdenum	0.008	0.008	0.009	0.009	0.009	--	0.008	0.008	0.009	0.008
Nickel	0.002	0.002	0.002	0.002	0.003	--	0.002	0.002	0.002	0.003
Potassium	14	15	15	15	15	--	14	14	14	14
Selenium	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	< 0.002	< 0.002
Silicon	11.7	11.8	11.2	10.8	11.1	--	10.8	11.1	11.2	10.5
Silver	< 0.00025	< 0.00025	< 0.00025	< 0.00025	< 0.00025	--	< 0.00025	< 0.00025	< 0.00025	< 0.00025
Sodium	106	107	109	111	109	--	102	100	105	107
Thallium	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Uranium	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Vanadium	0.0036	0.0034	0.0022	0.0035	0.0028	--	0.0034	0.0032	0.0033	0.0035
Zinc	0.21	0.024	0.022	0.024	0.023	--	0.022	0.023	0.022	0.023
General Chemistry (mg/L)										
Ammonia as N	< 0.1	0.1	< 0.1	0.1	0.2	--	< 0.1	< 0.1	< 0.1	< 0.1
BOD	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloride	119	123	123	122	120	--	113	115	113	123
Cyanide	< 0.005	< 0.005	0.005	< 0.005	< 0.005	--	< 0.005	0.005	--	< 0.005
Cyanide, aquatic free	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	--	< 0.002
Hardness	162	161	160	158	159	--	149	152	153	156
Nitrate as N	3.5	4.1	4.1	3.9	3.1	--	2.7	2.8	2.2	3
Nitrite as N	0.13	0.11	0.12	0.13	0.14	--	0.14	0.12	0.03	< 0.02
Sulfate	63	60	60	61	57	--	57	55	52	55
Total Dissolved Solids	516	534	508	--	508	--	486	490	496	494
Total Dissolved Solids, Fixed	486	490	454	--	464	--	466	458	472	472
Total Organic Carbon	5.6	5.4	5.3	5.5	5.3	5.6	5.5	5.4	5.5	5.4
Total Suspended Solids	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
VOCs (ug/L)										
Bromodichloromethane	--	--	--	--	--	--	26	27	--	29
Bromoform	--	--	--	--	--	--	< 1	< 1	--	< 1
Chloroform	--	--	--	--	--	--	54	56	--	55
Dibromochloromethane	--	--	--	--	--	--	7	7	--	8
All VOC analytes	--	--	--	--	--	--	ND	ND	--	ND
SVOCs (ug/L)										
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	< 2	< 2	--	< 2
Diethyl phthalate	--	--	--	--	--	--	< 2	< 2	--	< 2
All other SVOC analytes	--	--	--	--	--	--	ND	ND	--	ND

Table A-6
2014 Additional Sampling Influent and Effluent Results
Local Limits Study

Parameters	RP-4 Influent									
	9/9/2014	9/10/2014	9/11/2014	9/12/2014	9/13/2014	9/14/2014	9/15/2014	9/16/2014	9/17/2014	9/18/2014
Metals (mg/L)										
Aluminum	0.45	0.38	0.35	0.42	0.45	--	0.46	0.39	0.36	--
Antimony	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	--	< 0.02	< 0.02	< 0.02	--
Arsenic	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	--
Barium	0.05	0.05	0.05	0.06	0.06	--	0.05	0.05	0.06	--
Beryllium	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	--
Boron	0.3	0.2	0.2	0.2	0.2	--	0.3	0.2	0.2	--
Cadmium	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	--
Calcium	49	48	47	53	51	--	48	49	47	--
Chromium	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	--
Cobalt	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	--
Copper	0.05	0.05	0.04	0.05	0.06	--	0.05	0.04	0.05	--
Iron	0.37	0.37	0.32	0.37	0.41	--	0.34	0.34	0.34	--
Lead	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	--	< 0.02	< 0.02	< 0.02	--
Magnesium	11	11.1	11	11.4	11	--	11.1	11	10.6	--
Manganese	0.02	0.02	0.02	0.02	0.02	--	< 0.02	0.02	< 0.02	--
Mercury	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	< 0.0005	< 0.0005	< 0.0005	--
Molybdenum	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	--
Nickel	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	--
Potassium	16	14	14	15	15	--	16	14	14	--
Selenium	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	--	< 0.02	< 0.02	< 0.02	--
Silicon	11.1	10.5	10.3	11.1	10.7	--	11.1	11	10.6	--
Silver	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	--
Sodium	102	100	89	92	96	--	97	94	90	--
Thallium	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	--	< 0.05	< 0.05	< 0.05	--
Uranium	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	--	--	--	--
Zinc	0.15	0.17	0.15	0.18	0.2	--	0.14	0.15	0.15	--
General Chemistry (mg/L)										
Ammonia as N	36.9	47	45.3	44.7	43.8	51.9	36.5	43.4	46	46.5
BOD	242	288	297	326	--	207	280	265	264	336
Chloride	121	117	96	100	107	107	119	109	91	--
Cyanide	< 0.005	0.023	0.009	0.013	0.015	--	0.012	0.015	< 0.005	0.005
Cyanide, aquatic free	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	< 0.002	< 0.002
Hardness	168	166	163	179	173	--	166	168	161	--
Nitrate as N	0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	0.2	< 0.1	< 0.1	--
Nitrite as N	0.23	0.17	0.14	0.16	0.18	0.08	0.17	0.14	0.03	--
Sulfate	54	57	56	54	54	54	57	54	61	--
Total Dissolved Solids	568	530	454	--	492	500	532	508	494	--
Total Dissolved Solids, Fixed	444	446	400	--	428	438	452	448	416	--
Total Organic Carbon	133	157	162	177	177	115	153	145	145	182
Total Suspended Solids	258	256	295	329	335	194	208	260	186	323
VOCs (ug/L)										
Bromodichloromethane	--	--	--	--	--	--	< 10	< 10	--	< 10
Bromoform	--	--	--	--	--	--	< 10	< 10	--	< 10
Chloroform	--	--	--	--	--	--	< 10	< 10	--	< 10
Dibromochloromethane	--	--	--	--	--	--	< 10	< 10	--	< 10
All VOC analytes	--	--	--	--	--	--	ND	ND	--	ND
SVOCs (ug/L)										
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	23	< 10	--	< 10
Diethyl phthalate	--	--	--	--	--	--	< 10	< 10	--	< 10
All other SVOC analytes	--	--	--	--	--	--	ND	ND	--	ND

Table A-6
2014 Additional Sampling Influent and Effluent Results
Local Limits Study

Parameters	RP-4 Effluent									
	9/9/2014	9/10/2014	9/11/2014	9/12/2014	9/13/2014	9/14/2014	9/15/2014	9/16/2014	9/17/2014	9/18/2014
Metals (mg/L)										
Aluminum	< 0.025	< 0.025	< 0.025	< 0.025	0.026	--	0.029	0.038	0.031	0.038
Antimony	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Arsenic	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	< 0.002	< 0.002
Barium	0.009	0.010	0.010	0.009	0.009	--	0.009	0.009	0.009	0.009
Beryllium	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Boron	0.3	0.3	0.3	0.3	0.3	--	0.3	0.3	0.3	0.3
Cadmium	< 0.00025	< 0.00025	< 0.00025	< 0.00025	< 0.00025	--	< 0.00025	< 0.00025	< 0.00025	< 0.00025
Calcium	45	44	44	44	43	--	42	42	43	43
Chromium	0.0009	0.001	0.0009	0.001	0.001	--	0.0008	0.0018	0.001	0.001
Cobalt	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.0055	0.0056	0.0056	0.0058	0.0057	--	0.0093	0.0065	0.0063	0.0059
Iron	0.031	0.028	0.03	0.031	0.032	--	0.041	0.043	0.033	0.032
Lead	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Magnesium	10.2	10.4	10.5	10.6	10.4	--	10.2	9.9	9.7	9.6
Manganese	0.005	0.005	0.006	0.005	0.011	--	0.007	0.014	0.088	0.042
Mercury	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	--	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Molybdenum	0.004	0.004	0.004	0.004	0.005	--	0.005	0.004	0.004	0.004
Nickel	0.003	0.003	0.003	0.003	0.003	--	0.004	0.004	0.004	0.003
Potassium	16	16	16	16	15	--	15	15	15	14
Selenium	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	< 0.002	< 0.002
Silicon	11.2	11.1	10.3	10.2	10	--	10.2	10.1	10	9.9
Silver	< 0.00025	< 0.00025	< 0.00025	< 0.00025	< 0.00025	--	< 0.00025	< 0.00025	< 0.00025	< 0.00025
Sodium	107	106	110	114	111	--	106	108	110	103
Thallium	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Uranium	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Vanadium	0.0041	0.0041	0.004	0.0048	0.0043	--	0.0043	0.0048	0.0051	0.0045
Zinc	0.035	0.034	0.033	0.037	0.034	--	0.04	0.038	0.038	0.33
General Chemistry (mg/L)										
Ammonia as N	0.2	< 0.1	< 0.1	< 0.1	0.4	--	0.1	< 0.1	< 0.1	< 0.1
BOD	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloride	120	125	124	128	122	--	120	124	115	117
Cyanide	0.008	0.009	0.005	< 0.005	< 0.005	--	0.005	< 0.005	< 0.005	< 0.005
Cyanide, aquatic free	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	< 0.002	< 0.002
Hardness	154	153	153	154	150	--	147	146	147	147
Nitrate as N	6.2	8.1	9.6	11.6	13.2	--	12.5	10.4	9.3	9.8
Nitrite as N	0.12	0.12	0.15	0.13	0.14	--	0.11	0.1	0.02	< 0.02
Sulfate	58	60	60	60	59	--	57	57	54	57
Total Dissolved Solids	598	540	536	--	528	--	534	508	508	530
Total Dissolved Solids, Fixed	526	434	484	--	496	--	488	468	440	480
Total Organic Carbon	4.3	4.4	4.6	4.6	4.8	4.9	5.1	4.8	4.7	4.6
Total Suspended Solids	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
VOCs (ug/L)										
Bromodichloromethane	--	--	--	--	--	--	18	17	--	32
Bromoform	--	--	--	--	--	--	< 1	< 1	--	< 1
Chloroform	--	--	--	--	--	--	47	46	--	89
Dibromochloromethane	--	--	--	--	--	--	4	4	--	7
All VOC analytes	--	--	--	--	--	--	ND	ND	--	ND
SVOCs (ug/L)										
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	< 2	< 2	--	< 2
Diethyl phthalate	--	--	--	--	--	--	< 2	< 2	--	< 2
All other SVOC analytes	--	--	--	--	--	--	ND	ND	--	ND

Table A-6
2014 Additional Sampling Influent and Effluent Results
Local Limits Study

	RP-5 Influent									
Parameters	9/9/2014	9/10/2014	9/11/2014	9/12/2014	9/13/2014	9/14/2014	9/15/2014	9/16/2014	9/17/2014	9/18/2014
Metals (mg/L)										
Aluminum	0.25	0.42	0.47	0.7	0.41	--	0.52	0.46	0.2	0.2
Antimony	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	--	< 0.02	< 0.02	< 0.02	< 0.02
Arsenic	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Barium	0.06	0.07	0.07	0.08	0.07	--	0.07	0.07	0.06	0.06
Beryllium	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Boron	0.3	0.3	0.2	0.2	0.2	--	0.3	0.3	0.2	0.3
Cadmium	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Calcium	60	60	61	62	63	--	56	58	55	54
Chromium	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Cobalt	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Copper	0.05	0.07	0.07	0.08	0.06	--	0.06	0.06	0.05	0.04
Iron	0.25	0.42	0.4	0.62	0.34	--	0.4	0.35	0.2	0.18
Lead	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	--	< 0.02	< 0.02	< 0.02	< 0.02
Magnesium	11.9	12.4	12	12.2	12	--	12	11.9	11.8	11.4
Manganese	0.02	0.02	0.03	0.04	0.02	--	0.03	0.02	< 0.02	0.02
Mercury	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Molybdenum	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Nickel	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Potassium	15	15	15	15	15	--	14	14	14	14
Selenium	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	--	< 0.02	< 0.02	< 0.02	< 0.02
Silicon	10.4	10.9	10.5	10.7	10.4	--	10.6	10.4	10	10.1
Silver	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Sodium	90	83	83	83	90	--	80	82	83	81
Thallium	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	--	< 0.05	< 0.05	< 0.05	< 0.05
Uranium	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	--	--	--	--
Zinc	0.12	0.18	0.15	0.2	0.14	--	0.15	0.16	0.08	0.08
General Chemistry (mg/L)										
Ammonia as N	46.4	35.3	33.1	32.2	35.5	--	33.6	45	32.9	31.4
BOD	212	278	303	345	286	--	285	279	166	178
Chloride	130	114	113	110	118	--	107	109	105	107
Cyanide	< 0.005	0.016	0.009	0.014	0.016	--	0.01	0.007	< 0.005	0.005
Cyanide, aquatic free	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	0.002	< 0.002	< 0.002	< 0.002
Hardness	199	201	202	205	207	--	189	194	186	182
Nitrate as N	< 0.1	< 0.1	< 0.1	< 0.1	0.4	--	< 0.1	< 0.1	< 0.1	< 0.1
Nitrite as N	0.19	0.15	0.14	0.14	0.15	--	0.13	0.15	0.03	< 0.02
Sulfate	43	42	43	45	38	--	40	41	40	42
Total Dissolved Solids	568	476	486	--	492	--	498	486	474	470
Total Dissolved Solids, Fixed	452	390	404	--	434	--	428	414	408	398
Total Organic Carbon	117	152	165	187	156	--	156	152	94	100
Total Suspended Solids	159	269	246	61	248	--	360	237	61	89
VOCs (ug/L)										
Bromodichloromethane	--	--	--	--	--	--	< 10	< 10	--	< 10
Bromoform	--	--	--	--	--	--	< 10	< 10	--	< 10
Chloroform	--	--	--	--	--	--	< 10	< 10	--	< 10
Dibromochloromethane	--	--	--	--	--	--	< 10	< 10	--	< 10
All VOC analytes	--	--	--	--	--	--	ND	ND	--	ND
SVOCs (ug/L)										
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	17	11	--	< 10
Diethyl phthalate	--	--	--	--	--	--	< 10	< 10	--	< 10
All other SVOC analytes	--	--	--	--	--	--	ND	ND	--	ND

Table A-6
2014 Additional Sampling Influent and Effluent Results
Local Limits Study

	RP-5 Effluent									
Parameters	9/9/2014	9/10/2014	9/11/2014	9/12/2014	9/13/2014	9/14/2014	9/15/2014	9/16/2014	9/17/2014	9/18/2014
Metals (mg/L)										
Aluminum	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	--	< 0.025	< 0.025	< 0.025	< 0.025
Antimony	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Arsenic	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	< 0.002	< 0.002
Barium	0.017	0.017	0.016	0.016	0.016	--	0.015	0.014	0.015	0.014
Beryllium	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Boron	0.3	0.3	0.3	0.3	0.3	--	0.3	0.3	0.3	0.3
Cadmium	< 0.00025	< 0.00025	< 0.00025	< 0.00025	< 0.00025	--	< 0.00025	< 0.00025	< 0.00025	< 0.00025
Calcium	56	57	57	57	56	--	56	55	55	54
Chromium	0.0009	0.001	0.0008	0.0008	0.0008	--	0.0007	0.0008	0.0007	0.0007
Cobalt	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.0055	0.0054	0.0042	0.0044	0.0049	--	0.0049	0.005	0.0051	0.0052
Iron	0.042	0.038	0.039	0.052	0.054	--	0.047	0.04	0.039	0.036
Lead	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Magnesium	11.8	11.9	11.6	11.9	11.4	--	11.9	11.8	11.5	12
Manganese	0.024	0.033	0.032	0.029	0.028	--	0.036	0.03	0.031	0.028
Mercury	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	--	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Molybdenum	0.005	0.004	0.004	0.003	0.004	--	0.003	0.004	0.004	0.004
Nickel	0.003	0.003	0.002	0.003	0.003	--	0.003	0.003	0.003	0.003
Potassium	15	15	15	15	15	--	15	15	15	15
Selenium	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	< 0.002	< 0.002
Silicon	9.9	10	9.3	9.5	9	--	9.3	9.4	9	9.4
Silver	< 0.00025	< 0.00025	< 0.00025	< 0.00025	< 0.00025	--	< 0.00025	< 0.00025	< 0.00025	< 0.00025
Sodium	100	100	101	102	100	--	104	103	103	103
Thallium	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Uranium	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Vanadium	0.0024	0.0031	0.0025	0.0028	0.0028	--	0.003	0.0028	0.0029	0.0028
Zinc	0.023	0.024	0.022	0.024	0.025	--	0.025	0.022	0.023	0.023
General Chemistry (mg/L)										
Ammonia as N	0.2	0.1	0.1	< 0.1	< 0.1	--	< 0.1	0.4	< 0.1	< 0.1
BOD	< 2	< 2	< 2	< 2	< 2	--	< 2	< 2	< 2	--
Chloride	151	154	152	151	148	--	151	154	147	157
Cyanide	< 0.005	< 0.005	< 0.005	< 0.005	0.006	--	< 0.005	< 0.005	< 0.005	< 0.005
Cyanide, aquatic free	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	< 0.002	< 0.002
Hardness	188	191	190	191	187	--	189	186	185	184
Nitrate as N	5.2	5.2	6.2	6.4	6.5	--	5.7	6.1	5.6	6.1
Nitrite as N	0.16	0.14	0.13	0.14	0.14	--	0.15	0.14	< 0.02	< 0.02
Sulfate	45	43	43	42	43	--	40	42	40	42
Total Dissolved Solids	560	534	520	--	546	--	524	530	548	524
Total Dissolved Solids, Fixed	430	492	464	--	508	--	502	490	500	478
Total Organic Carbon	4	4.2	4.1	4.1	4.1	--	4.2	4.6	4.1	4.1
Total Suspended Solids	< 2	< 2	< 2	< 2	< 2	--	< 2	< 2	< 2	< 2
VOCs (ug/L)										
Bromodichloromethane	--	--	--	--	--	--	28	27	--	28
Bromoform	--	--	--	--	--	--	< 1	< 1	--	< 1
Chloroform	--	--	--	--	--	--	40	39	--	39
Dibromochloromethane	--	--	--	--	--	--	10	11	--	11
All VOC analytes	--	--	--	--	--	--	ND	ND	--	ND
SVOCs (ug/L)										
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--
Diethyl phthalate	--	--	--	--	--	--	< 2	< 2	--	< 2
All other SVOC analytes	--	--	--	--	--	--	ND	ND	--	ND

Table A-6
2014 Additional Sampling Influent and Effluent Results
Local Limits Study

Parameters	RP-5 Effluent		
	10/7/2014	10/8/2014	10/9/2014
Metals (mg/L)			
Aluminum	--	--	--
Antimony	--	--	--
Arsenic	--	--	--
Barium	--	--	--
Beryllium	--	--	--
Boron	--	--	--
Cadmium	--	--	--
Calcium	--	--	--
Chromium	--	--	--
Cobalt	--	--	--
Copper	--	--	--
Iron	--	--	--
Lead	--	--	--
Magnesium	--	--	--
Manganese	--	--	--
Mercury	--	--	--
Molybdenum	--	--	--
Nickel	--	--	--
Potassium	--	--	--
Selenium	--	--	--
Silicon	--	--	--
Silver	--	--	--
Sodium	--	--	--
Thallium	--	--	--
Uranium	--	--	--
Vanadium	--	--	--
Zinc	--	--	--
General Chemistry (mg/L)			
Ammonia as N	--	--	--
BOD	--	--	--
Chloride	--	--	--
Cyanide	--	--	--
Cyanide, aquatic free	--	--	--
Hardness	--	--	--
Nitrate as N	--	--	--
Nitrite as N	--	--	--
Sulfate	--	--	--
Total Dissolved Solids	--	--	--
Total Dissolved Solids, Fixed	--	--	--
Total Organic Carbon	--	--	--
Total Suspended Solids	--	--	--
VOCs (ug/L)			
Bromodichloromethane	--	--	--
Bromoform	--	--	--
Chloroform	--	--	--
Dibromochloromethane	--	--	--
All VOC analytes	--	--	--
SVOCs (ug/L)			
Bis(2-ethylhexyl)phthalate	< 2	< 2	< 2
Diethyl phthalate	--	--	--
All other SVOC analytes	--	--	--

Table A-6
2014 Additional Sampling Influent and Effluent Results
Local Limits Study

	CCWRF Influent									
Parameters	9/9/2014	9/10/2014	9/11/2014	9/12/2014	9/13/2014	9/14/2014	9/15/2014	9/16/2014	9/17/2014	9/18/2014
Metals (mg/L)										
Aluminum	0.64	0.75	0.73	0.81	0.84	--	0.77	0.78	0.73	0.71
Antimony	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	--	< 0.02	< 0.02	< 0.02	< 0.02
Arsenic	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Barium	0.07	0.08	0.08	0.08	0.1	--	0.07	0.08	0.08	0.07
Beryllium	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Boron	0.4	0.4	0.3	0.3	0.3	--	0.3	0.3	0.3	0.4
Cadmium	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Calcium	55	59	57	58	56	--	54	58	53	53
Chromium	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Cobalt	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Copper	0.06	0.06	0.05	0.06	0.06	--	0.06	0.08	0.06	0.06
Iron	0.79	0.82	0.71	0.67	0.69	--	0.67	0.85	0.73	0.67
Lead	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	--	< 0.02	< 0.02	< 0.02	< 0.02
Magnesium	13.3	13.6	12.7	13.6	14.6	--	13.2	13.2	12.8	13
Manganese	0.04	0.04	0.03	0.03	0.03	--	0.03	0.03	0.03	0.04
Mercury	0.0008	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Molybdenum	0.03	0.05	< 0.01	< 0.01	0.04	--	0.08	0.06	0.05	0.04
Nickel	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Potassium	18	18	16	18	18	--	15	18	18	19
Selenium	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	--	< 0.02	< 0.02	< 0.02	< 0.02
Silicon	9.5	9.6	8.8	8.8	9	--	9.2	9.1	8.7	9.7
Silver	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--	< 0.01	< 0.01	< 0.01	< 0.01
Sodium	112	114	109	110	112	--	107	111	110	112
Thallium	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	--	< 0.05	< 0.05	< 0.05	< 0.05
Uranium	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	--	--	--	--
Zinc	0.21	0.24	0.27	0.21	0.22	--	0.24	0.21	0.19	0.19
General Chemistry (mg/L)										
Ammonia as N	49.5	33.8	31.5	31.1	26.5	--	31.5	35.8	29	29.5
BOD	416	383	372	400	384	--	338	406	457	379
Chloride	138	128	131	147	132	--	128	145	122	130
Cyanide	< 0.005	0.011	0.006	0.011	0.01	--	0.011	0.017	0.01	0.005
Cyanide, aquatic free	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	< 0.002	< 0.002
Hardness	192	203	195	201	200	--	189	199	185	186
Nitrate as N	< 0.1	0.1	0.2	< 0.1	< 0.1	--	< 0.1	< 0.1	< 0.1	< 0.1
Nitrite as N	0.19	0.15	0.15	0.17	0.18	--	0.13	0.16	< 0.02	< 0.02
Sulfate	68	66	67	69	62	--	184	69	67	73
Total Dissolved Solids	718	632	564	--	602	--	566	592	644	584
Total Dissolved Solids, Fixed	534	486	474	--	486	--	484	496	496	460
Total Organic Carbon	224	207	201	215	207	--	183	219	245	205
Total Suspended Solids	338	425	290	197	310	--	286	323	361	306
VOCs (ug/L)										
Bromodichloromethane	--	--	--	--	--	--	< 10	< 10	--	< 10
Bromoform	--	--	--	--	--	--	< 10	< 10	--	< 10
Chloroform	--	--	--	--	--	--	< 10	< 10	--	< 10
Dibromochloromethane	--	--	--	--	--	--	< 10	< 10	--	< 10
All VOC analytes	--	--	--	--	--	--	ND	ND	--	ND
SVOCs (ug/L)										
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	18	< 10	--	< 10
Diethyl phthalate	--	--	--	--	--	--	< 10	< 10	--	< 10
All other SVOC analytes	--	--	--	--	--	--	ND	ND	--	ND

Table A-6
2014 Additional Sampling Influent and Effluent Results
Local Limits Study

	CCWRF Effluent									
Parameters	9/9/2014	9/10/2014	9/11/2014	9/12/2014	9/13/2014	9/14/2014	9/15/2014	9/16/2014	9/17/2014	9/18/2014
Metals (mg/L)										
Aluminum	0.033	0.036	0.039	0.034	0.033	--	0.036	0.044	0.037	0.043
Antimony	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Arsenic	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	< 0.002	< 0.002
Barium	0.014	0.014	0.015	0.014	0.014	--	0.016	0.015	0.015	0.015
Beryllium	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Boron	0.3	0.3	0.3	0.3	0.3	--	0.3	0.3	0.3	0.3
Cadmium	< 0.00025	< 0.00025	< 0.00025	< 0.00025	< 0.00025	--	< 0.00025	< 0.00025	< 0.00025	< 0.00025
Calcium	47	47	47	46	46	--	45	45	44	45
Chromium	0.0012	0.0016	0.0017	0.0015	0.0016	--	0.0015	0.0022	0.0024	0.0021
Cobalt	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.0087	0.0124	0.0143	0.0125	0.0128	--	0.0124	0.0141	0.0126	0.012
Iron	0.039	0.042	0.04	0.037	0.035	--	0.04	0.042	0.04	0.044
Lead	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Magnesium	11.9	12	12	11.4	11.7	--	12	11.6	11.4	11.1
Manganese	0.002	0.002	0.002	0.002	0.001	--	0.002	0.002	0.001	0.001
Mercury	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	--	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Molybdenum	0.050	0.044	0.040	0.020	0.014	--	0.04	0.058	0.060	0.052
Nickel	0.003	0.003	0.003	0.003	0.003	--	0.003	0.003	0.003	0.003
Potassium	16	16	16	15	15	--	15	15	15	15
Selenium	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	< 0.002	< 0.002
Silicon	7.9	7.8	7.5	7.3	7.2	--	7.4	7.2	7.1	7
Silver	< 0.00025	< 0.00025	< 0.00025	< 0.00025	< 0.00025	--	< 0.00025	< 0.00025	< 0.00025	< 0.00025
Sodium	128	129	130	126	127	--	126	126	127	133
Thallium	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Uranium	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	< 0.001
Vanadium	0.0035	0.0034	0.0036	0.0033	0.0036	--	0.004	0.0041	0.0038	0.0033
Zinc	0.038	0.036	0.037	0.037	0.037	--	0.038	0.037	0.034	0.03
General Chemistry (mg/L)										
Ammonia as N	0.4	< 0.1	0.1	< 0.1	0.1	--	< 0.1	0.1	< 0.1	0.1
BOD	< 2	< 2	< 2	< 2	< 2	--	< 2	< 2	< 2	< 2
Chloride	157	160	159	158	155	--	152	155	150	157
Cyanide	< 0.005	< 0.005	0.005	< 0.005	< 0.005	--	0.006	0.005	< 0.005	< 0.005
Cyanide, aquatic free	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	< 0.002	< 0.002	< 0.002	< 0.002
Hardness	166	167	167	162	163	--	162	160	157	158
Nitrate as N	5	5.4	5.1	4.9	3.9	--	5.3	4.7	3.7	3.4
Nitrite as N	0.22	0.13	0.19	0.19	0.19	--	0.19	0.21	0.03	< 0.02
Sulfate	102	104	104	103	101	--	91	102	98	108
Total Dissolved Solids	574	626	572	568	584	--	562	556	586	--
Total Dissolved Solids, Fixed	540	584	550	534	560	--	524	512	558	--
Total Organic Carbon	4.5	4.6	4.7	4.5	4.6	--	4.8	4.9	4.9	4.8
Total Suspended Solids	< 2	< 2	3	< 2	< 2	--	< 2	2	< 2	< 2
VOCs (ug/L)										
Bromodichloromethane	--	--	--	--	--	--	36	34	--	47
Bromoform	--	--	--	--	--	--	6	12	--	23
Chloroform	--	--	--	--	--	--	26	18	--	19
Dibromochloromethane	--	--	--	--	--	--	29	38	--	47
All VOC analytes	--	--	--	--	--	--	ND	ND	--	ND
SVOCs (ug/L)										
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	< 2	< 2	--	< 2
Diethyl phthalate	--	--	--	--	--	--	7	< 2	--	< 2
All other SVOC analytes	--	--	--	--	--	--	ND	ND	--	ND

Notes:
mg/L = milligrams per liter; ug/L = micrograms per liter; VOCs = volatile organic compounds;
SVOCs = semivolatile organic compounds; "--" = not sampled;
"<" = Analyte not detected above listed reporting limit; ND = not detected
Hardness calculated based on calcium and magnesium concentrations

Table A-7
2014 Additional Sampling Primary Sludge Results
Local Limits Report

	RP-1			RP-4			RP-5			CCWRF		
Parameters	9/9/2014	9/10/2014	9/11/2014	9/9/2014	9/10/2014	9/11/2014	9/9/2014	9/10/2014	9/11/2014	9/9/2014	9/10/2014	9/11/2014
Metals (mg/L)												
Aluminum	38.6	22.9	17.4	7.92	28	30	0.73	0.22	0.7	22.9	52.2	24.9
Antimony	< 0.20	< 0.10	< 0.10	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Arsenic	< 0.10	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Barium	2.3	1.58	0.92	0.53	1.51	1.16	0.08	0.06	0.1	1.02	2.51	1.49
Beryllium	< 0.10	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Boron	< 1.0	< 0.5	< 0.5	< 0.1	0.1	< 0.1	0.3	0.3	0.2	0.1	0.2	< 0.1
Cadmium	< 0.10	< 0.05	< 0.05	< 0.01	0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01
Calcium	744	265	179	83	258	158	65	64	70	150	381	218
Chromium	0.42	0.17	0.1	0.12	0.27	0.3	< 0.01	< 0.01	< 0.01	0.29	0.44	0.25
Cobalt	< 0.10	< 0.05	< 0.05	< 0.01	0.01	0.02	< 0.01	< 0.01	< 0.01	0.02	0.03	0.01
Copper	4.54	2.51	0.91	0.89	1.93	2.56	0.06	0.04	0.07	3.02	12.1	4.53
Iron	331	126	88.4	48.5	135	80.1	7.15	4.3	9.86	58.9	147	49.5
Lead	< 0.20	0.14	< 0.10	0.04	0.26	0.24	< 0.02	< 0.02	< 0.02	0.16	0.82	0.39
Magnesium	45.8	30.8	21.6	8.9	23.9	15.4	13.3	13.8	13.8	18.8	32.4	17.9
Manganese	2.29	0.79	0.54	0.18	0.54	0.37	0.07	0.06	0.08	0.44	0.81	0.39
Mercury	0.0061	< 0.0040	< 0.0040	0.0046	0.007	0.013	< 0.0005	< 0.0005	< 0.0005	0.029	0.04	0.018
Molybdenum	0.11	0.09	< 0.05	0.03	0.09	0.12	< 0.01	< 0.01	0.01	0.19	0.28	0.09
Nickel	0.3	0.08	0.05	0.03	0.08	0.1	< 0.01	< 0.01	< 0.01	0.21	0.66	0.2
Potassium	29	32	24	7	17	12	17	16	16	12	25	12
Selenium	< 0.20	< 0.10	< 0.10	< 0.02	0.02	0.06	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Silicon	68.1	35	29.5	8.2	23.1	22.1	10.9	10.8	10.9	17.2	25.8	18.2
Silver	< 0.10	< 0.05	< 0.05	< 0.01	0.07	0.03	< 0.01	< 0.01	< 0.01	0.07	0.03	0.05
Sodium	114	130	119	24	52	27	98	100	99	39	48	35
Thallium	< 0.50	< 0.25	< 0.25	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Zinc	6.89	6.75	2.47	1.76	5.7	3.66	0.21	0.09	0.18	2.96	7.37	6.17
Solids												
Total Solids (%)	0.5	0.9	0.6	1.2	3.2	2.8	< 0.1	< 0.1	0.1	1.4	3	1.9

Notes:
mg/L = milligrams per liter; % = percent
"<" = Analyte not detected above listed reporting limit

Table A-8
2014 Additional Sampling SIU Results
Local Limits Report

	American Beef Packers			Envision Plastics			Jewlland-Freya			Scott Brother Dairy			Wing Lee Farms		
Parameters	9/9/2014	9/10/2014	9/11/2014	9/9/2014	9/10/2014	9/11/2014	9/9/2014	9/10/2014	9/11/2014	9/9/2014	9/10/2014	9/11/2014	9/10/2014	9/11/2014	9/16/2014
Metals (mg/L)															
Aluminum	0.4	0.38	0.15	8.19	23.6	18.8	0.1	0.11	0.15	3	1.41	1.43	0.17	0.2	0.19
Antimony	< 0.04	< 0.04	< 0.02	< 0.02	< 0.04	< 0.04	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Arsenic	< 0.02	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Barium	0.07	0.07	0.05	0.14	0.27	0.22	0.05	0.06	0.05	0.02	0.02	0.04	0.04	0.04	0.04
Beryllium	< 0.02	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Boron	0.3	0.3	0.2	0.5	0.4	0.5	< 0.1	< 0.1	< 0.1	0.2	0.2	0.2	0.2	0.2	0.2
Cadmium	< 0.02	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Calcium	45	42	32	97	134	144	62	77	67	23	32	43	46	50	46
Chromium	< 0.02	< 0.02	< 0.01	0.02	0.05	0.04	< 0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cobalt	< 0.02	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Copper	< 0.04	< 0.04	< 0.02	0.12	0.24	0.16	0.12	0.13	0.14	< 0.02	< 0.02	< 0.02	0.2	0.18	0.18
Iron	1.75	1.34	0.65	6.68	12.8	9.76	0.35	0.42	0.56	< 0.15	< 0.15	< 0.15	0.8	0.82	0.64
Lead	< 0.04	< 0.04	< 0.02	0.06	0.11	0.06	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Magnesium	17.2	18.2	13	14.9	17.1	16.9	10.6	26	17.4	7.3	9.8	11.6	16.3	17.4	15.9
Mercury	< 0.0010	< 0.0010	< 0.0005	0.001	0.0015	0.0011	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0010	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Molybdenum	< 0.02	< 0.02	< 0.01	0.01	< 0.02	0.02	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel	< 0.02	< 0.02	< 0.01	0.02	0.03	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Potassium	54	49	28	17	18	22	5	8	5	55	71	58	65	77	66
Selenium	< 0.04	< 0.04	< 0.02	< 0.02	< 0.04	< 0.04	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Silicon	10.3	11.9	9.2	10.7	15.4	15.8	11.4	12.8	11.7	5.8	6	6	8.4	8	7.9
Silver	< 0.02	< 0.01	< 0.01	< 0.01	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sodium	190	191	136	62	60	75	64	94	108	207	196	190	95	106	96
Thallium	< 0.10	< 0.10	< 0.05	< 0.05	< 0.10	< 0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Zinc	0.13	0.12	0.13	0.39	0.9	0.74	0.2	0.52	0.74	0.06	0.05	0.06	0.15	0.16	0.14
General Chemistry (mg/L)															
BOD_5	1260	1100	330	368	712	930	163	315	425	1680	≥ 2080	≥ 1990	1220	1360	795
Chloride	164	157	128	132	125	135	85	91	102	158	154	133	160	167	162
Cyanide	0.047	0.017	0.005	0.007	< 0.010	0.006	0.008	0.007	0.008	< 0.005	< 0.005	0.011	< 0.005	0.008	0.022
Cyanide, Aquatic Free	0.005	0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.006	< 0.002
Ammonia as N	57.9	56.4	42.6	2.2	0.9	0.9	0.3	0.2	0.4	1.1	1.2	0.6	45.5	43	34.6
Nitrite as N	0.41	0.11	2.71	< 0.02	< 0.02	0.49	3.31	< 0.02	0.35	0.56	0.28	1.6	0.12	0.4	0.37
Nitrate as N	2.5	< 0.1	0.9	1	< 0.1	0.1	0.4	< 0.1	2.3	3.6	< 0.1	1	< 0.1	0.1	0.5
Sulfate	60	54	54	51	36	40	91	72	66	85	81	78	57	64	59
TDS	1220	975	715	626	644	776	478	658	634	1640	1830	1670	860	868	826
TDS Fixed	695	615	555	462	452	538	364	526	512	875	1270	1150	580	574	570
TSS	480	440	186	572	1550	1240	114	98	144	126	193	280	498	592	304

Notes:
mg/L = milligrams per liter; BOD_5 = five-day biochemical oxygen demand; TDS = total dissolved solids; TSS = total suspended solids
"<" = Analyte not detected above listed reporting limit

ARCADIS

Appendix B

POC Screening Methodology and Tables

Table B-1
NPDES Effluent Limitations
Local Limits Report

	DP001/DP002			DP003			DP004			DP005, DP006, DP007, DP008	
Parameter	**Avg monthly**	**Avg weekly**	**Max daily**	**Avg monthly**	**Avg weekly**	**Max daily**	**Avg monthly**	**Avg weekly**	**Max daily**	**Avg monthly**	**Avg weekly**
Inorganics (ug/L)											
Selenium	4.1	–	8.2	–	–	–	–	–	–	–	–
Volatile Organics (ug/L)											
Bromodichloromethane	–	–	–	46	–	92	–	–	–	–	–
Semivolatile Organics (ug/L)											
Bis(2-ethylhexyl)phthalate	5.9	–	11.9	–	–	–	5.9	–	11.9	–	–
General Chemistry Parameters											
Ammonia as N (mg/L)	4.5	–	–	4.5	–	–	4.5	–	–	–	–
BOD_5 (mg/L)	20	30	–	20	30	–	20	30	–	20	30
Cyanide, Free (ug/L)	4.2	–	8.5	4.6	–	7.3	4.3	–	8.5	–	–
Total Inorganic Nitrogen (mg/L)	8.0	–	–	8.0	–	–	8.0	–	–	–	–
TDS (mg/L)	550	–	–	550	–	–	550	–	–	550	–
TSS (mg/L)	20	30	–	20	30	–	20	30	–	20	30

Notes:
Based on NPDES permit # CA8000409
ug/L = micrograms per liter; mg/L = milligrams per liter; Avg = Average; Max = Maximum
BOD_5 = 5-Day Biochemical Oxygen Demand; TDS = Total Dissolved Solids; TSS = Total Suspended Solids
Total Inorganic Nitrogen = Total Kjeldahl Nitrogen + Nitrate + Nitrite

Total Inorganic Nitrogen (TIN) and TDS limits are based on 12-month flow-weighted, running averages; mass emission rate for TIN is 5,339 lb/day and TDS is 366,960 lb/day
Total Residual Chlorine has an instantaneous maximum effluent limitation of 0.1 mg/L
Total Coliform Limits are: weekly average not to exceed 2.2 Most Probable Number (MPN)/100 milliliters (ml); any one sample in 30-day period not to exceed 23 MPN/100 ml; and daily max not to exceed 240 MPN/100 ml
Effluent pH range should be within 6.5 to 8.5 standard units
TDS limit for DP005 through DP008 is based on demonstration of maximum benefits (Section IV.C.1.b).

Outfall Descriptions:
DP001 = Tertiary treated effluent from RP-1
DP002 = Tertiary treated effluent from RP-1 and RP-4
DP003 = Tertiary treated effluent from RP-5
DP004 = Tertiary treated effluent from CCWRF
DP005 = Recycled water from RP-1
DP006 = Recycled water from RP-4
DP007 = Recycled water from RP-5
DP008 = Recycled water from CCWRF

Table B-2
Beneficial Uses for Discharge Locations
Local Limits Report

Discharge Point	Effluent Description	Receiving Water	Beneficial Uses
DP001	Tertiary treated effluent from RP-1	Prado Park Lake, overflow from lake to unnamed creek, then to Reach 1A of Chino Creek	REC-1; REC-2; warm freshwater habitat; WILD; and rare, threatened and endangered species
		Reach 3 of Santa Ana River within Prado Basin Area	Agricultural supply; groundwater recharge; REC-1; REC-2; warm freshwater habitat; WILD; and rare, threatened or endangered species
		Chino North "Max Benefit" GMZ/Chino 1, 2, and 3 "antidegradation" GMZs	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
		Orange GMZ (affected GMZ downstream of discharge points)	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
DP002	Tertiary treated effluent from RP-1 & RP-4	Reach 1 of Cucamonga Creek, then to Mill Creek, then to Reach 1A of Chino Creek	Groundwater recharge; REC-1; REC-2; limited warm freshwater habitat; WILD
		Reach 3 of Santa Ana River within Prado Basin Area	Agricultural supply; groundwater recharge; REC-1; REC-2; warm freshwater habitat; WILD; and rare, threatened or endangered species
		Chino North "Max Benefit" GMZ/Chino 1, 2, and 3 "antidegradation" GMZs	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
		Orange GMZ (affected GMZ downstream of discharge points)	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
DP003	Tertiary treated effluent from RP-5	Reach 1B of Chino Creek	REC-1; REC-2; warm freshwater habitat; WILD; and rare, threatened and endangered species
		Reach 3 of Santa Ana River within Prado Basin Area	Agricultural supply; groundwater recharge; REC-1; REC-2; warm freshwater habitat; WILD; and rare, threatened or endangered species
		Chino North "Max Benefit" GMZ/Chino 1, 2, and 3 "antidegradation" GMZs	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
		Orange GMZ (affected GMZ downstream of discharge points)	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply

Table B-2
Beneficial Uses for Discharge Locations
Local Limits Report

Discharge Point	Effluent Description	Receiving Water	Beneficial Uses
DP004	Tertiary treated effluent from CCWRF	Reach 2 of Chino Creek	Groundwater recharge; REC-1; REC-2; cold freshwater habitat; WILD
		Reach 3 of Santa Ana River within Prado Basin Area	Agricultural supply; groundwater recharge; REC-1; REC-2; warm freshwater habitat; WILD; and rare, threatened or endangered species
		Chino North "Max Benefit" GMZ/Chino 1, 2, and 3 "antidegradation" GMZs	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
		Orange GMZ (affected GMZ downstream of discharge points)	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
DP005	Recycled water from RP-1	Chino North "Max Benefit" GMZ/Chino 1, 2, and 3 "antidegradation" GMZs	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
		Orange GMZ (affected GMZ downstream of discharge points)	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
DP006	Recycled water from RP-4	Chino North "Max Benefit" GMZ/Chino 1, 2, and 3 "antidegradation" GMZs	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
		Orange GMZ (affected GMZ downstream of discharge points)	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
DP007	Recycled water from RP-5	Chino North "Max Benefit" GMZ/Chino 1, 2, and 3 "antidegradation" GMZs	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
		Orange GMZ (affected GMZ downstream of discharge points)	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
DP008	Recycled water from CCWRF	Chino North "Max Benefit" GMZ/Chino 1, 2, and 3 "antidegradation" GMZs	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
		Orange GMZ (affected GMZ downstream of discharge points)	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply

Table B-2
Beneficial Uses for Discharge Locations
Local Limits Report

Discharge Point	Effluent Description	Receiving Water	Beneficial Uses
S-001 & S-002	Stormwater from RP-1	Chino North "Max Benefit" GMZ/Chino 1, 2, and 3 "antidegradation" GMZs	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply
		Orange GMZ (affected GMZ downstream of discharge points)	Municipal and domestic supply; agricultural supply; industrial services supply; and industrial process supply

Notes:
Information from NPDES permit CA8000409 and Santa Ana River Basin Water Quality Control Plan
REC-1 = Water contact recreation
REC-2 = Non-contact water recreation
WILD = wildlife habitat
GMZ = groundwater management zone

Table B-3
Basin Plan Effluent Limits
Local Limits Report

Parameter	REC-1	REC-2	Cold freshwater habitat	Warm freshwater habitat	Inland surface waters	Irrigation Uses	MUN	Industrial	Reach 1 of Cucamonga Creek	Reach 1A of Chino Creek	Reach 1B of Chino Creek	Reach 2 of Chino Creek
Inorganics (mg/L)												
Arsenic	–	–	–	–	–	–	0.05	–	–	–	–	–
Barium	–	–	–	–	–	–	1	–	–	–	–	–
Boron	–	–	–	–	0.75	–	–	–	–	–	–	–
Cadmium	–	–	–	–	–	–	0.01	–	****	0.0017	0.0017	0.004
Chromium	–	–	–	–	–	–	0.05	–	–	–	–	–
Cobalt	–	–	–	–	–	–	0.2	–	–	–	–	–
Copper	–	–	–	–	–	–	1.0	–	****	0.0182	0.0182	0.037
Iron	–	–	–	–	–	–	0.3	–	–	–	–	–
Lead	–	–	–	–	–	–	0.05	–	****	0.0041	0.0041	0.028
Manganese	–	–	–	–	–	–	0.05	–	–	–	–	–
Mercury	–	–	–	–	–	–	0.002	–	–	–	–	–
Selenium	–	–	–	–	–	–	0.01	–	–	–	–	–
Silver	–	–	–	–	–	–	0.05	–	–	–	–	–
Sodium	–	–	–	–	–	–	180	–	–	110	75	–
General Chemistry Parameters (mg/L)												
Fecal coliform (CFU/100 ml)	200/400*	2000/4000*	–	–	–	–	–	–	–	–	–	–
Total coliform (CFU/100 ml)	–	–	–	–	–	–	2.2	–	–	–	–	–
Un-ionized Ammonia	–	–	–	–	–	–	–	–	–	0.098	0.098	0.098
Ammonia	–	–	**	**	–	–	–	–	–	–	–	–
Chloride	–	–	–	–	–	175	500	–	–	140	75	–
Chemical Oxygen Demand	–	–	–	–	–	–	–	–	–	30	15	–
Cyanide	–	–	–	–	–	–	0.2	–	–	–	–	–
Dissolved Oxygen	–	–	–	5	–	–	–	–	–	–	–	–
Fluoride	–	–	–	–	–	–	1.0***	–	–	–	–	–
Hardness	–	–	–	–	–	–	–	50	–	350	240	–
MBAS	–	–	–	–	–	–	0.05	–	–	–	–	–
Nitrate/Nitrite	–	–	–	–	–	–	10	–	–	–	–	–
Nitrate as Nitrogen	–	–	–	–	–	–	45	–	–	–	–	–
pH	–	–	–	–	6.5 - 8.5	–	6 - 9	–	–	–	–	–
Sulfate	–	–	–	–	–	–	500	–	–	150	60	–
Total Inorganic Nitrogen	–	–	–	–	–	–	–	–	–	10	8	–
Total Residual Chlorine	–	–	–	–	0.1	–	–	–	–	–	–	–
Total Dissolved Solids	–	–	–	–	–	700	–	–	–	700	550	–

Table B-3
Basin Plan Effluent Limits
Local Limits Report

Parameter	Reach 3 of Santa Ana River within Prado Basin Area	Chino North - Max Benefit	Chino 1 anti-degradation	Chino 2 anti-degradation	Chino 3 anti-degradation	Orange GMZ
Inorganics (mg/L)						
Arsenic	--	--	--	--	--	--
Barium	--	--	--	--	--	--
Boron	0.75	--	--	--	--	--
Cadmium	0.004	--	--	--	--	--
Chromium	--	--	--	--	--	--
Cobalt	--	--	--	--	--	--
Copper	0.037	--	--	--	--	--
Iron	--	--	--	--	--	--
Lead	0.028	--	--	--	--	--
Manganese	--	--	--	--	--	--
Mercury	--	--	--	--	--	--
Selenium	--	--	--	--	--	--
Silver	--	--	--	--	--	--
Sodium	110	--	--	--	--	--
General Chemistry Parameters (mg/L)						
Fecal coliform (CFU/100 ml)	--	--	--	--	--	--
Total coliform (CFU/100 ml)	--	--	--	--	--	--
Un-ionized Ammonia	0.098	--	--	--	--	--
Ammonia	--	--	--	--	--	--
Chloride	140	--	--	--	--	--
Chemical Oxygen Demand	30	--	--	--	--	--
Cyanide	--	--	--	--	--	--
Dissolved Oxygen	--	--	--	--	--	--
Fluoride	--	--	--	--	--	--
Hardness	350	--	--	--	--	--
MBAS	--	--	--	--	--	--
Nitrate/Nitrite	--	--	--	--	--	--
Nitrate as Nitrogen	--	5.0	5.0	2.9	3.5	3.4
pH	--	--	--	--	--	--
Sulfate	150	--	--	--	--	--
Total Inorganic Nitrogen	10	--	--	--	--	--
Total Residual Chlorine	--	--	--	--	--	--
Total Dissolved Solids	700	420	280	250	260	580

Notes:
mg/L = milligrams per liter; CFU/100 ml = colony forming units per 100 milliters
REC-1 = Water contact recreation; REC-2 = Non-contact water recreation; MUN = Municipal and Domestic Supply
GMZ = Groundwater Management Zone; MBAS = Methylene Blue Active Substances
* Fecal coliform limit based on five or more samples per 30 day period or not to exceed for any 30-day period
** Ammonia limit based on calculation dependent on pH and temperature
*** Fluoride limit based on calculation dependent on temperature
**** Metals limits based on calculation dependent on hardness
Cadmium, copper, and lead limits for Chino Creek based on hardness of 200 mg/L

Table B-4
Recycled Water Limits
Local Limits Report

Parameters	Recycled Water Limits
Inorganics (mg/L)	
Aluminum	0.2
Antimony	0.006
Arsenic	0.01
Barium	1.0
Beryllium	0.004
Cadmium	0.005
Chromium	0.05
Copper	1.0
Iron	0.3
Lead	0.015
Manganese	0.05
Mercury	0.002
Nickel	0.1
Selenium	0.05
Silver	0.1
Thallium	0.002
Zinc	5.0
Volatile Organics (mg/L)	
1,1,1-Trichloroethane	0.2
1,1,2,2-Tetrachloroethane	0.001
1,1,2-Trichloroethane	0.005
1,1,2-Trichlorotrifluoroethane	1.2
1,1-Dichloroethane	0.005
1,1-Dichloroethene	0.006
1,2-Dichlorobenzene	0.6
1,2-Dichloroethane	0.0005
1,2-Dichloropropane	0.005
1,3-Dichloropropene	0.0005
1,4-Dichlorobenzene	0.005
Benzene	0.001
Carbon tetrachloride	0.0005
Chlorobenzene	0.07
cis-1,2-Dichloroethene	0.006
Dibromochloropropane	0.0002
Ethylene dibromide	0.00005
Ethylbenzene	0.3
Methylene Chloride	0.005
Methyl tertiary butyl ether	0.005
Styrene	0.1
Tetrachloroethene	0.005
Toluene	0.15
Total Trihalomethanes (THMs)	0.080
trans-1,2-Dichloroethene	0.01
Trichloroethene	0.005
Trichlorofluoromethane	0.15
Vinyl chloride	0.0005
Xylenes (total)	1.750
Semivolatile Organics (mg/L)	
1,2,4-Trichlorobenzene	0.005
Benzo(a)pyrene	0.0002
Bis(2-ethylhexyl)adipate	0.4
Bis(2-ethylhexyl)phthalate	0.004
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Pentachlorophenol	0.001
2,3,7,8-TCDD (Dioxin) (ug/L)	0.00003

Table B-4
Recycled Water Limits
Local Limits Report

Parameters	Recycled Water Limits
Pesticides/PCBs/Herbicides (mg/L)	
Alachor	0.002
Atrazine	0.001
Bentazon	0.018
Carbofuran	0.018
Chlordane	0.0001
2,4-D	0.07
Dalapon	0.2
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Endrin	0.002
Glyphosate	0.7
Heptachlor	0.00001
Heptachlor epoxide	0.00001
Lindane	0.0002
Methoxychlor	0.03
Molinate	0.02
Oxamyl	0.05
Picloram	0.5
Polychlorinated biphenyls	0.0005
Simazine	0.004
Thiobencarb	0.001
Toxaphene	0.003
2,4,5-TP (Silvex)	0.05
General Chemistry Parameters (mg/L)	
Cyanide, Total	0.15
Fluoride	2.0
Methylene blue active substances (MBAS)	0.5

Notes:
Based on Order No. R8-2007-0039, Chino Basin Recyled Water Groundwater Recharge Program
mg/L = milligram per liter; ug/L = micrograms per liter
Total THMs = bromoform, bromodichloromethane, dibromochloromethane, and chloroform
PCBs = Polychorimated biphenyls

Table B-5
Effluent Limits per Outfall Location
Local Limits Report

Parameter	DP001 NPDES Limit	DP001 Basin Plan Limits	DP001 Recycled Limits	DP001 Most Stringent	DP002 NPDES Limit	DP002 Basin Plan Limits	DP002 Recycled Limits	DP002 Most Stringent
Inorganics (mg/L)								
Aluminum	--	--	0.2	0.2	--	--	0.2	0.2
Antimony	--	--	0.006	0.006	--	--	0.006	0.006
Arsenic	--	0.05	0.01	0.01	--	0.05	0.01	0.01
Barium	--	1.0	1.0	1.0	--	1.0	1.0	1.0
Beryllium	--	--	0.004	0.004	--	--	0.004	0.004
Boron	--	0.75	--	0.75	--	0.75	--	0.75
Cadmium	--	0.0017	0.005	0.0017	--	0.0017	0.005	0.0017
Chromium	--	0.05	0.05	0.05	--	0.05	0.05	0.05
Cobalt	--	0.2	--	0.2	--	0.2	--	0.2
Copper	--	0.0182	1.0	0.0182	--	0.0182	1.0	0.0182
Iron	--	0.3	0.3	0.3	--	0.3	0.3	0.3
Lead	--	0.0041	0.015	0.0041	--	0.0041	0.015	0.0041
Manganese	--	0.05	0.05	0.05	--	0.05	0.05	0.05
Mercury	--	0.002	0.002	0.002	--	0.002	0.002	0.002
Nickel	--	--	0.1	0.1	--	--	0.1	0.1
Selenium	0.0041	0.01	0.05	0.0041	0.0041	0.01	0.05	0.0041
Silver	--	0.05	0.1	0.05	--	0.05	0.1	0.05
Sodium	--	110	--	110	--	110	--	110
Thallium	--	--	0.002	0.002	--	--	0.002	0.002
Zinc	--	--	5.0	5.0	--	--	5.0	5.0
Volatile Organics (mg/L)								
1,1,1-Trichloroethane	--	--	0.2	0.2	--	--	0.2	0.2
1,1,2,2-Tetrachloroethane	--	--	0.001	0.001	--	--	0.001	0.001
1,1,2-Trichloroethane	--	--	0.005	0.005	--	--	0.005	0.005
1,1,2-Trichlorotrifluoroethane	--	--	1.2	1.2	--	--	1.2	1.2
1,1-Dichloroethane	--	--	0.005	0.005	--	--	0.005	0.005
1,1-Dichloroethene	--	--	0.006	0.006	--	--	0.006	0.006
1,2-Dichlorobenzene	--	--	0.6	0.6	--	--	0.6	0.6
1,2-Dichloroethane	--	--	0.0005	0.0005	--	--	0.0005	0.0005
1,2-Dichloropropane	--	--	0.005	0.005	--	--	0.005	0.005
1,3-Dichloropropene	--	--	0.0005	0.0005	--	--	0.0005	0.0005
1,4-Dichlorobenzene	--	--	0.005	0.005	--	--	0.005	0.005
Benzene	--	--	0.001	0.001	--	--	0.001	0.001
Bromodichloromethane	--	--	--	--	--	--	--	--
Carbon tetrachloride	--	--	0.0005	0.0005	--	--	0.0005	0.0005
Chlorobenzene	--	--	0.07	0.07	--	--	0.07	0.07
cis-1,2-Dichloroethene	--	--	0.006	0.006	--	--	0.006	0.006
Dibromochloropropane	--	--	0.0002	0.0002	--	--	0.0002	0.0002
Ethylene dibromide	--	--	0.00005	0.00005	--	--	0.00005	0.00005
Ethylbenzene	--	--	0.3	0.3	--	--	0.3	0.3
Methylene Chloride	--	--	0.005	0.005	--	--	0.005	0.005
Methyl tertiary butyl ether	--	--	0.005	0.005	--	--	0.005	0.005
Styrene	--	--	0.1	0.1	--	--	0.1	0.1
Tetrachloroethene	--	--	0.005	0.005	--	--	0.005	0.005
Toluene	--	--	0.15	0.15	--	--	0.15	0.15
Total Trihalomethanes (THMs)	--	--	0.080	0.080	--	--	0.080	0.080
trans-1,2-Dichloroethene	--	--	0.01	0.01	--	--	0.01	0.01
Trichloroethene	--	--	0.005	0.005	--	--	0.005	0.005
Trichlorofluoromethane	--	--	0.15	0.15	--	--	0.15	0.15
Vinyl chloride	--	--	0.0005	0.0005	--	--	0.0005	0.0005
Xylenes (total)	--	--	1.750	1.750	--	--	1.750	1.750

Table B-5
Effluent Limits per Outfall Location
Local Limits Report

Parameter	DP001 NPDES Limit	DP001 Basin Plan Limits	DP001 Recycled Limits	DP001 Most Stringent	DP002 NPDES Limit	DP002 Basin Plan Limits	DP002 Recycled Limits	DP002 Most Stringent
Semivolatile Organics (mg/L)								
1,2,4-Trichlorobenzene	--	--	0.005	0.005	--	--	0.005	0.005
Benzo(a)pyrene	--	--	0.0002	0.0002	--	--	0.0002	0.0002
Bis(2-ethylhexyl)adipate	--	--	0.4	0.4	--	--	0.4	0.4
Bis(2-ethylhexyl)phthalate	0.0059	--	0.004	0.004	0.0059	--	0.004	0.004
Hexachlorobenzene	--	--	0.001	0.001	--	--	0.001	0.001
Hexachlorocyclopentadiene	--	--	0.05	0.05	--	--	0.05	0.05
Pentachlorophenol	--	--	0.001	0.001	--	--	0.001	0.001
2,3,7,8-TCDD (Dioxin) (ug/L)	--	--	0.00003	0.00003	--	--	0.00003	0.00003
Pesticides/PCBs/Herbicides (mg/L)								
Alachor	--	--	0.002	0.002	--	--	0.002	0.002
Atrazine	--	--	0.001	0.001	--	--	0.001	0.001
Bentazon	--	--	0.018	0.018	--	--	0.018	0.018
Carbofuran	--	--	0.018	0.018	--	--	0.018	0.018
Chlordane	--	--	0.0001	0.0001	--	--	0.0001	0.0001
2,4-D	--	--	0.07	0.07	--	--	0.07	0.07
Dalapon	--	--	0.2	0.2	--	--	0.2	0.2
Dinoseb	--	--	0.007	0.007	--	--	0.007	0.007
Diquat	--	--	0.02	0.02	--	--	0.02	0.02
Endothall	--	--	0.1	0.1	--	--	0.1	0.1
Endrin	--	--	0.002	0.002	--	--	0.002	0.002
Glyphosate	--	--	0.7	0.7	--	--	0.7	0.7
Heptachlor	--	--	0.00001	0.00001	--	--	0.00001	0.00001
Heptachlor epoxide	--	--	0.00001	0.00001	--	--	0.00001	0.00001
Lindane	--	--	0.0002	0.0002	--	--	0.0002	0.0002
Methoxychlor	--	--	0.03	0.03	--	--	0.03	0.03
Molinate	--	--	0.02	0.02	--	--	0.02	0.02
Oxamyl	--	--	0.05	0.05	--	--	0.05	0.05
Picloram	--	--	0.5	0.5	--	--	0.5	0.5
Polychlorinated biphenyls	--	--	0.0005	0.0005	--	--	0.0005	0.0005
Simazine	--	--	0.004	0.004	--	--	0.004	0.004
Thiobencarb	--	--	0.001	0.001	--	--	0.001	0.001
Toxaphene	--	--	0.003	0.003	--	--	0.003	0.003
2,4,5-TP (Silvex)	--	--	0.05	0.05	--	--	0.05	0.05
General Chemistry Parameters (mg/L)								
Ammonia as N	4.5	--	--	4.5	4.5	--	--	4.5
Ammonia, Un-ionized	--	0.098	--	0.098	--	0.098	--	0.098
BOD_5	20	--	--	20	20	--	--	20
Chloride	--	140	--	140	--	140	--	140
COD	--	30	--	30	--	30	--	30
Cyanide, Free	0.0042	--	--	0.0042	0.0042	--	--	0.0042
Cyanide, Total	--	0.2	0.15	0.15	--	0.2	0.15	0.15
Fluoride	--	1.0	2.0	1.0	--	1.0	2.0	1.0
Hardness	--	50	--	50	--	50	--	50
MBAS	--	0.05	0.5	0.05	--	0.05	0.5	0.05
Nitrate+Nitrate as N	--	10	--	10	--	10	--	10
Nitrate as N	--	2.9	--	2.9	--	2.9	--	2.9
Sulfate	--	150	--	150	--	150	--	150
Total Dissolved Solids	550	250	--	250	550	250	--	250
Total Inorganic Nitrogen	8.0	10	--	8.0	8.0	10	--	8.0
Total Suspended Solids	20	--	--	20	20	--	--	20

Table B-5
Effluent Limits per Outfall Location
Local Limits Report

	DP003				DP004			
Parameter	NPDES Limit	Basin Plan Limits	Recycled Limits	Most Stringent	NPDES Limit	Basin Plan Limits	Recycled Limits	Most Stringent
Inorganics (mg/L)								
Aluminum	--	--	0.2	0.2	--	--	0.2	0.2
Antimony	--	--	0.006	0.006	--	--	0.006	0.006
Arsenic	--	0.05	0.01	0.01	--	0.05	0.01	0.01
Barium	--	1.0	1.0	1.0	--	1.0	1.0	1.0
Beryllium	--	--	0.004	0.004	--	--	0.004	0.004
Boron	--	0.75	--	0.75	--	0.75	--	0.75
Cadmium	--	0.0017	0.005	0.0017	--	0.004	0.005	0.004
Chromium	--	0.05	0.05	0.05	--	0.05	0.05	0.05
Cobalt	--	0.2	--	0.2	--	0.2	--	0.2
Copper	--	0.0182	1.0	0.0182	--	0.037	1.0	0.037
Iron	--	0.3	0.3	0.3	--	0.3	0.3	0.3
Lead	--	0.0041	0.015	0.0041	--	0.028	0.015	0.015
Manganese	--	0.05	0.05	0.05	--	0.05	0.05	0.05
Mercury	--	0.002	0.002	0.002	--	0.002	0.002	0.002
Nickel	--	--	0.1	0.1	--	--	0.1	0.1
Selenium	--	0.01	0.05	0.01	--	0.01	0.05	0.01
Silver	--	0.05	0.1	0.05	--	0.05	0.1	0.05
Sodium	--	75	--	75	--	110	--	110
Thallium	--	--	0.002	0.002	--	--	0.002	0.002
Zinc	--	--	5.0	5.0	--	--	5.0	5.0
Volatile Organics (mg/L)								
1,1,1-Trichloroethane	--	--	0.2	0.2	--	--	0.2	0.2
1,1,2,2-Tetrachloroethane	--	--	0.001	0.001	--	--	0.001	0.001
1,1,2-Trichloroethane	--	--	0.005	0.005	--	--	0.005	0.005
1,1,2-Trichlorotrifluoroethane	--	--	1.2	1.2	--	--	1.2	1.2
1,1-Dichloroethane	--	--	0.005	0.005	--	--	0.005	0.005
1,1-Dichloroethene	--	--	0.006	0.006	--	--	0.006	0.006
1,2-Dichlorobenzene	--	--	0.6	0.6	--	--	0.6	0.6
1,2-Dichloroethane	--	--	0.0005	0.0005	--	--	0.0005	0.0005
1,2-Dichloropropane	--	--	0.005	0.005	--	--	0.005	0.005
1,3-Dichloropropene	--	--	0.0005	0.0005	--	--	0.0005	0.0005
1,4-Dichlorobenzene	--	--	0.005	0.005	--	--	0.005	0.005
Benzene	--	--	0.001	0.001	--	--	0.001	0.001
Bromodichloromethane	0.046	--	--	0.046	--	--	--	--
Carbon tetrachloride	--	--	0.0005	0.0005	--	--	0.0005	0.0005
Chlorobenzene	--	--	0.07	0.07	--	--	0.07	0.07
cis-1,2-Dichloroethene	--	--	0.006	0.006	--	--	0.006	0.006
Dibromochloropropane	--	--	0.0002	0.0002	--	--	0.0002	0.0002
Ethylene dibromide	--	--	0.00005	0.00005	--	--	0.00005	0.00005
Ethylbenzene	--	--	0.3	0.3	--	--	0.3	0.3
Methylene Chloride	--	--	0.005	0.005	--	--	0.005	0.005
Methyl tertiary butyl ether	--	--	0.005	0.005	--	--	0.005	0.005
Styrene	--	--	0.1	0.1	--	--	0.1	0.1
Tetrachloroethene	--	--	0.005	0.005	--	--	0.005	0.005
Toluene	--	--	0.15	0.15	--	--	0.15	0.15
Total Trihalomethanes (THMs)	--	--	0.080	0.080	--	--	0.080	0.080
trans-1,2-Dichloroethene	--	--	0.01	0.01	--	--	0.01	0.01
Trichloroethene	--	--	0.005	0.005	--	--	0.005	0.005
Trichlorofluoromethane	--	--	0.15	0.15	--	--	0.15	0.15
Vinyl chloride	--	--	0.0005	0.0005	--	--	0.0005	0.0005
Xylenes (total)	--	--	1.750	1.750	--	--	1.750	1.750

Table B-5
Effluent Limits per Outfall Location
Local Limits Report

Parameter	DP003 NPDES Limit	DP003 Basin Plan Limits	DP003 Recycled Limits	DP003 Most Stringent	DP004 NPDES Limit	DP004 Basin Plan Limits	DP004 Recycled Limits.	DP004 Most Stringent
Semivolatile Organics (mg/L)								
1,2,4-Trichlorobenzene	--	--	0.005	0.005	--	--	0.005	0.005
Benzo(a)pyrene	--	--	0.0002	0.0002	--	--	0.0002	0.0002
Bis(2-ethylhexyl)adipate	--	--	0.4	0.4	--	--	0.4	0.4
Bis(2-ethylhexyl)phthalate	--	--	0.004	0.004	0.0059	--	0.004	0.004
Hexachlorobenzene	--	--	0.001	0.001	--	--	0.001	0.001
Hexachlorocyclopentadiene	--	--	0.05	0.05	--	--	0.05	0.05
Pentachlorophenol	--	--	0.001	0.001	--	--	0.001	0.001
2,3,7,8-TCDD (Dioxin) (ug/L)	--	--	0.00003	0.00003	--	--	0.00003	0.00003
Pesticides/PCBs/Herbicides (								
Alachor	--	--	0.002	0.002	--	--	0.002	0.002
Atrazine	--	--	0.001	0.001	--	--	0.001	0.001
Bentazon	--	--	0.018	0.018	--	--	0.018	0.018
Carbofuran	--	--	0.018	0.018	--	--	0.018	0.018
Chlordane	--	--	0.0001	0.0001	--	--	0.0001	0.0001
2,4-D	--	--	0.07	0.07	--	--	0.07	0.07
Dalapon	--	--	0.2	0.2	--	--	0.2	0.2
Dinoseb	--	--	0.007	0.007	--	--	0.007	0.007
Diquat	--	--	0.02	0.02	--	--	0.02	0.02
Endothall	--	--	0.1	0.1	--	--	0.1	0.1
Endrin	--	--	0.002	0.002	--	--	0.002	0.002
Glyphosate	--	--	0.7	0.7	--	--	0.7	0.7
Heptachlor	--	--	0.00001	0.00001	--	--	0.00001	0.00001
Heptachlor epoxide	--	--	0.00001	0.00001	--	--	0.00001	0.00001
Lindane	--	--	0.0002	0.0002	--	--	0.0002	0.0002
Methoxychlor	--	--	0.03	0.03	--	--	0.03	0.03
Molinate	--	--	0.02	0.02	--	--	0.02	0.02
Oxamyl	--	--	0.05	0.05	--	--	0.05	0.05
Picloram	--	--	0.5	0.5	--	--	0.5	0.5
Polychlorinated biphenyls	--	--	0.0005	0.0005	--	--	0.0005	0.0005
Simazine	--	--	0.004	0.004	--	--	0.004	0.004
Thiobencarb	--	--	0.001	0.001	--	--	0.001	0.001
Toxaphene	--	--	0.003	0.003	--	--	0.003	0.003
2,4,5-TP (Silvex)	--	--	0.05	0.05	--	--	0.05	0.05
General Chemistry Paramete								
Ammonia as N	4.5	--	--	4.5	4.5	--	--	4.5
Ammonia, Un-ionized	--	--	--	--	--	--	--	--
BOD_5	20	--	--	20	20	--	--	20
Chloride	--	75	--	75	--	140	--	140
COD	--	15	--	15	--	30	--	30
Cyanide, Free	0.0046	--	--	0.0046	0.0043	--	--	0.0043
Cyanide, Total	--	0.2	0.15	0.15	--	0.2	0.15	0.15
Fluoride	--	1.0	2.0	1.0	--	1.0	2.0	1.0
Hardness	--	50	--	50	--	50	--	50
MBAS	--	0.05	0.5	0.05	--	0.05	0.5	0.05
Nitrate+Nitrate as N	--	10	--	10	--	10	--	10
Nitrate as N	--	2.9	--	2.9	--	2.9	--	2.9
Sulfate	--	60	--	60	--	150	--	150
Total Dissolved Solids	550	250	--	250	550	250	--	250
Total Inorganic Nitrogen	8.0	8.0	--	8.0	8.0	10.0	--	8.0
Total Suspended Solids	20	--	--	20	20	--	--	20

Table B-5
Effluent Limits per Outfall Location
Local Limits Report

Parameter	DP005 NPDES Limit	DP005 Basin Plan Limits	DP005 Recycled Limits	DP005 Most Stringent	DP006 NPDES Limit	DP006 Basin Plan Limits	DP006 Recycled Limits	DP006 Most Stringent
Inorganics (mg/L)								
Aluminum	--	--	0.2	0.2	--	--	0.2	0.2
Antimony	--	--	0.006	0.006	--	--	0.006	0.006
Arsenic	--	0.05	0.01	0.01	--	0.05	0.01	0.01
Barium	--	1.0	1.0	1.0	--	1.0	1.0	1.0
Beryllium	--	--	0.004	0.004	--	--	0.004	0.004
Boron	--	--	--	0.75	--	--	--	--
Cadmium	--	0.01	0.005	0.005	--	0.01	0.005	0.005
Chromium	--	0.05	0.05	0.05	--	0.05	0.05	0.05
Cobalt	--	0.2	--	0.2	--	0.2	--	0.2
Copper	--	1.0	1.0	1.0	--	1.0	1.0	1.0
Iron	--	0.3	0.3	0.3	--	0.3	0.3	0.3
Lead	--	0.05	0.015	0.015	--	0.05	0.015	0.015
Manganese	--	0.05	0.05	0.05	--	0.05	0.05	0.05
Mercury	--	0.002	0.002	0.002	--	0.002	0.002	0.002
Nickel	--	--	0.1	0.1	--	--	0.1	0.1
Selenium	--	0.01	0.05	0.01	--	0.01	0.05	0.01
Silver	--	0.05	0.1	0.05	--	0.05	0.1	0.05
Sodium	--	180	--	180	--	180	--	180
Thallium	--	--	0.002	0.002	--	--	0.002	0.002
Zinc	--	--	5.0	5.0	--	--	5.0	5.0
Volatile Organics (mg/L)								
1,1,1-Trichloroethane	--	--	0.2	0.2	--	--	0.2	0.2
1,1,2,2-Tetrachloroethane	--	--	0.001	0.001	--	--	0.001	0.001
1,1,2-Trichloroethane	--	--	0.005	0.005	--	--	0.005	0.005
1,1,2-Trichlorotrifluoroethane	--	--	1.2	1.2	--	--	1.2	1.2
1,1-Dichloroethane	--	--	0.005	0.005	--	--	0.005	0.005
1,1-Dichloroethene	--	--	0.006	0.006	--	--	0.006	0.006
1,2-Dichlorobenzene	--	--	0.6	0.6	--	--	0.6	0.6
1,2-Dichloroethane	--	--	0.0005	0.0005	--	--	0.0005	0.0005
1,2-Dichloropropane	--	--	0.005	0.005	--	--	0.005	0.005
1,3-Dichloropropene	--	--	0.0005	0.0005	--	--	0.0005	0.0005
1,4-Dichlorobenzene	--	--	0.005	0.005	--	--	0.005	0.005
Benzene	--	--	0.001	0.001	--	--	0.001	0.001
Bromodichloromethane	--	--	--	--	--	--	--	--
Carbon tetrachloride	--	--	0.0005	0.0005	--	--	0.0005	0.0005
Chlorobenzene	--	--	0.07	0.07	--	--	0.07	0.07
cis-1,2-Dichloroethene	--	--	0.006	0.006	--	--	0.006	0.006
Dibromochloropropane	--	--	0.0002	0.0002	--	--	0.0002	0.0002
Ethylene dibromide	--	--	0.00005	0.00005	--	--	0.00005	0.00005
Ethylbenzene	--	--	0.3	0.3	--	--	0.3	0.3
Methylene Chloride	--	--	0.005	0.005	--	--	0.005	0.005
Methyl tertiary butyl ether	--	--	0.005	0.005	--	--	0.005	0.005
Styrene	--	--	0.1	0.1	--	--	0.1	0.1
Tetrachloroethene	--	--	0.005	0.005	--	--	0.005	0.005
Toluene	--	--	0.15	0.15	--	--	0.15	0.15
Total Trihalomethanes (THMs)	--	--	0.080	0.080	--	--	0.080	0.080
trans-1,2-Dichloroethene	--	--	0.01	0.01	--	--	0.01	0.01
Trichloroethene	--	--	0.005	0.005	--	--	0.005	0.005
Trichlorofluoromethane	--	--	0.15	0.15	--	--	0.15	0.15
Vinyl chloride	--	--	0.0005	0.0005	--	--	0.0005	0.0005
Xylenes (total)	--	--	1.750	1.750	--	--	1.750	1.750

Table B-5
Effluent Limits per Outfall Location
Local Limits Report

Parameter	DP005 NPDES Limit	DP005 Basin Plan Limits	DP005 Recycled Limits	DP005 Most Stringent	DP006 NPDES Limit	DP006 Basin Plan Limits	DP006 Recycled Limits	DP006 Most Stringent
Semivolatile Organics (mg/L)								
1,2,4-Trichlorobenzene	--	--	0.005	0.005	--	--	0.005	0.005
Benzo(a)pyrene	--	--	0.0002	0.0002	--	--	0.0002	0.0002
Bis(2-ethylhexyl)adipate	--	--	0.4	0.4	--	--	0.4	0.4
Bis(2-ethylhexyl)phthalate	--	--	0.004	0.004	--	--	0.004	0.004
Hexachlorobenzene	--	--	0.001	0.001	--	--	0.001	0.001
Hexachlorocyclopentadiene	--	--	0.05	0.05	--	--	0.05	0.05
Pentachlorophenol	--	--	0.001	0.001	--	--	0.001	0.001
2,3,7,8-TCDD (Dioxin) (ug/L)	--	--	0.00003	0.00003	--	--	0.00003	0.00003
Pesticides/PCBs/Herbicides								
Alachor	--	--	0.002	0.002	--	--	0.002	0.002
Atrazine	--	--	0.001	0.001	--	--	0.001	0.001
Bentazon	--	--	0.018	0.018	--	--	0.018	0.018
Carbofuran	--	--	0.018	0.018	--	--	0.018	0.018
Chlordane	--	--	0.0001	0.0001	--	--	0.0001	0.0001
2,4-D	--	--	0.07	0.07	--	--	0.07	0.07
Dalapon	--	--	0.2	0.2	--	--	0.2	0.2
Dinoseb	--	--	0.007	0.007	--	--	0.007	0.007
Diquat	--	--	0.02	0.02	--	--	0.02	0.02
Endothall	--	--	0.1	0.1	--	--	0.1	0.1
Endrin	--	--	0.002	0.002	--	--	0.002	0.002
Glyphosate	--	--	0.7	0.7	--	--	0.7	0.7
Heptachlor	--	--	0.00001	0.00001	--	--	0.00001	0.00001
Heptachlor epoxide	--	--	0.00001	0.00001	--	--	0.00001	0.00001
Lindane	--	--	0.0002	0.0002	--	--	0.0002	0.0002
Methoxychlor	--	--	0.03	0.03	--	--	0.03	0.03
Molinate	--	--	0.02	0.02	--	--	0.02	0.02
Oxamyl	--	--	0.05	0.05	--	--	0.05	0.05
Picloram	--	--	0.5	0.5	--	--	0.5	0.5
Polychlorinated biphenyls	--	--	0.0005	0.0005	--	--	0.0005	0.0005
Simazine	--	--	0.004	0.004	--	--	0.004	0.004
Thiobencarb	--	--	0.001	0.001	--	--	0.001	0.001
Toxaphene	--	--	0.003	0.003	--	--	0.003	0.003
2,4,5-TP (Silvex)	--	--	0.05	0.05	--	--	0.05	0.05
General Chemistry Paramete								
Ammonia as N	--	--	--	--	--	--	--	--
Ammonia, Un-ionized	--	--	--	--	--	--	--	--
BOD_5	20	--	--	20	20	--	--	20
Chloride	--	175	--	175	--	175	--	175
COD	--	--	--	--	--	--	--	--
Cyanide, Free	--	--	--	--	--	--	--	--
Cyanide, Total	--	0.2	0.15	0.15	--	0.2	0.15	0.15
Fluoride	--	1.0	2.0	1.0	--	1.0	2.0	1.0
Hardness	--	50	--	50	--	50	--	50
MBAS	--	0.05	0.5	0.05	--	0.05	0.5	0.05
Nitrate+Nitrite as N	--	10	--	10	--	10	--	10
Nitrate as N	--	2.9	--	2.9	--	2.9	--	2.9
Sulfate	--	--	--	--	--	--	--	--
Total Dissolved Solids	250	250	--	250	250	250	--	250
Total Inorganic Nitrogen	8.0	--	--	8.0	8.0	--	--	8.0
Total Suspended Solids	20	--	--	20	20	--	--	20

Table B-5
Effluent Limits per Outfall Location
Local Limits Report

Parameter	DP007 NPDES Limit	DP007 Basin Plan Limits	DP007 Recycled Limits	DP007 Most Stringent	DP008 NPDES Limit	DP008 Basin Plan Limits	DP008 Recycled Limits	DP008 Most Stringent
Inorganics (mg/L)								
Aluminum	--	--	0.2	0.2	--	--	0.2	0.2
Antimony	--	--	0.006	0.006	--	--	0.006	0.006
Arsenic	--	0.05	0.01	0.01	--	0.05	0.01	0.01
Barium	--	1.0	1.0	1.0	--	1.0	1.0	1.0
Beryllium	--	--	0.004	0.004	--	--	0.004	0.004
Boron	--	--	--	--	--	--	--	--
Cadmium	--	0.01	0.005	0.005	--	0.01	0.005	0.005
Chromium	--	0.05	0.05	0.05	--	0.05	0.05	0.05
Cobalt	--	0.2	--	0.2	--	0.2	--	0.2
Copper	--	1.0	1.0	1.0	--	1.0	1.0	1.0
Iron	--	0.3	0.3	0.3	--	0.3	0.3	0.3
Lead	--	0.05	0.015	0.015	--	0.05	0.015	0.015
Manganese	--	0.05	0.05	0.05	--	0.05	0.05	0.05
Mercury	--	0.002	0.002	0.002	--	0.002	0.002	0.002
Nickel	--	--	0.1	0.1	--	--	0.1	0.1
Selenium	--	0.01	0.05	0.01	--	0.01	0.05	0.01
Silver	--	0.05	0.1	0.05	--	0.05	0.1	0.05
Sodium	--	180	--	180	--	180	--	180
Thallium	--	--	0.002	0.002	--	--	0.002	0.002
Zinc	--	--	5.0	5.0	--	--	5.0	5.0
Volatile Organics (mg/L)								
1,1,1-Trichloroethane	--	--	0.2	0.2	--	--	0.2	0.2
1,1,2,2-Tetrachloroethane	--	--	0.001	0.001	--	--	0.001	0.001
1,1,2-Trichloroethane	--	--	0.005	0.005	--	--	0.005	0.005
1,1,2-Trichlorotrifluoroethane	--	--	1.2	1.2	--	--	1.2	1.2
1,1-Dichloroethane	--	--	0.005	0.005	--	--	0.005	0.005
1,1-Dichloroethene	--	--	0.006	0.006	--	--	0.006	0.006
1,2-Dichlorobenzene	--	--	0.6	0.6	--	--	0.6	0.6
1,2-Dichloroethane	--	--	0.0005	0.0005	--	--	0.0005	0.0005
1,2-Dichloropropane	--	--	0.005	0.005	--	--	0.005	0.005
1,3-Dichloropropene	--	--	0.0005	0.0005	--	--	0.0005	0.0005
1,4-Dichlorobenzene	--	--	0.005	0.005	--	--	0.005	0.005
Benzene	--	--	0.001	0.001	--	--	0.001	0.001
Bromodichloromethane	--	--	--	--	--	--	--	--
Carbon tetrachloride	--	--	0.0005	0.0005	--	--	0.0005	0.0005
Chlorobenzene	--	--	0.07	0.07	--	--	0.07	0.07
cis-1,2-Dichloroethene	--	--	0.006	0.006	--	--	0.006	0.006
Dibromochloropropane	--	--	0.0002	0.0002	--	--	0.0002	0.0002
Ethylene dibromide	--	--	0.00005	0.00005	--	--	0.00005	0.00005
Ethylbenzene	--	--	0.3	0.3	--	--	0.3	0.3
Methylene Chloride	--	--	0.005	0.005	--	--	0.005	0.005
Methyl tertiary butyl ether	--	--	0.005	0.005	--	--	0.005	0.005
Styrene	--	--	0.1	0.1	--	--	0.1	0.1
Tetrachloroethene	--	--	0.005	0.005	--	--	0.005	0.005
Toluene	--	--	0.15	0.15	--	--	0.15	0.15
Total Trihalomethanes (THMs)	--	--	0.080	0.080	--	--	0.080	0.080
trans-1,2-Dichloroethene	--	--	0.01	0.01	--	--	0.01	0.01
Trichloroethene	--	--	0.005	0.005	--	--	0.005	0.005
Trichlorofluoromethane	--	--	0.15	0.15	--	--	0.15	0.15
Vinyl chloride	--	--	0.0005	0.0005	--	--	0.0005	0.0005
Xylenes (total)	--	--	1.750	1.750	--	--	1.750	1.750

Table B-5
Effluent Limits per Outfall Location
Local Limits Report

Parameter	DP007 NPDES Limit	DP007 Basin Plan Limits	DP007 Recycled Limits	DP007 Most Stringent	DP008 NPDES Limit	DP008 Basin Plan Limits	DP008 Recycled Limits	DP008 Most Stringent
Semivolatile Organics (mg/L)								
1,2,4-Trichlorobenzene	--	--	0.005	0.005	--	--	0.005	0.005
Benzo(a)pyrene	--	--	0.0002	0.0002	--	--	0.0002	0.0002
Bis(2-ethylhexyl)adipate	--	--	0.4	0.4	--	--	0.4	0.4
Bis(2-ethylhexyl)phthalate	--	--	0.004	0.004	--	--	0.004	0.004
Hexachlorobenzene	--	--	0.001	0.001	--	--	0.001	0.001
Hexachlorocyclopentadiene	--	--	0.05	0.05	--	--	0.05	0.05
Pentachlorophenol	--	--	0.001	0.001	--	--	0.001	0.001
2,3,7,8-TCDD (Dioxin) (ug/L)	--	--	0.00003	0.00003	--	--	0.00003	0.00003
Pesticides/PCBs/Herbicides								
Alachor	--	--	0.002	0.002	--	--	0.002	0.002
Atrazine	--	--	0.001	0.001	--	--	0.001	0.001
Bentazon	--	--	0.018	0.018	--	--	0.018	0.018
Carbofuran	--	--	0.018	0.018	--	--	0.018	0.018
Chlordane	--	--	0.0001	0.0001	--	--	0.0001	0.0001
2,4-D	--	--	0.07	0.07	--	--	0.07	0.07
Dalapon	--	--	0.2	0.2	--	--	0.2	0.2
Dinoseb	--	--	0.007	0.007	--	--	0.007	0.007
Diquat	--	--	0.02	0.02	--	--	0.02	0.02
Endothall	--	--	0.1	0.1	--	--	0.1	0.1
Endrin	--	--	0.002	0.002	--	--	0.002	0.002
Glyphosate	--	--	0.7	0.7	--	--	0.7	0.7
Heptachlor	--	--	0.00001	0.00001	--	--	0.00001	0.00001
Heptachlor epoxide	--	--	0.00001	0.00001	--	--	0.00001	0.00001
Lindane	--	--	0.0002	0.0002	--	--	0.0002	0.0002
Methoxychlor	--	--	0.03	0.03	--	--	0.03	0.03
Molinate	--	--	0.02	0.02	--	--	0.02	0.02
Oxamyl	--	--	0.05	0.05	--	--	0.05	0.05
Picloram	--	--	0.5	0.5	--	--	0.5	0.5
Polychlorinated biphenyls	--	--	0.0005	0.0005	--	--	0.0005	0.0005
Simazine	--	--	0.004	0.004	--	--	0.004	0.004
Thiobencarb	--	--	0.001	0.001	--	--	0.001	0.001
Toxaphene	--	--	0.003	0.003	--	--	0.003	0.003
2,4,5-TP (Silvex)	--	--	0.05	0.05	--	--	0.05	0.05
General Chemistry Paramete								
Ammonia as N	--	--	--	--	--	--	--	--
Ammonia, Un-ionized	--	--	--	--	--	--	--	--
BOD_5	20	--	--	20	20	--	--	20
Chloride	--	175	--	175	--	175	--	175
COD	--	--	--	--	--	--	--	--
Cyanide, Free	--	--	--	--	--	--	--	--
Cyanide, Total	--	0.2	0.15	0.15	--	0.2	0.15	0.15
Fluoride	--	1.0	2.0	1.0	--	1.0	2.0	1.0
Hardness	--	50	--	50	--	50	--	50
MBAS	--	0.05	0.5	0.05	--	0.05	0.5	0.05
Nitrate+Nitrate as N	--	10	--	10	--	10	--	10
Nitrate as N	--	2.9	--	2.9	--	2.9	--	2.9
Sulfate	--	--	--	--	--	--	--	--
Total Dissolved Solids	250	250	--	250	250	250	--	250
Total Inorganic Nitrogen	8.0	--	--	--	--	--	--	8.0
Total Suspended Solids	20	--	--	20	20	--	--	20

Notes:
mg/L = milligrams per liter; ug/L = micrograms per liter; "--" = Not applicable
PCBs = Polychlorinated biphenyls
BOD_5 = 5-day Biochemcial Oxygen Demand
COD = Chemical Oxygen Demand
MBAS = Methylene Blue Active Substances
Total Trihalomethanes (THMs) = Sum of bromoform, bromodichloromethane, dibromochloromethane, and chloroform
Total Inorganic Nitrogen = Total Kjeldahl Nitrogen + Nitrate + Nitrite
Most Stringent = Lowest value between NPDES, Basin Plan, and Recycled Water limits per outfall location

Table B-6
Inhibition, Health Safety, & Biosolids Criteria
Local Limits Report

Parameter	Inhibition Levels Activated Sludge (mg/L)	Inhibition Levels Nitrification (mg/L)	Inhibition Levels Anaerobic Digestion (mg/L)	H&S Level (mg/L)	Biosolids Criteria (mg/kg)
Inorganics					
Arsenic	0.1	1.5	1.6	--	41
Cadmium	1 - 10	5.2	20	--	39
Chromium	1 - 100	0.25 - 1.9	130	--	--
Chromium VI	1	1 - 10	110	--	--
Copper	1	0.05 - 0.48	40	--	1500
Lead	1.0 - 5.0	0.5	340	--	300
Mercury	0.1 - 1	--	--	--	17
Molybdenum	--	--	--	--	75
Nickel	1.0 - 2.5	0.25 - 0.5	10	--	420
Selenium	--	--	--	--	100
Silver	--	--	13 - 65	--	--
Zinc	0.3 -5	0.08 - 0.5	400	--	2,800
Volatile Organics					
1,1,1-Trichloroethane	--	--	--	2.759	--
1,1,2,2-Tetrachloroethane	--	--	--	1.847	--
1,1,2-Trichloroethane	--	--	--	1.601	--
1,1-Dichloroethane	--	--	--	1.685	--
1,1-Dichloroethene	--	--	--	0.016	--
1,2-Dichlorobenzene	5	--	0.23 - 3.8	--	--
1,2-Dichloroethane	--	--	--	0.168	--
1,2-Dichloropropane	--	--	--	4.289	--
1,3-Dichlorobenzene	5	--	--	--	--
1,4-Dichlorobenzene	5	--	1.4 - 5.3	--	--
Acrolein	--	--	--	0.047	--
Acrylonitrile	--	--	5	4.822	--
Benzene	100 - 500	--	--	0.014	--
Bromoform	--	--	--	0.227	--
Bromomethane	--	--	--	0.305	--
Carbon tetrachloride	--	--	2.0	0.011	--
Chlorobenzene	--	--	0.96 - 3.0	2.29	--
Chloroethane	--	--	--	5.88	--
Chloroform	--	10	1.0	0.06	--
Chloromethane	--	--	3.3 - 536.4	0.557	--
Ethylbenzene	200	--	--	1.659	--
Methylene Chloride	--	--	--	4.139	--
Tetrachloroethene	--	--	20	0.945	--
Toluene	200	--	--	2.075	--
trans-1,2-Dichloroethene	--	--	--	2.04	--
Trichloroethene	--	--	1 - 20	0.026	--
Vinyl chloride	--	--	--	0.012	--
Semivolatile Organics					
1,2-Diphenylhydrazine	5	--	--	--	--
2,4,6-Trichlorophenol	50 - 100	--	--	--	--
2,4-Dichlorophenol	64	64	--	--	--
2,4-Dimethylphenol	40 - 200	--	--	--	--
2,4-Dinitrophenol	--	150	--	--	--
2,4-Dinitrotoluene	5	--	--	--	--
2-Chlorophenol	5	--	--	--	--
Anthracene	500	--	--	--	--
Hexachlorobenzene	5	--	--	--	--
Naphthalene	500	--	--	--	--
Nitrobenzene	30 - 500	--	--	--	--

Table B-6
Inhibition, Health Safety, & Biosolids Criteria
Local Limits Report

Parameter	Inhibition Levels: Activated Sludge (mg/L)	Inhibition Levels: Nitrification (mg/L)	Inhibition Levels: Anaerobic Digestion (mg/L)	H&S Level (mg/L)	Biosolids Criteria (mg/kg)
Pentachlorophenol	0.95	--	0.2 - 1.8	--	--
Phenanthrene	500	--	--	--	--
General Chemistry Parameters					
Ammonia as N	480	--	1500 - 8000	--	--
Chloride	--	180	--	--	--
Cyanide, Free	--	--	--	1.149	--
Cyanide, Total	0.1 - 5	0.34 - 0.5	1 - 4	--	--
Phenols	50 - 200	4 - 10	--	--	--
Sulfide	25 - 30	--	50 - 100	0.034	--
Sulfate	--	--	500 - 1000	--	--
Surfactants	100 - 500	--	--	--	--

Notes:
mg/L = Milligrams per liter; mg/kg = Milligram per kilogram; "--" = Not applicable
H&S = Health and Safety
Inhibition Levels = Based on Appendix G of the 2004 USEPA Local Limits Development Guidance
H&S Levels = Most stringent criteria between explosivity and fume toxicity levels listed in Appendix I of the 2004 USEPA Local Limits Development Guidance
Biosolids Criteria = Monthly average pollutant concentrations and ceiling concentration (for molybdenum) listed in Appendix E of the 2004 USEPA Local Limits Development Guidance
H&S criteria for Cyanide, Free is based on hydrogen cyanide
H&S criteria for Sulfide is based on hydrogen sulfide

Table B-7
RP-1 POC Screening
Local Limits Report

Potential Pollutants of Concern	Max Influent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Max Biosolids Conc. (mg/kg)	Criteria: Effluent (mg/L)	Criteria: AS / N Inhibition (mg/L)	Criteria: AD Inhibition (mg/L)	Criteria: H&S (mg/L)	Criteria: Biosolids (mg/kg)	Screening Process: Effluent ≥ 1/2 Effluent Criteria	Screening Process: Influent ≥ Effluent Criteria	Screening Process: Influent ≥ 1/4 AS / N Inhibition	Screening Process: Influent ≥ 1/500 AD Inhibition	Screening Process: Influent ≥ H & S Level	Screening Process: Biosolids ≥ 1/2 Biosolids Criteria	Pollutants of Concern
Inorganics															
Aluminum	1.21	0.11	NA	0.2	--	--	--	--	Y	Y	--	--	--	--	Y
Antimony	ND	ND	11.0	0.006	--	--	--	--	N	N	--	--	--	--	N
Arsenic	ND	ND	6.0	0.01	0.1	1.6	--	41	N	N	N	N	--	N	N
Barium	0.16	0.017	NA	1.0	--	--	--	--	N	N	--	--	--	--	N
Beryllium	ND	ND	ND	0.004	--	--	--	--	N	N	--	--	--	--	N
Boron	0.7	0.7	NA	0.75	--	--	--	--	Y	N	--	--	--	--	Y
Cadmium	ND	ND	ND	0.0017	1.0	20	--	39	N	N	N	N	--	N	N
Chromium	0.01	0.0022	46.0	0.05	0.25	130	--	--	N	N	N	N	--	--	N
Chromium VI	NA	NA	NA	--	1.0	110	--	--	--	--	--	--	--	--	--
Cobalt	ND	ND	NA	0.2	--	--	--	--	N	N	--	--	--	--	N
Copper	0.15	0.0047	386	0.0182	0.05	40	--	1500	N	Y	Y	Y	--	N	Y
Iron	2.62	0.084	NA	0.3	--	--	--	--	N	Y	--	--	--	--	Y
Lead	ND	ND	19.0	0.0041	0.5	340	--	300	N	N	N	N	--	N	N
Manganese	0.04	0.03	NA	0.05	--	--	--	--	Y	N	--	--	--	--	Y
Mercury	0.0008	ND	NA	0.002	0.1	--	--	17	N	N	N	--	--	--	N
Molybdenum	0.02	0.032	11.0	--	--	--	--	75	--	--	--	--	--	N	N
Nickel	ND	0.011	20.0	0.1	0.25	10	--	420	N	N	N	N	--	N	N
Selenium	ND	ND	10.0	0.0041	--	--	--	100	N	N	--	--	--	N	N
Silver	0.01	0.00051	ND	0.05	--	13	--	--	N	N	--	N	--	--	N
Sodium	100	121	NA	110	--	--	--	--	Y	N	--	--	--	--	Y
Thallium	ND	ND	ND	0.002	--	--	--	--	N	N	--	--	--	--	N
Zinc	0.46	0.034	986	5.0	0.08	400	--	2,800	N	N	Y	N	--	N	Y
Volatile Organics															
1,1,1-Trichloroethane	ND	ND	NA	0.2	--	--	2.759	--	N	N	--	--	N	--	N
1,1,2,2-Tetrachloroethane	ND	ND	NA	0.001	--	--	1.847	--	N	N	--	--	N	--	N
1,1,2-Trichloroethane	ND	ND	NA	0.005	--	--	1.601	--	N	N	--	--	N	--	N
1,1,2-Trichlorotrifluoroethane	ND	ND	NA	1.2	--	--	--	--	N	N	--	--	--	--	N
1,1-Dichloroethane	ND	ND	NA	0.005	--	--	1.685	--	N	N	--	--	N	--	N
1,1-Dichloroethene	ND	ND	NA	0.006	--	--	0.016	--	N	N	--	--	N	--	N
1,2-Dichlorobenzene	ND	ND	NA	0.6	5.0	0.23	--	--	N	N	N	N	--	--	N
1,2-Dichloroethane	ND	ND	NA	0.0005	--	--	0.168	--	N	N	--	--	N	--	N
1,2-Dichloropropane	ND	ND	NA	0.005	--	--	4.289	--	N	N	--	--	N	--	N
1,3-Dichlorobenzene	ND	ND	NA	--	5.0	--	--	--	--	--	N	--	--	--	N
1,3-Dichloropropene	ND	ND	NA	0.0005	--	--	--	--	N	N	--	--	--	--	N
1,4-Dichlorobenzene	ND	ND	NA	0.005	5.0	1.4	--	--	N	N	N	N	--	--	N
Acrolein	ND	ND	NA	--	--	--	0.047	--	--	--	--	--	N	--	N
Acrylonitrile	ND	ND	NA	--	--	5.0	4.822	--	--	--	--	N	N	--	N
Benzene	ND	ND	NA	0.001	100	--	0.014	--	N	N	N	--	N	--	N
Bromodichloromethane	ND	0.035	NA	--	--	--	--	--	--	--	--	--	--	--	--
Bromoform	ND	ND	NA	--	--	--	0.227	--	--	--	--	--	N	--	N
Bromomethane	ND	ND	NA	--	--	--	0.305	--	--	--	--	--	N	--	N
Carbon tetrachloride	ND	ND	NA	0.0005	--	2.0	0.011	--	N	N	--	N	N	--	N
Chlorobenzene	ND	ND	NA	0.07	--	0.96	2.29	--	N	N	--	N	N	--	N
Chloroethane	ND	ND	NA	--	--	--	5.88	--	--	--	--	--	N	--	N
Chloroform	0.012	0.128	NA	--	10	1.0	0.06	--	--	--	N	Y	N	--	Y
Chloromethane	ND	ND	NA	--	--	3.3	0.557	--	--	--	--	N	N	--	N
cis-1,2-Dichloroethene	ND	ND	NA	0.006	--	--	--	--	N	N	--	--	--	--	N
Dibromochloromethane	ND	0.009	NA	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloropropane	NA	NA	NA	0.0002	--	--	--	--	--	--	--	--	--	--	--

Table B-7
RP-1 POC Screening
Local Limits Report

Potential Pollutants of Concern	Max Influent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Max Biosolids Conc. (mg/kg)	Criteria: Effluent (mg/L)	Criteria: AS / N Inhibition (mg/L)	Criteria: AD Inhibition (mg/L)	Criteria: H&S (mg/L)	Criteria: Biosolids (mg/kg)	Screening Process: Effluent ≥ 1/2 Effluent Criteria	Screening Process: Influent ≥ Effluent Criteria	Screening Process: Influent ≥ 1/4 AS / N Inhibition	Screening Process: Influent ≥ 1/500 AD Inhibition	Screening Process: Influent ≥ H & S Level	Screening Process: Biosolids ≥ 1/2 Biosolids Criteria	Pollutants of Concern
Ethylbenzene	ND	ND	NA	0.3	200	--	1.659	--	N	N	N	--	N	--	N
Ethylene dibromide	NA	NA	NA	0.00005	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	ND	ND	NA	0.005	--	--	4.139	--	N	N	--	--	N	--	N
MTBE	NA	NA	NA	0.005	--	--	--	--	--	--	--	--	--	--	--
Styrene	ND	ND	NA	0.1	--	--	--	--	N	N	--	--	--	--	N
Tetrachloroethene	ND	ND	NA	0.005	--	20	0.945	--	N	N	--	N	N	--	N
Toluene	0.014	ND	NA	0.15	200	--	2.075	--	N	N	N	--	N	--	N
Total THMs	NA	0.153	NA	0.080	--	--	--	--	Y	--	--	--	--	--	Y
trans-1,2-Dichloroethene	ND	ND	NA	0.01	--	--	2.04	--	N	N	--	--	N	--	N
Trichloroethene	ND	ND	NA	0.005	--	1.0	0.026	--	N	N	--	N	N	--	N
Trichlorofluoromethane	ND	ND	NA	0.15	--	--	--	--	N	N	--	--	--	--	N
Vinyl chloride	ND	ND	NA	0.0005	--	--	0.012	--	N	N	--	--	N	--	N
Xylenes (total)	ND	ND	NA	1.75	--	--	--	--	N	N	--	--	--	--	N
Semivolatile Organics															
1,2,4-Trichlorobenzene	ND	ND	NA	0.005	--	--	--	--	N	N	--	--	--	--	N
1,2-Diphenylhydrazine	ND	ND	NA	--	5.0	--	--	--	--	--	N	--	--	--	N
2,4,6-Trichlorophenol	ND	ND	NA	--	50	--	--	--	--	--	N	--	--	--	N
2,4-Dichlorophenol	ND	ND	NA	--	64	--	--	--	--	--	N	--	--	--	N
2,4-Dimethylphenol	ND	ND	NA	--	40	--	--	--	--	--	N	--	--	--	N
2,4-Dinitrophenol	ND	ND	NA	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ND	ND	NA	--	5.0	--	--	--	--	--	N	--	--	--	N
2-Chlorophenol	ND	ND	NA	--	5.0	--	--	--	--	--	N	--	--	--	N
Anthracene	ND	ND	NA	--	500	--	--	--	--	--	N	--	--	--	N
Benzo(a)pyrene	ND	ND	NA	0.0002	--	--	--	--	N	N	--	--	--	--	N
Bis(2-ethylhexyl)adipate	NA	NA	NA	0.4	--	--	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	0.019	ND	NA	0.004	--	--	--	--	N	Y	--	--	--	--	Y
Hexachlorobenzene	ND	ND	NA	0.001	5.0	--	--	--	N	N	N	--	--	--	N
Hexachlorocyclopentadiene	ND	ND	NA	0.05	--	--	--	--	N	N	--	--	--	--	N
Naphthalene	ND	ND	NA	--	500	--	--	--	--	--	N	--	--	--	N
Nitrobenzene	ND	ND	NA	--	30	--	--	--	--	--	N	--	--	--	N
Pentachlorophenol	ND	ND	NA	0.001	0.95	0.2	--	--	N	N	N	N	--	--	N
Phenanthrene	ND	ND	NA	--	500	--	--	--	--	--	N	--	--	--	N
2,3,7,8-TCDD (Dioxin)	NA	NA	NA	3E-08	--	--	--	--	--	--	--	--	--	--	--
Pesticides/PCBs/Herbicides															
Alachor	NA	NA	NA	0.002	--	--	--	--	--	--	--	--	--	--	--
Atrazine	NA	NA	NA	0.001	--	--	--	--	--	--	--	--	--	--	--
Bentazon	NA	NA	NA	0.018	--	--	--	--	--	--	--	--	--	--	--
Carbofuran	NA	NA	NA	0.018	--	--	--	--	--	--	--	--	--	--	--
Chlordane	ND	ND	NA	0.0001	--	--	--	--	N	N	--	--	--	--	N
2,4-D	NA	NA	NA	0.07	--	--	--	--	--	--	--	--	--	--	--
Dalapon	NA	NA	NA	0.2	--	--	--	--	--	--	--	--	--	--	--
Dinoseb	NA	NA	NA	0.007	--	--	--	--	--	--	--	--	--	--	--
Diquat	NA	NA	NA	0.02	--	--	--	--	--	--	--	--	--	--	--
Endothall	NA	NA	NA	0.1	--	--	--	--	--	--	--	--	--	--	--
Endrin	ND	ND	NA	0.002	--	--	--	--	N	N	--	--	--	--	N
Glyphosate	NA	NA	NA	0.7	--	--	--	--	--	--	--	--	--	--	--
Heptachlor	ND	ND	NA	0.00001	--	--	--	--	N	N	--	--	--	--	N
Heptachlor epoxide	ND	ND	NA	0.00001	--	--	--	--	N	N	--	--	--	--	N
Lindane	NA	NA	NA	0.0002	--	--	--	--	--	--	--	--	--	--	--
Methoxychlor	NA	NA	NA	0.03	--	--	--	--	--	--	--	--	--	--	--

Table B-7
RP-1 POC Screening
Local Limits Report

Potential Pollutants of Concern	Max Influent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Max Biosolids Conc. (mg/kg)	Criteria: Effluent (mg/L)	Criteria: AS / N Inhibition (mg/L)	Criteria: AD Inhibition (mg/L)	Criteria: H&S (mg/L)	Criteria: Biosolids (mg/kg)	Screening Process: Effluent ≥ 1/2 Effluent Criteria	Screening Process: Influent ≥ Effluent Criteria	Screening Process: Influent ≥ 1/4 AS / N Inhibition	Screening Process: Influent ≥ 1/500 AD Inhibition	Screening Process: Influent ≥ H & S Level	Screening Process: Biosolids ≥ 1/2 Biosolids Criteria	Pollutants of Concern
Molinate	NA	NA	NA	0.02	--	--	--	--	--	--	--	--	--	--	--
Oxamyl	NA	NA	NA	0.05	--	--	--	--	--	--	--	--	--	--	--
Picloram	NA	NA	NA	0.5	--	--	--	--	--	--	--	--	--	--	--
Polychlorinated biphenyls	ND	ND	NA	0.0005	--	--	--	--	N	N	--	--	--	--	N
Simazine	NA	NA	NA	0.004	--	--	--	--	--	--	--	--	--	--	--
Thiobencarb	NA	NA	NA	0.001	--	--	--	--	--	--	--	--	--	--	--
Toxaphene	ND	ND	NA	0.003	--	--	--	--	N	N	--	--	--	--	N
2,4,5-TP (Silvex)	NA	NA	NA	0.05	--	--	--	--	--	--	--	--	--	--	--
General Chemistry Parameters															
Ammonia as N	54.8	0.6	NA	4.5	480	1500	--	--	N	Y	N	Y	--	--	Y
BOD_5	1740	6	NA	20	--	--	--	--	N	Y	--	--	--	--	Y
Chloride	112	147	NA	140	180	--	--	--	Y	N	Y	--	--	--	Y
Chemical Oxygen Demand	NA	NA	NA	30	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Free	0.006	0.024	NA	0.0042	--	--	1.149	--	Y	Y	--	--	N	--	Y
Cyanide, Total	0.023	0.005	NA	0.15	0.1	1.0	--	--	N	N	N	Y	--	--	Y
Fluoride	1.7	0.5	NA	1.0	--	--	--	--	Y	Y	--	--	--	--	Y
Hardness	222	165	NA	50.0	--	--	--	--	Y	Y	--	--	--	--	Y
MBAS	NA	NA	NA	0.05	100	--	--	--	--	--	--	--	--	--	--
Nitrate + Nitrite as N	20.2	15.2	NA	10	--	--	--	--	Y	Y	--	--	--	--	Y
Nitrate as N	18.9	14.4	NA	2.9	--	--	--	--	Y	Y	--	--	--	--	Y
Sulfate	318	134	NA	150	--	500	--	--	Y	Y	--	Y	--	--	Y
Total Inorganic Nitrogen	138	18.1	NA	8.0	--	--	--	--	Y	N	--	--	--	--	Y
Total Dissolved Solids	1190	1220	NA	550	--	--	--	--	Y	Y	--	--	--	--	Y
Total Suspended Solids	1850	6	NA	20	--	--	--	--	N	Y	--	--	--	--	Y
Phenols	ND	ND	NA	--	4.0	--	--	--	--	--	N	--	--	--	N
Sulfide	NA	NA	NA	--	25	50	0.034	--	--	--	--	--	--	--	--

Notes:
mg/L = milligrams per liter; mg/kg = milligrams per kilogram; Max = Maximum; Conc = Concentration; ND = Not detected; NA = Not analyzed; "--" = Not applicable; Y = Yes; N = No
AS / N Inhibition = Most stringent values between activated sludge and nitrification inhibition criteria
AD Inhibition = Anaerobic deigestion inhibition criteria
PCBs = Polychlorinated Biphenyls; BOD_5 = 5-Day Biochemical Oxygen Demand; MBAS = Methylene Blue Active Substances
Total Trihalomethanes (THMs) = Sum of Bromoform, Chloroform, Bromodichloromethane, and Dibromochloromethane
Total Inorganic Nitrogen is sum of Total Kjeldahl Nitrogen, Nitrate and Nitrite concentrations
Activated Sludge Criteria for Surfactants is listed under MBAS
Total Dissolved Solids effluent limit is based on demonstration of maximum benefit (Section IV.C.1.b of NPDES permit CA8000409)

Table B-8
RP-4 POC Screening
Local Limits Report

Potential Pollutants of Concern	Max Influent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Max Biosolids Conc. (mg/kg)	Criteria: Effluent (mg/L)	AS / N Inhibition (mg/L)	AD Inhibition (mg/L)	H&S (mg/L)	Biosolids (mg/kg)	Screening Process: Effluent ≥ 1/2 Effluent Criteria	Influent ≥ Effluent Criteria	Influent ≥ 1/4 AS / N Inhibition	Influent ≥ 1/500 AD Inhibition	Influent ≥ H & S Level	Biosolids ≥ 1/2 Biosolids Criteria	Pollutants of Concern
Inorganics															
Aluminum	0.46	0.038	NA	0.2	–	–	–	–	N	Y	–	–	–	–	Y
Antimony	ND	ND	11.0	0.006	–	–	–	–	N	N	–	–	–	–	N
Arsenic	ND	ND	6.0	0.01	0.1	1.6	–	41	N	N	N	N	–	N	N
Barium	0.08	0.01	NA	1.0	–	–	–	–	N	N	–	–	–	–	N
Beryllium	ND	ND	ND	0.004	–	–	–	–	N	N	–	–	–	–	N
Boron	0.4	0.3	NA	0.75	–	–	–	–	N	N	–	–	–	–	N
Cadmium	ND	ND	ND	0.0017	1.0	20	–	39	N	N	N	N	–	N	N
Chromium	ND	0.0018	46.0	0.05	0.25	130	–	–	N	N	N	N	–	–	N
Chromium VI	NA	NA	NA	–	1.0	110	–	–	–	–	–	–	–	–	–
Cobalt	ND	ND	NA	0.2	–	–	–	–	N	N	–	–	–	–	N
Copper	0.07	0.0093	386	0.0182	0.05	40	–	1500	Y	Y	Y	N	–	N	Y
Iron	0.41	0.151	NA	0.3	–	–	–	–	Y	Y	–	–	–	–	Y
Lead	ND	ND	19.0	0.0041	0.5	340	–	300	N	N	N	N	–	N	N
Manganese	0.02	0.088	NA	0.05	–	–	–	–	Y	N	–	–	–	–	Y
Mercury	ND	ND	NA	0.002	0.1	–	–	17	N	N	N	–	–	–	N
Molybdenum	ND	0.005	11.0	–	–	–	–	75	–	–	–	–	–	N	N
Nickel	ND	0.004	20.0	0.1	0.25	10	–	420	N	N	N	N	–	N	N
Selenium	ND	ND	10.0	0.0041	–	–	–	100	N	N	–	–	–	N	N
Silver	0.01	ND	ND	0.05	13	13	–	–	N	N	N	N	–	–	N
Sodium	175	114	NA	110	–	–	–	–	Y	Y	–	–	–	–	Y
Thallium	ND	ND	ND	0.002	–	–	–	–	N	N	–	–	–	–	N
Zinc	0.2	0.04	986	5.0	0.08	400	–	2,800	N	N	Y	N	–	N	Y
Volatile Organics															
1,1,1-Trichloroethane	ND	ND	NA	0.2	–	–	2.759	–	N	N	–	–	N	–	N
1,1,2,2-Tetrachloroethane	ND	ND	NA	0.001	–	–	1.847	–	N	N	–	–	N	–	N
1,1,2-Trichloroethane	ND	ND	NA	0.005	–	–	1.601	–	N	N	–	–	N	–	N
1,1,2-Trichlorotrifluoroethane	ND	ND	NA	1.2	–	–	–	–	N	N	–	–	–	–	N
1,1-Dichloroethane	ND	ND	NA	0.005	–	–	1.685	–	N	N	–	–	N	–	N
1,1-Dichloroethene	ND	ND	NA	0.006	–	–	0.016	–	N	N	–	–	N	–	N
1,2-Dichlorobenzene	ND	ND	NA	0.6	0.23	0.23	–	–	N	N	N	N	–	–	N
1,2-Dichloroethane	ND	ND	NA	0.0005	–	–	0.168	–	N	N	–	–	N	–	N
1,2-Dichloropropane	ND	ND	NA	0.005	–	–	4.289	–	N	N	–	–	N	–	N
1,3-Dichlorobenzene	ND	ND	NA	–	5.0	–	–	–	–	–	N	–	–	–	N
1,3-Dichloropropene	ND	ND	NA	0.0005	–	–	–	–	N	N	–	–	–	–	N
1,4-Dichlorobenzene	ND	ND	NA	0.005	1.4	1.4	–	–	N	N	N	N	–	–	N
Acrolein	ND	ND	NA	–	–	–	0.047	–	–	–	–	–	N	–	N
Acrylonitrile	ND	ND	NA	–	5.0	5.0	4.822	–	–	–	N	N	N	–	N
Benzene	ND	ND	NA	0.001	100	–	0.014	–	N	N	N	–	N	–	N
Bromoform	ND	ND	NA	–	–	–	0.227	–	–	–	–	–	N	–	N
Bromodichloromethane	ND	0.032	NA	–	–	–	–	–	–	–	–	–	–	–	–
Bromomethane	ND	ND	NA	–	–	–	0.305	–	–	–	–	–	N	–	N
Carbon tetrachloride	ND	ND	NA	0.0005	2.0	2.0	0.011	–	N	N	N	N	N	–	N
Chlorobenzene	ND	ND	NA	0.07	0.96	0.96	2.29	–	N	N	N	N	N	–	N
Chloroethane	ND	ND	NA	–	–	–	5.88	–	–	–	–	–	N	–	N
Chloroform	ND	0.089	NA	–	1.0	1.0	0.06	–	–	–	N	N	N	–	N
Chloromethane	ND	ND	NA	–	3.3	3.3	0.557	–	–	–	N	N	N	–	N

Table B-8
RP-4 POC Screening
Local Limits Report

Potential Pollutants of Concern	Max Influent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Max Biosolids Conc. (mg/kg)	Criteria: Effluent (mg/L)	Criteria: AS / N Inhibition (mg/L)	Criteria: AD Inhibition (mg/L)	Criteria: H&S (mg/L)	Criteria: Biosolids (mg/kg)	Screening Process: Effluent ≥ 1/2 Effluent Criteria	Screening Process: Influent ≥ Effluent Criteria	Screening Process: Influent ≥ 1/4 AS / N Inhibition	Screening Process: Influent ≥ 1/500 AD Inhibition	Screening Process: Influent ≥ H & S Level	Screening Process: Biosolids ≥ 1/2 Biosolids Criteria	Pollutants of Concern
cis-1,2-Dichloroethene	ND	ND	NA	0.006	–	–	–	–	N	N	–	–	–	–	N
Dibromochloromethane	ND	0.007	NA	–	–	–	–	–	–	–	–	–	–	–	–
Dibromochloropropane	NA	NA	NA	0.0002	–	–	–	–	–	–	–	–	–	–	–
Ethylbenzene	ND	ND	NA	0.3	200	–	1.659	–	N	N	N	–	N	–	N
Ethylene dibromide (EDB)	NA	NA	NA	0.00005	–	–	–	–	–	–	–	–	–	–	–
Methylene Chloride	ND	ND	NA	0.005	–	–	4.139	–	N	N	–	–	N	–	N
MTBE	NA	NA	NA	0.005	–	–	–	–	–	–	–	–	–	–	–
Styrene	ND	ND	NA	0.1	–	–	–	–	N	N	–	–	–	–	N
Tetrachloroethene	ND	ND	NA	0.005	20	20	0.945	–	N	N	N	N	N	–	N
Toluene	ND	ND	NA	0.15	200	–	2.075	–	N	N	N	–	N	–	N
Total THMs	NA	0.128	NA	0.080	–	–	–	–	Y	N	–	–	–	–	Y
trans-1,2-Dichloroethene	ND	ND	NA	0.01	–	–	2.04	–	N	N	–	–	N	–	N
Trichloroethene	ND	ND	NA	0.005	1.0	1.0	0.026	–	N	N	N	N	N	–	N
Trichlorofluoromethane	ND	ND	NA	0.15	–	–	–	–	N	N	–	–	–	–	N
Vinyl chloride	ND	ND	NA	0.0005	–	–	0.012	–	N	N	–	–	N	–	N
Xylenes (total)	ND	ND	NA	1.75	–	–	–	–	N	N	–	–	–	–	N
Semivolatile Organics															
1,2,4-Trichlorobenzene	ND	ND	NA	0.005	–	–	–	–	N	N	–	–	–	–	N
1,2-Diphenylhydrazine	ND	ND	NA	–	5.0	–	–	–	–	–	N	–	–	–	N
2,4,6-Trichlorophenol	ND	ND	NA	–	50	–	–	–	–	–	N	–	–	–	N
2,4-Dichlorophenol	ND	ND	NA	–	64	–	–	–	–	–	N	–	–	–	N
2,4-Dimethylphenol	ND	ND	NA	–	40	–	–	–	–	–	N	–	–	–	N
2,4-Dinitrophenol	ND	ND	NA	–	150	–	–	–	–	–	N	–	–	–	N
2,4-Dinitrotoluene	ND	ND	NA	–	5.0	–	–	–	–	–	N	–	–	–	N
2-Chlorophenol	ND	ND	NA	–	5.0	–	–	–	–	–	N	–	–	–	N
Anthracene	ND	ND	NA	–	500	–	–	–	–	–	N	–	–	–	N
Benzo(a)pyrene	ND	ND	NA	0.0002	–	–	–	–	N	N	–	–	–	–	N
Bis(2-ethylhexyl)adipate	NA	NA	NA	0.4	–	–	–	–	–	–	–	–	–	–	–
Bis(2-ethylhexyl)phthalate	0.023	ND	NA	0.004	–	–	–	–	N	Y	–	–	–	–	Y
Hexachlorobenzene	ND	ND	NA	0.001	5.0	–	–	–	N	N	N	–	–	–	N
Hexachlorocyclopentadiene	ND	ND	NA	0.05	–	–	–	–	N	N	–	–	–	–	N
Naphthalene	ND	ND	NA	–	500	–	–	–	–	–	N	–	–	–	N
Nitrobenzene	ND	ND	NA	–	30	–	–	–	–	–	N	–	–	–	N
Pentachlorophenol	ND	ND	NA	0.001	0.2	0.2	–	–	N	N	N	N	–	–	N
Phenanthrene	ND	ND	NA	–	500	–	–	–	–	–	N	–	–	–	N
2,3,7,8-TCDD (Dioxin)	NA	NA	NA	0.00000003	–	–	–	–	–	–	–	–	–	–	–
Pests/Herbs															
Alachor	NA	NA	NA	0.002	–	–	–	–	–	–	–	–	–	–	–
Atrazine	NA	NA	NA	0.001	–	–	–	–	–	–	–	–	–	–	–
Bentazon	NA	NA	NA	0.018	–	–	–	–	–	–	–	–	–	–	–
Carbofuran	NA	NA	NA	0.018	–	–	–	–	–	–	–	–	–	–	–
Chlordane	ND	ND	NA	0.0001	–	–	–	–	N	N	–	–	–	–	N
2,4-D	NA	NA	NA	0.07	–	–	–	–	–	–	–	–	–	–	–
Dalapon	NA	NA	NA	0.2	–	–	–	–	–	–	–	–	–	–	–
Dinoseb	NA	NA	NA	0.007	–	–	–	–	–	–	–	–	–	–	–
Diquat	NA	NA	NA	0.02	–	–	–	–	–	–	–	–	–	–	–
Endothall	NA	NA	NA	0.1	–	–	–	–	–	–	–	–	–	–	–

Table B-8
RP-4 POC Screening
Local Limits Report

Potential Pollutants of Concern	Max Influent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Max Biosolids Conc. (mg/kg)	Criteria: Effluent (mg/L)	Criteria: AS / N Inhibition (mg/L)	Criteria: AD Inhibition (mg/L)	Criteria: H&S (mg/L)	Criteria: Biosolids (mg/kg)	Screening Process: Effluent ≥ 1/2 Effluent Criteria	Screening Process: Influent ≥ Effluent Criteria	Screening Process: Influent ≥ 1/4 AS / N Inhibition	Screening Process: Influent ≥ 1/500 AD Inhibition	Screening Process: Influent ≥ H & S Level	Screening Process: Biosolids ≥ 1/2 Biosolids Criteria	Pollutants of Concern
Endrin	ND	ND	NA	0.002	--	--	--	--	N	N	--	--	--	--	N
Glyphosate	NA	NA	NA	0.7	--	--	--	--	--	--	--	--	--	--	--
Heptachlor	ND	ND	NA	0.00001	--	--	--	--	N	N	--	--	--	--	N
Heptachlor epoxide	ND	ND	NA	0.00001	--	--	--	--	N	N	--	--	--	--	N
Lindane	NA	NA	NA	0.0002	--	--	--	--	--	--	--	--	--	--	--
Methoxychlor	NA	NA	NA	0.03	--	--	--	--	--	--	--	--	--	--	--
Molinate	NA	NA	NA	0.02	--	--	--	--	--	--	--	--	--	--	--
Oxamyl	NA	NA	NA	0.05	--	--	--	--	--	--	--	--	--	--	--
Picloram	NA	NA	NA	0.5	--	--	--	--	--	--	--	--	--	--	--
Polychlorinated biphenyls	ND	ND	NA	0.0005	--	--	--	--	N	N	--	--	--	--	N
Simazine	NA	NA	NA	0.004	--	--	--	--	--	--	--	--	--	--	--
Thiobencarb	NA	NA	NA	0.001	--	--	--	--	--	--	--	--	--	--	--
Toxaphene	ND	ND	NA	0.003	--	--	--	--	N	N	--	--	--	--	N
2,4,5-TP (Silvex)	NA	NA	NA	0.05	--	--	--	--	--	--	--	--	--	--	--
General Chemistry Parameters															
Ammonia as N	59.7	2.3	NA	4.5	480	1500	--	--	Y	Y	N	Y	--	--	Y
BOD_5	450	3	NA	20	--	--	--	--	N	Y	--	--	--	--	Y
Chloride	228	133	NA	140	180	--	--	--	Y	Y	Y	--	--	--	Y
COD	NA	NA	NA	30	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Free	0.006	ND	NA	0.0042	--	--	1.149	--	N	Y	--	--	N	--	Y
Cyanide, Total	0.023	0.009	NA	0.15	0.1	1.0	--	--	N	N	N	Y	--	--	Y
Fluoride	0.6	0.8	NA	1.0	--	--	--	--	Y	N	--	--	--	--	Y
Hardness	334	157	NA	50	--	--	--	--	Y	Y	--	--	--	--	Y
MBAS	NA	NA	NA	0.05	100	--	--	--	--	--	--	--	--	--	--
Nitrate + Nitrite as N	2.17	13.7	NA	10	--	--	--	--	Y	N	--	--	--	--	Y
Nitrate as N	1.7	13.2	NA	2.9	--	--	--	--	Y	N	--	--	--	--	Y
Sulfate	61	60	NA	150	--	500	500	--	N	N	--	Y	N	--	Y
Total Inorganic Nitrogen	98.6	16.1	NA	8.0	--	--	--	--	Y	N	--	--	--	--	Y
TDS	694	598	NA	550	--	--	--	--	Y	Y	--	--	--	--	Y
TSS	1740	7	NA	20	--	--	--	--	N	Y	--	--	--	--	Y
Phenols	ND	ND	NA	--	4.0	--	--	--	--	--	N	--	--	--	N
Sulfide	NA	NA	NA	--	25	50	--	0.034	--	--	--	--	--	--	--

Notes:
mg/L = milligrams per liter; mg/kg = milligrams per kilogram; Max = Maximum; Conc = Concentration; ND = Not detected; NA = Not analyzed; "--" = Not applicable; Y = Yes; N = No
AS / N Inhibition = Most stringent values between activated sludge and nitrification inhibition criteria
AD Inhibition = Anaerobic deigestion inhibition criteria
PCBs = Polychlorinated Biphenyls; BOD_5 = 5-Day Biochemical Oxygen Demand; MBAS = Methylene Blue Active Substances
Total Trihalomethanes (THMs) = Sum of Bromoform, Chloroform, Bromodichloromethane, and Dibromochloromethane
Total Inorganic Nitrogen is sum of Total Kjeldahl Nitrogen, Nitrate and Nitrite concentrations
Activated Sludge Criteria for Surfactants is listed under MBAS
Total Dissolved Solids effluent limit is based on demonstration of maximum benefit (Section IV.C.1.b of NPDES permit CA8000409)

Table B-9
RP-5 POC Screening
Local Limits Report

Potential Pollutants of Concern	Max Influent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Max Biosolids Conc. (mg/kg)	Criteria: Effluent (mg/L)	Criteria: AS / N Inhibition (mg/L)	Criteria: AD Inhibition (mg/L)	Criteria: H&S (mg/L)	Criteria: Biosolids (mg/kg)	Screening Process: Effluent ≥ 1/2 Effluent Criteria	Screening Process: Influent ≥ Effluent Criteria	Screening Process: Influent ≥ 1/4 AS / N Inhibition	Screening Process: Influent ≥ 1/500 AD Inhibition	Screening Process: Influent ≥ H & S Level	Screening Process: Biosolids ≥ 1/2 Biosolids Criteria	Pollutants of Concern
Inorganics															
Aluminum	0.7	0.059	NA	0.2	--	--	--	--	N	Y	--	--	--	--	Y
Antimony	ND	ND	ND	0.006	--	--	--	--	N	N	--	--	--	--	N
Arsenic	ND	ND	ND	0.01	0.1	1.6	--	41	N	N	N	N	--	N	N
Barium	0.1	0.053	NA	1.0	--	--	--	--	N	N	--	--	--	--	N
Beryllium	ND	ND	ND	0.004	--	--	--	--	N	N	--	--	--	--	N
Boron	0.4	0.3	NA	0.75	--	--	--	--	N	N	--	--	--	--	N
Cadmium	ND	0.0008	ND	0.0017	1.0	20	--	39	N	N	N	N	--	N	N
Chromium	ND	0.0017	38.0	0.05	0.25	130	--	--	N	N	N	N	--	--	N
Chromium VI	NA	NA	NA	--	1.0	110	--	--	--	--	--	--	--	--	--
Cobalt	ND	ND	NA	0.2	--	--	--	--	N	N	--	--	--	--	N
Copper	0.09	0.0096	484	0.0182	0.05	40	--	1500	Y	Y	Y	Y	--	N	Y
Iron	0.79	0.054	NA	0.3	--	--	--	--	N	Y	--	--	--	--	Y
Lead	ND	0.0021	17.0	0.0041	0.5	340	--	300	Y	N	N	N	--	N	Y
Manganese	0.04	0.067	NA	0.05	--	--	--	--	Y	N	--	--	--	--	Y
Mercury	0.0005	ND	NA	0.002	0.1	--	--	17	N	N	N	--	--	--	N
Molybdenum	ND	0.006	9.0	--	--	--	--	75	--	--	--	--	--	N	N
Nickel	ND	0.006	20.0	0.1	0.25	10	--	420	N	N	N	N	--	N	N
Selenium	ND	ND	21.0	0.01	--	--	--	100	N	N	--	--	--	N	N
Silver	ND	ND	ND	0.05	13	13	--	--	N	N	N	N	--	--	N
Sodium	153	117	NA	75	--	--	--	--	Y	Y	--	--	--	--	Y
Thallium	ND	ND	ND	0.002	--	--	--	--	N	N	--	--	--	--	N
Zinc	0.24	0.058	926	5.0	0.08	400	--	2,800	N	N	Y	N	--	N	Y
Volatile Organics															
1,1,1-Trichloroethane	ND	ND	NA	0.2	--	--	2.759	--	N	N	--	--	N	--	N
1,1,2,2-Tetrachloroethane	ND	ND	NA	0.001	--	--	1.847	--	N	N	--	--	N	--	N
1,1,2-Trichloroethane	ND	ND	NA	0.005	--	--	1.601	--	N	N	--	--	N	--	N
1,1,2-Trichlorotrifluoroethane	ND	ND	NA	1.2	--	--	--	--	N	N	--	--	--	--	N
1,1-Dichloroethane	ND	ND	NA	0.005	--	--	1.685	--	N	N	--	--	N	--	N
1,1-Dichloroethene	ND	ND	NA	0.006	--	--	0.016	--	N	N	--	--	N	--	N
1,2-Dichlorobenzene	ND	ND	NA	0.6	0.23	0.23	--	--	N	N	N	N	--	--	N
1,2-Dichloroethane	ND	ND	NA	0.0005	--	--	0.168	--	N	N	--	--	N	--	N
1,2-Dichloropropane	ND	ND	NA	0.005	--	--	4.289	--	N	N	--	--	N	--	N
1,3-Dichlorobenzene	ND	ND	NA	--	5.0	--	--	--	--	--	N	--	--	--	N
1,3-Dichloropropene	ND	ND	NA	0.0005	--	--	--	--	N	N	--	--	--	--	N
1,4-Dichlorobenzene	ND	ND	NA	0.005	1.4	1.4	--	--	N	N	N	N	--	--	N
Acrolein	ND	ND	NA	--	--	--	0.047	--	--	--	--	--	N	--	N
Acrylonitrile	ND	ND	NA	--	5.0	5.0	4.822	--	--	--	N	N	N	--	N
Benzene	ND	ND	NA	0.001	100	--	0.014	--	N	N	N	--	N	--	N
Bromodichloromethane	ND	0.04	NA	0.046	--	--	--	--	Y	N	--	--	--	--	Y
Bromoform	ND	0.003	NA	--	--	--	0.227	--	--	--	--	--	N	--	N
Bromomethane	ND	ND	NA	--	--	--	0.305	--	--	--	--	--	N	--	N
Carbon tetrachloride	ND	ND	NA	0.0005	2.0	2.0	0.011	--	N	N	N	N	N	--	N
Chlorobenzene	ND	ND	NA	0.07	0.96	0.96	2.29	--	N	N	N	N	N	--	N
Chloroethane	ND	ND	NA	--	--	--	5.88	--	--	--	--	--	N	--	N
Chloroform	0.007	0.066	NA	--	1.0	1.0	0.06	--	--	--	N	Y	N	--	Y
Chloromethane	ND	ND	NA	--	3.3	3.3	0.557	--	--	--	N	N	N	--	N
cis-1,2-Dichloroethene	ND	ND	NA	0.006	--	--	--	--	N	N	--	--	--	--	N

Table B-9
RP-5 POC Screening
Local Limits Report

Potential Pollutants of Concern	Max Influent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Max Biosolids Conc. (mg/kg)	Criteria: Effluent (mg/L)	Criteria: AS / N Inhibition (mg/L)	Criteria: AD Inhibition (mg/L)	Criteria: H&S (mg/L)	Criteria: Biosolids (mg/kg)	Screening Process: Effluent ≥ 1/2 Effluent Criteria	Screening Process: Influent ≥ Effluent Criteria	Screening Process: Influent ≥ 1/4 AS / N Inhibition	Screening Process: Influent ≥ 1/500 AD Inhibition	Screening Process: Influent ≥ H & S Level	Screening Process: Biosolids ≥ 1/2 Biosolids Criteria	Pollutants of Concern
Dibromochloromethane	ND	0.022	NA	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloropropane	NA	NA	NA	0.0002	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	ND	ND	NA	0.3	200	--	1.659	--	N	N	N	--	N	--	N
Ethylene dibromide (EDB)	NA	NA	NA	0.00005	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	ND	ND	NA	0.005	--	--	4.139	--	N	N	--	--	N	--	N
MTBE	NA	NA	NA	0.005	--	--	--	--	--	--	--	--	--	--	--
Styrene	ND	ND	NA	0.1	--	--	--	--	N	N	--	--	--	--	N
Tetrachloroethene	ND	ND	NA	0.005	20	20	0.945	--	N	N	N	N	N	--	N
Toluene	0.008	ND	NA	0.15	200	--	2.075	--	N	N	N	--	N	--	N
Total THMs	NA	0.114	NA	0.080	--	--	--	--	Y	--	--	--	--	--	Y
trans-1,2-Dichloroethene	ND	ND	NA	0.01	--	--	2.04	--	N	N	--	--	N	--	N
Trichloroethene	ND	ND	NA	0.005	1.0	1.0	0.026	--	N	N	N	N	N	--	N
Trichlorofluoromethane	ND	ND	NA	0.15	--	--	--	--	N	N	--	--	--	--	N
Vinyl chloride	ND	ND	NA	0.0005	--	--	0.012	--	N	N	--	--	N	--	N
Xylenes (total)	ND	ND	NA	1.75	--	--	--	--	N	N	--	--	--	--	N
Semivolatile Organics															
1,2,4-Trichlorobenzene	ND	ND	NA	0.005	--	--	--	--	N	N	--	--	--	--	N
1,2-Diphenylhydrazine	ND	ND	NA	--	5.0	--	--	--	--	--	N	--	--	--	N
2,4,6-Trichlorophenol	ND	ND	NA	--	50	--	--	--	--	--	N	--	--	--	N
2,4-Dichlorophenol	ND	ND	NA	--	64	--	--	--	--	--	N	--	--	--	N
2,4-Dimethylphenol	ND	ND	NA	--	40	--	--	--	--	--	N	--	--	--	N
2,4-Dinitrophenol	ND	ND	NA	--	150	--	--	--	--	--	N	--	--	--	N
2,4-Dinitrotoluene	ND	ND	NA	--	5.0	--	--	--	--	--	N	--	--	--	N
2-Chlorophenol	ND	ND	NA	--	5.0	--	--	--	--	--	N	--	--	--	N
Anthracene	ND	ND	NA	--	500	--	--	--	--	--	N	--	--	--	N
Benzo(a)pyrene	ND	ND	NA	0.0002	--	--	--	--	N	N	--	--	--	--	N
Bis(2-ethylhexyl)adipate	NA	NA	NA	0.4	--	--	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	0.017	ND	NA	0.004	--	--	--	--	N	Y	--	--	--	--	Y
Hexachlorobenzene	ND	ND	NA	0.001	5.0	--	--	--	N	N	N	--	--	--	N
Hexachlorocyclopentadiene	ND	ND	NA	0.05	--	--	--	--	N	N	--	--	--	--	N
Naphthalene	ND	ND	NA	--	500	--	--	--	--	--	N	--	--	--	N
Nitrobenzene	ND	ND	NA	--	30	--	--	--	--	--	N	--	--	--	N
Pentachlorophenol	ND	ND	NA	0.001	0.2	0.2	--	--	N	N	N	N	--	--	N
Phenanthrene	ND	ND	NA	--	500	--	--	--	--	--	N	--	--	--	N
2,3,7,8-TCDD (Dioxin)	ND	ND	NA	3E-08	--	--	--	--	N	N	--	--	--	--	N
Pests/Herbs															
Alachor	NA	NA	NA	0.002	--	--	--	--	--	--	--	--	--	--	--
Atrazine	NA	NA	NA	0.001	--	--	--	--	--	--	--	--	--	--	--
Bentazon	NA	NA	NA	0.018	--	--	--	--	--	--	--	--	--	--	--
Carbofuran	NA	NA	NA	0.018	--	--	--	--	--	--	--	--	--	--	--
Chlordane	ND	ND	NA	0.0001	--	--	--	--	N	N	--	--	--	--	N
2,4-D	NA	NA	NA	0.07	--	--	--	--	--	--	--	--	--	--	--
Dalapon	NA	NA	NA	0.2	--	--	--	--	--	--	--	--	--	--	--
Dinoseb	NA	NA	NA	0.007	--	--	--	--	--	--	--	--	--	--	--
Diquat	NA	NA	NA	0.02	--	--	--	--	--	--	--	--	--	--	--
Endothall	NA	NA	NA	0.1	--	--	--	--	--	--	--	--	--	--	--
Endrin	ND	ND	NA	0.002	--	--	--	--	N	N	--	--	--	--	N
Glyphosate	NA	NA	NA	0.7	--	--	--	--	--	--	--	--	--	--	--

Table B-9
RP-5 POC Screening
Local Limits Report

Potential Pollutants of Concern	Max Influent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Max Biosolids Conc. (mg/kg)	Criteria: Effluent (mg/L)	Criteria: AS / N Inhibition (mg/L)	Criteria: AD Inhibition (mg/L)	Criteria: H&S (mg/L)	Criteria: Biosolids (mg/kg)	Screening Process: Effluent ≥ 1/2 Effluent Criteria	Screening Process: Influent ≥ Effluent Criteria	Screening Process: Influent ≥ 1/4 AS / N Inhibition	Screening Process: Influent ≥ 1/500 AD Inhibition	Screening Process: Influent ≥ H & S Level	Screening Process: Biosolids ≥ 1/2 Biosolids Criteria	Pollutants of Concern
Heptachlor	ND	ND	NA	0.00001	--	--	--	--	N	N	--	--	--	--	N
Heptachlor epoxide	ND	ND	NA	0.00001	--	--	--	--	N	N	--	--	--	--	N
Lindane	NA	NA	NA	0.0002	--	--	--	--	--	--	--	--	--	--	--
Methoxychlor	NA	NA	NA	0.03	--	--	--	--	--	--	--	--	--	--	--
Molinate	NA	NA	NA	0.02	--	--	--	--	--	--	--	--	--	--	--
Oxamyl	NA	NA	NA	0.05	--	--	--	--	--	--	--	--	--	--	--
Picloram	NA	NA	NA	0.5	--	--	--	--	--	--	--	--	--	--	--
Polychlorinated biphenyls	ND	ND	NA	0.0005	--	--	--	--	N	N	--	--	--	--	N
Simazine	NA	NA	NA	0.004	--	--	--	--	--	--	--	--	--	--	--
Thiobencarb	NA	NA	NA	0.001	--	--	--	--	--	--	--	--	--	--	--
Toxaphene	ND	ND	NA	0.003	--	--	--	--	N	N	--	--	--	--	N
2,4,5-TP (Silvex)	NA	NA	NA	0.05	--	--	--	--	--	--	--	--	--	--	--
General Chemistry Parameters															
Ammonia as N	81	1.8	NA	4.5	480	1500	--	--	N	Y	N	Y	--	--	Y
BOD5	870	4	NA	20	--	--	--	--	N	Y	--	--	--	--	Y
Chloride	218	162	NA	75	180	--	--	--	Y	Y	Y	--	--	--	Y
COD	NA	NA	NA	15	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Free	0.006	0.004	NA	0.0046	--	--	1.149	--	Y	Y	--	--	N	--	Y
Cyanide, Total	0.016	0.006	NA	0.15	0.1	1.0	--	--	N	N	N	Y	--	--	Y
Fluoride	0.4	0.9	NA	1.0	--	--	--	--	Y	N	--	--	--	--	Y
Hardness	243	225	NA	50.0	--	--	--	--	Y	Y	--	--	--	--	Y
MBAS	NA	NA	NA	0.05	100	--	--	--	--	--	--	--	--	--	--
Nitrate + Nitrite as N	6.9	14.3	NA	10	--	--	--	--	Y	N	--	--	--	--	Y
Nitrate as N	6	13.6	NA	2.9	--	--	--	--	Y	Y	--	--	--	--	Y
Sulfate	114	79	NA	60	--	500	--	--	Y	Y	--	Y	--	--	Y
Total Inorganic Nitrogen	98.9	16.2	NA	8.0	--	--	--	--	Y	Y	--	--	--	--	Y
TDS	846	640	NA	550	--	--	--	--	Y	Y	--	--	--	--	Y
TSS	1310	10	NA	20	--	--	--	--	Y	Y	--	--	--	--	Y
Phenols	ND	ND	NA	--	4.0	--	--	--	--	--	N	--	--	--	N
Sulfide	NA	NA	NA	--	25	50	0.034	--	--	--	--	--	--	--	--

Notes:
mg/L = milligrams per liter; mg/kg = milligrams per kilogram; Max = Maximum; Conc = Concentration; ND = Not detected; NA = Not analyzed; "--" = Not applicable; Y = Yes; N = No
AS / N Inhibition = Most stringent values between activated sludge and nitrification inhibition criteria
AD Inhibition = Anaerobic deigestion inhibition criteria
PCBs = Polychlorinated Biphenyls; BOD_5 = 5-Day Biochemical Oxygen Demand; MBAS = Methylene Blue Active Substances
Total Trihalomethanes (THMs) = Sum of Bromoform, Chloroform, Bromodichloromethane, and Dibromochloromethane
Total Inorganic Nitrogen is sum of Total Kjeldahl Nitrogen, Nitrate and Nitrite concentrations
Activated Sludge Criteria for Surfactants is listed under MBAS
Total Dissolved Solids effluent limit is based on demonstration of maximum benefit (Section IV.C.1.b of NPDES permit CA8000409)

Table B-10
CCWRF POC Screening
Local Limits Report

Potential Pollutants of Concern	Max Influent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Max Biosolids Conc. (mg/kg)	Criteria: Effluent (mg/L)	Criteria: AS / N Inhibition (mg/L)	Criteria: AD Inhibition (mg/L)	Criteria: H&S (mg/L)	Criteria: Biosolids (mg/kg)	Screening Process: Effluent ≥ 1/2 Effluent Criteria	Screening Process: Influent ≥ Effluent Criteria	Screening Process: Influent ≥ 1/4 AS / N Inhibition	Screening Process: Influent ≥ 1/500 AD Inhibition	Screening Process: Influent ≥ H & S Level	Screening Process: Biosolids ≥ 1/2 Biosolids Criteria	Pollutants of Concern
Inorganics															
Aluminum	0.84	0.099	NA	0.2	--	--	--	--	N	Y	--	--	--	--	Y
Antimony	ND	0.001	ND	0.006	--	--	--	--	N	N	--	--	--	--	N
Arsenic	ND	ND	ND	0.01	0.1	1.6	--	41	N	N	N	N	--	N	N
Barium	0.1	0.023	NA	1.0	--	--	--	--	N	N	--	--	--	--	N
Beryllium	ND	ND	ND	0.004	--	--	--	--	N	N	--	--	--	--	N
Boron	0.4	0.4	NA	0.75	--	--	--	--	Y	N	--	--	--	--	Y
Cadmium	ND	ND	ND	0.004	1.0	20	--	39	N	N	N	N	--	N	N
Chromium	ND	0.0024	38.0	0.05	0.25	130	--	--	N	N	N	N	--	--	N
Chromium VI	NA	NA	NA	--	1.0	110	--	--	--	--	--	--	--	--	--
Cobalt	ND	ND	NA	0.2	--	--	--	--	N	N	--	--	--	--	N
Copper	0.13	0.0143	484	0.037	0.05	40	--	1500	N	Y	Y	Y	--	N	Y
Iron	1.06	0.052	NA	0.3	--	--	--	--	N	Y	--	--	--	--	Y
Lead	ND	ND	17.0	0.015	0.5	340	--	300	N	N	N	N	--	N	N
Manganese	0.2	0.028	NA	0.05	--	--	--	--	Y	Y	--	--	--	--	Y
Mercury	0.0008	ND	NA	0.002	0.1	--	--	17	N	N	N	--	--	--	N
Molybdenum	0.08	0.06	9.0	--	--	--	--	75	--	--	--	--	--	N	N
Nickel	ND	0.012	20.0	0.1	0.25	10	--	420	N	N	N	N	--	N	N
Selenium	ND	0.002	21.0	0.01	--	--	--	100	N	N	--	--	--	N	N
Silver	ND	ND	ND	0.05	13	13	--	--	N	N	N	N	--	--	N
Sodium	120	133	NA	110	--	--	--	--	Y	Y	--	--	--	--	Y
Thallium	ND	ND	ND	0.002	--	--	--	--	N	N	--	--	--	--	N
Zinc	0.62	0.101	926	5.0	0.08	400	--	2,800	N	N	Y	N	--	N	Y
Volatile Organics															
1,1,1-Trichloroethane	ND	ND	NA	0.2	--	--	2.759	--	N	N	--	--	N	--	N
1,1,2,2-Tetrachloroethane	ND	ND	NA	0.001	--	--	1.847	--	N	N	--	--	N	--	N
1,1,2-Trichloroethane	ND	ND	NA	0.005	--	--	1.601	--	N	N	--	--	N	--	N
1,1,2-Trichlorotrifluoroethane	ND	ND	NA	1.2	--	--	--	--	N	N	--	--	--	--	N
1,1-Dichloroethane	ND	ND	NA	0.005	--	--	1.685	--	N	N	--	--	N	--	N
1,1-Dichloroethene	ND	ND	NA	0.006	--	--	0.016	--	N	N	--	--	N	--	N
1,2-Dichlorobenzene	ND	ND	NA	0.6	0.23	0.23	--	--	N	N	N	N	--	--	N
1,2-Dichloroethane	ND	ND	NA	0.0005	--	--	0.168	--	N	N	--	--	N	--	N
1,2-Dichloropropane	ND	ND	NA	0.005	--	--	4.289	--	N	N	--	--	N	--	N
1,3-Dichlorobenzene	ND	ND	NA	--	5.0	--	--	--	--	--	N	--	--	--	N
1,3-Dichloropropene	ND	ND	NA	0.0005	--	--	--	--	N	N	--	--	--	--	N
1,4-Dichlorobenzene	ND	ND	NA	0.005	1.4	1.4	--	--	N	N	N	N	--	--	N
Acrolein	ND	ND	NA	--	--	--	0.047	--	--	--	--	--	N	--	N
Acrylonitrile	ND	ND	NA	--	5.0	5.0	4.822	--	--	--	N	N	N	--	N
Benzene	0.189	ND	NA	0.001	100	--	0.014	--	N	Y	N	--	Y	--	Y
Bromodichloromethane	ND	0.053	NA	--	--	--	--	--	--	--	--	--	--	--	--
Bromoform	ND	0.023	NA	--	--	--	0.227	--	--	--	--	--	N	--	N
Bromomethane	ND	ND	NA	--	--	--	0.305	--	--	--	--	--	N	--	N
Carbon tetrachloride	ND	ND	NA	0.0005	2.0	2.0	0.011	--	N	N	N	N	N	--	N
Chlorobenzene	ND	ND	NA	0.07	0.96	0.96	2.29	--	N	N	N	N	N	--	N
Chloroethane	ND	ND	NA	--	--	--	5.88	--	--	--	--	--	N	--	N
Chloroform	ND	0.067	NA	--	1.0	1.0	0.06	--	--	--	N	N	N	--	N
Chloromethane	ND	ND	NA	--	3.3	3.3	0.557	--	--	--	N	N	N	--	N
cis-1,2-Dichloroethene	ND	ND	NA	0.006	--	--	--	--	N	N	--	--	--	--	N

Table B-10
CCWRF POC Screening
Local Limits Report

Potential Pollutants of Concern	Max Influent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Max Biosolids Conc. (mg/kg)	Criteria: Effluent (mg/L)	Criteria: AS / N Inhibition (mg/L)	Criteria: AD Inhibition (mg/L)	Criteria: H&S (mg/L)	Criteria: Biosolids (mg/kg)	Screening Process: Effluent ≥ 1/2 Effluent Criteria	Screening Process: Influent ≥ Effluent Criteria	Screening Process: Influent ≥ 1/4 AS / N Inhibition	Screening Process: Influent ≥ 1/500 AD Inhibition	Screening Process: Influent ≥ H & S Level	Screening Process: Biosolids ≥ 1/2 Biosolids Criteria	Pollutants of Concern
Dibromochloromethane	ND	0.06	NA	--	--	--	--	--	--	--	--	--	--	--	--
Dibromodichloropropane	NA	NA	NA	0.0002	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	1.02	ND	NA	0.3	200	--	1.659	--	N	Y	N	--	N	--	Y
Ethylene dibromide (EDB)	NA	NA	NA	0.00005	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	ND	ND	NA	0.005	--	--	4.139	--	N	N	--	--	N	--	N
MTBE	NA	NA	NA	0.005	--	--	--	--	--	--	--	--	--	--	--
Styrene	ND	ND	NA	0.1	--	--	--	--	N	N	--	--	--	--	N
Tetrachloroethene	ND	ND	NA	0.005	20	20	0.945	--	N	N	N	N	N	--	N
Toluene	3.08	ND	NA	0.15	200	--	2.075	--	N	Y	N	--	Y	--	Y
Total THMs	NA	0.152	NA	0.080	--	--	--	--	Y	--	--	--	--	--	Y
trans-1,2-Dichloroethene	ND	ND	NA	0.01	--	--	2.04	--	N	N	--	--	N	--	N
Trichloroethene	0.062	ND	NA	0.005	--	1.0	0.026	--	N	Y	--	Y	Y	--	Y
Trichlorofluoromethane	ND	ND	NA	0.15	--	--	--	--	N	N	--	--	--	--	N
Vinyl chloride	ND	ND	NA	0.0005	--	--	0.012	--	N	N	--	--	N	--	N
Xylenes (total)	ND	ND	NA	1.75	--	--	--	--	N	N	--	--	--	--	N
Semivolatile Organics															
1,2,4-Trichlorobenzene	ND	ND	NA	0.005	--	--	--	--	N	N	--	--	--	--	N
1,2-Diphenylhydrazine	ND	ND	NA	--	5.0	--	--	--	--	--	N	--	--	--	N
2,4,6-Trichlorophenol	ND	ND	NA	--	50	--	--	--	--	--	N	--	--	--	N
2,4-Dichlorophenol	ND	ND	NA	--	64	--	--	--	--	--	N	--	--	--	N
2,4-Dimethylphenol	ND	ND	NA	--	40	--	--	--	--	--	N	--	--	--	N
2,4-Dinitrophenol	ND	ND	NA	--	150	--	--	--	--	--	N	--	--	--	N
2,4-Dinitrotoluene	ND	ND	NA	--	5.0	--	--	--	--	--	N	--	--	--	N
2-Chlorophenol	ND	ND	NA	--	5.0	--	--	--	--	--	N	--	--	--	N
Anthracene	ND	ND	NA	--	500	--	--	--	--	--	N	--	--	--	N
Benzo(a)pyrene	ND	ND	NA	0.0002	--	--	--	--	N	N	--	--	--	--	N
Bis(2-ethylhexyl)adipate	NA	NA	NA	0.4	--	--	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	0.018	0.006	NA	0.004	--	--	--	--	Y	Y	--	--	--	--	Y
Hexachlorobenzene	ND	ND	NA	0.001	5.0	--	--	--	N	N	N	--	--	--	N
Hexachlorocyclopentadiene	ND	ND	NA	0.05	--	--	--	--	N	N	--	--	--	--	N
Naphthalene	ND	ND	NA	--	500	--	--	--	--	--	N	--	--	--	N
Nitrobenzene	ND	ND	NA	--	30	--	--	--	--	--	N	--	--	--	N
Pentachlorophenol	ND	ND	NA	0.001	0.2	0.2	--	--	N	N	N	N	--	--	N
Phenanthrene	ND	ND	NA	--	500	--	--	--	--	--	N	--	--	--	N
2,3,7,8-TCDD (Dioxin)	ND	ND	NA	0.00000003	--	--	--	--	N	N	--	--	--	--	N
Pests/Herbs															
Alachor	NA	NA	NA	0.002	--	--	--	--	--	--	--	--	--	--	--
Atrazine	NA	NA	NA	0.001	--	--	--	--	--	--	--	--	--	--	--
Bentazon	NA	NA	NA	0.018	--	--	--	--	--	--	--	--	--	--	--
Carbofuran	NA	NA	NA	0.018	--	--	--	--	--	--	--	--	--	--	--
Chlordane	ND	ND	NA	0.0001	--	--	--	--	N	N	--	--	--	--	N
2,4-D	NA	NA	NA	0.07	--	--	--	--	--	--	--	--	--	--	--
Dalapon	NA	NA	NA	0.2	--	--	--	--	--	--	--	--	--	--	--
Dinoseb	NA	NA	NA	0.007	--	--	--	--	--	--	--	--	--	--	--
Diquat	NA	NA	NA	0.02	--	--	--	--	--	--	--	--	--	--	--
Endothall	NA	NA	NA	0.1	--	--	--	--	--	--	--	--	--	--	--
Endrin	NA	NA	NA	0.002	--	--	--	--	--	--	--	--	--	--	--
Glyphosate	NA	NA	NA	0.7	--	--	--	--	--	--	--	--	--	--	--

Table B-10
CCWRF POC Screening
Local Limits Report

Potential Pollutants of Concern	Max Influent Conc. (mg/L)	Max Effluent Conc. (mg/L)	Max Biosolids Conc. (mg/kg)	Criteria: Effluent (mg/L)	Criteria: AS / N Inhibition (mg/L)	Criteria: AD Inhibition (mg/L)	Criteria: H&S (mg/L)	Criteria: Biosolids (mg/kg)	Screening Process: Effluent ≥ 1/2 Effluent Criteria	Screening Process: Influent ≥ Effluent Criteria	Screening Process: Influent ≥ 1/4 AS / N Inhibition	Screening Process: Influent ≥ 1/500 AD Inhibition	Screening Process: Influent ≥ H & S Level	Screening Process: Biosolids ≥ 1/2 Biosolids Criteria	Pollutants of Concern
Heptachlor	ND	ND	NA	0.00001	–	–	–	–	N	N	–	–	–	–	N
Heptachlor epoxide	ND	ND	NA	0.00001	–	–	–	–	N	N	–	–	–	–	N
Lindane	NA	NA	NA	0.0002	–	–	–	–	–	–	–	–	–	–	–
Methoxychlor	NA	NA	NA	0.03	–	–	–	–	–	–	–	–	–	–	–
Molinate	NA	NA	NA	0.02	–	–	–	–	–	–	–	–	–	–	–
Oxamyl	NA	NA	NA	0.05	–	–	–	–	–	–	–	–	–	–	–
Picloram	NA	NA	NA	0.5	–	–	–	–	–	–	–	–	–	–	–
Polychlorinated biphenyls	NA	NA	NA	0.0005	–	–	–	–	–	–	–	–	–	–	–
Simazine	NA	NA	NA	0.004	–	–	–	–	–	–	–	–	–	–	–
Thiobencarb	NA	NA	NA	0.001	–	–	–	–	–	–	–	–	–	–	–
Toxaphene	ND	ND	NA	0.003	–	–	–	–	N	N	–	–	–	–	N
2,4,5-TP (Silvex)	NA	NA	NA	0.05	–	–	–	–	–	–	–	–	–	–	–
General Chemistry Parameters															
Ammonia as N	53.5	3.9	NA	4.5	480	1500	–	–	Y	Y	N	Y	–	–	Y
BOD5	855	3	NA	20	–	–	–	–	N	Y	–	–	–	–	Y
Chloride	222	163	NA	140	180	–	–	–	Y	Y	Y	–	–	–	Y
COD	NA	NA	NA	30	–	–	–	–	–	–	–	–	–	–	–
Cyanide, Free	0.005	0.005	NA	0.0043	–	–	1.149	–	Y	Y	–	–	N	–	Y
Cyanide, Total	0.017	0.006	NA	0.15	0.1	1.0	–	–	N	N	N	Y	–	–	Y
Fluoride	0.3	0.6	NA	1.0	–	–	–	–	Y	N	–	–	–	–	Y
Hardness	479	204	NA	50.0	–	–	–	–	Y	Y	–	–	–	–	Y
MBAS	NA	NA	NA	0.05	100	–	–	–	–	–	–	–	–	–	–
Nitrate + Nitrite as N	5.11	8.4	NA	10	–	–	–	–	Y	N	–	–	–	–	Y
Nitrate as N	4.7	7.8	NA	2.9	–	–	–	–	Y	Y	–	–	–	–	Y
Sulfate	184	108	NA	150	–	500	–	–	Y	Y	Y	Y	–	–	Y
Total Inorganic Nitrogen	83.7	10.6	NA	8.0	–	–	–	–	Y	Y	–	–	–	–	Y
TDS	934	632	NA	550	–	–	–	–	Y	Y	–	–	–	–	Y
TSS	1150	22	NA	20	–	–	–	–	Y	Y	–	–	–	–	Y
Phenols	ND	ND	NA	–	4.0	–	–	–	–	–	N	–	–	–	N
Sulfide	NA	NA	NA	–	25	50	0.034	–	–	–	–	–	–	–	–

Notes:
mg/L = milligrams per liter; mg/kg = milligrams per kilogram; Max = Maximum; Conc = Concentration; ND = Not detected; NA = Not analyzed; "–" = Not applicable; Y = Yes; N = No
AS / N Inhibition = Most stringent values between activated sludge and nitrification inhibition criteria
AD Inhibition = Anaerobic deigestion inhibition criteria
PCBs = Polychlorinated Biphenyls; BOD_5 = 5-Day Biochemical Oxygen Demand; MBAS = Methylene Blue Active Substances
Total Trihalomethanes (THMs) = Sum of Bromoform, Chloroform, Bromodichloromethane, and Dibromochloromethane
Total Inorganic Nitrogen is sum of Total Kjeldahl Nitrogen, Nitrate and Nitrite concentrations
Activated Sludge Criteria for Surfactants is listed under MBAS
Total Dissolved Solids effluent limit is based on demonstration of maximum benefit (Section IV.C.1.b of NPDES permit CA8000409)

Table B-11
Potential Pollutants of Concern
Local Limits Report

POC	Source
Metals	
Aluminum	POC Screening - Effluent Criteria
Arsenic	USEPA National POC
Boron	POC Screening - Effluent Criteria
Cadmium	USEPA National POC
Chromium	USEPA National POC
Copper	POC Screening - Effluent and Inhibition Criteria and USEPA National POC
Iron	POC Screening - Effluent Criteria
Lead	POC Screening - Effluent Criteria and USEPA National POC
Manganese	POC Screening - Effluent Criteria
Mercury	USEPA National POC
Molybdenum	USEPA National POC
Nickel	USEPA National POC
Selenium	USEPA National POC
Silver	USEPA National POC
Sodium	POC Screening - Effluent Criteria
Zinc	POC Screening - Effluent Criteria and USEPA National POC
Conventional Pollutants	
Ammonia	USEPA National POC
BOD_5	POC Screening - Effluent Criteria and USEPA National POC
Chloride	POC Screening - Effluent Criteria
Cyanide, free	POC Screening - Effluent Criteria
Cyanide, total	POC Screening - Inhibition Criteria and USEPA National POC
Fluoride	POC Screening - Effluent Criteria
Hardness	POC Screening - Effluent Criteria
Total Nitrogen	POC Screening - Effluent Criteria (for nitrate+nitrite)
Sulfate	POC Screening - Effluent and Inhibition Criteria
TDS	POC Screening - Effluent Criteria
TSS	POC Screening - Effluent Criteria and USEPA National POC
Organics	
Toluene	POC Screening - Effluent and H&S Criteria
Bis(2-Ethylhexyl)phthalate	POC Screening - Effluent Criteria

Notes:
POC = Pollutants of Concern
H&S = Health and Safety
BOD_5 = 5-Day Biochemical Oxygen Demand
TDS = Total Dissolved Solids
TSS = Total Suspended Solids
THMs = Trihalomethanes, consisting of bromoform, chloroform, bromodichloromethane, and dibromochloromethane
Total Nitrogen = total Kjeldahl nitrogen, nitrate, and nitrite

ARCADIS

Appendix C

Flows and Loadings

Table C-1
Influent Loading Summary
Local Limits Report

Parameter	RP-1					
	# Detects/ # Results	Avg Conc (mg/L)	Max Conc (mg/L)	Avg Flow (mgd)	Avg Influent Loading (lb/day)	Max Influent Loading (lb/day)
Metals						
Aluminum	8 / 8	0.84	1.21	27.0	189	272
Arsenic	0 / 14	0.005	--	27.0	1.13	--
Boron	24 / 24	0.27	0.3	27.0	60.8	67.6
Cadmium	0 / 14	0.005	--	27.0	1.13	--
Chromium	0 / 14	0.005	--	27.0	1.13	--
Copper	14 / 14	0.064	0.08	27.0	14.4	18.0
Iron	8 / 8	1.79	2.62	27.0	403	590
Lead	0 / 14	0.01	--	27.0	2.25	--
Manganese	7 / 8	0.031	0.04	27.0	6.98	9.01
Mercury	1 / 14	0.00029	0.00080	27.0	0.065	0.180
Molybdenum	4 / 8	0.009	0.02	27.0	2.03	4.50
Nickel	0 / 14	0.005	--	27.0	1.13	--
Selenium	0 / 14	0.01	--	27.0	2.25	--
Silver	0 / 14	0.005	--	27.0	1.13	--
Sodium	24 / 24	91	100	27.0	20,491	22,518
Zinc	14 / 14	0.19	0.24	27.0	42.8	54.0
Conventional Pollutants						
Ammonia	139 / 139	29	53	27.0	6,625	11,867
BOD_5	12 / 12	566	1740	27.0	127,508	391,813
Chloride	24 / 24	87	103	27.0	19,497	23,194
Cyanide (free)	1 / 24	0.0011	0.0030	27.0	0.248	0.676
Cyanide (total)	7 / 8	0.011	0.023	27.0	2.48	5.18
Fluoride	16 / 16	0.28	0.4	27.0	63.1	90.1
Hardness	16 / 16	178	197	27.0	40,082	44,360
Nitrite	69 / 78	0.35	1.0	27.0	78.8	225
Nitrate	73 / 78	0.54	1.5	27.0	121	338
Sulfate	24 / 24	61	318	27.0	13,736	71,607
Total Inorganic Nitrogen	69 / 78	30	53	27.0	6824	11935
TDS	76 / 76	472	510	27.0	106,285	114,842
TDS (fixed)	9 / 9	414	442	27.0	93,225	99,530
TSS	139 / 139	458	1220	27.0	103,223	274,720
Organics						
Toluene	0 / 4	0.005	--	27.0	1.13	--
Bis(2-Ethylhexyl)phthalate	2 / 9	0.007	0.014	27.0	1.58	3.15

Table C-1
Influent Loading Summary
Local Limits Report

Parameter	# Detects/ # Results	Avg Conc (mg/L)	Max Conc (mg/L)	Avg Flow (mgd)	Avg Influent Loading (lb/day)	Max Influent Loading (lb/day)
	RP-4					
Metals						
Aluminum	8 / 8	0.41	0.46	10.1	34.5	38.7
Arsenic	0 / 14	0.005	--	10.1	0.421	--
Boron	26 / 26	0.26	0.40	10.1	21.9	33.7
Cadmium	0 / 14	0.005	--	10.1	0.421	--
Chromium	0 / 14	0.005	--	10.1	0.421	--
Copper	14 / 14	0.048	0.06	10.1	4.04	5.05
Iron	8 / 8	0.36	0.41	10.1	30.3	34.5
Lead	0 / 14	0.01	--	10.1	0.842	--
Manganese	6 / 8	0.018	0.02	10.1	1.52	1.68
Mercury	0 / 14	0.00025	--	10.1	0.021	--
Molybdenum	0 / 8	0.005	--	10.1	0.421	--
Nickel	0 / 14	0.005	--	10.1	0.421	--
Selenium	0 / 14	0.01	--	10.1	0.842	--
Silver	0 / 15	0.005	--	10.1	0.421	--
Sodium	25 / 25	101	175	10.1	8,508	14,741
Zinc	14 / 14	0.16	0.20	10.1	13.5	16.8
Conventional Pollutants						
Ammonia	139 / 139	41	60	10.1	3,429	5,029
BOD_5	12 / 12	351	450	10.1	29,566	37,905
Chloride	26 / 26	112	228	10.1	9,434	19,205
Cyanide (free)	1 / 25	0.001	0.002	10.1	0.084	0.168
Cyanide (total)	7 / 9	0.011	0.023	10.1	0.927	1.94
Fluoride	16 / 16	0.26	0.40	10.1	21.9	33.7
Hardness	16 / 16	174	207	10.1	14,657	17,436
Nitrite	31 / 80	0.07	0.47	10.1	5.90	39.6
Nitrate	55 / 80	0.19	1.7	10.1	16.0	143
Sulfate	26 / 26	51	61	10.1	4,296	5,138
Total Inorganic Nitrogen	31 / 80	41	61	10.1	3454	5114
TDS	80 / 80	508	612	10.1	42,791	51,551
TDS (fixed)	8 / 8	434	452	10.1	36,558	38,074
TSS	139 / 139	342	715	10.1	28,832	60,227
Organics						
Toluene	0 / 4	0.005	--	10.1	0.421	--
Bis(2-Ethylhexyl)phthalate	2 / 9	0.009	0.023	10.1	0.758	1.94

Table C-1
Influent Loading Summary
Local Limits Report

	RP-5					
Parameter	**# Detects/ # Results**	**Avg Conc (mg/L)**	**Max Conc (mg/L)**	**Avg Flow (mgd)**	**Avg Influent Loading (lb/day)**	**Max Influent Loading (lb/day)**
Metals						
Aluminum	9 / 9	0.40	0.7	8.0	26.9	46.7
Arsenic	0 / 15	0.005	--	8.0	0.334	--
Boron	25 / 25	0.27	0.3	8.0	17.9	20.0
Cadmium	0 / 15	0.005	--	8.0	0.334	--
Chromium	0 / 15	0.005	--	8.0	0.334	--
Copper	15 / 15	0.059	0.08	8.0	3.96	5.34
Iron	9 / 9	0.35	0.62	8.0	23.4	41.4
Lead	0 / 15	0.01	--	8.0	0.667	--
Manganese	8 / 9	0.023	0.04	8.0	1.56	2.67
Mercury	0 / 15	0.00025	--	8.0	0.017	--
Molybdenum	0 / 9	0.005	--	8.0	0.334	--
Nickel	0 / 15	0.005	--	8.0	0.334	--
Selenium	0 / 15	0.01	--	8.0	0.667	--
Silver	0 / 15	0.005	--	8.0	0.334	--
Sodium	25 / 25	87	97	8.0	5,786	6,472
Zinc	15 / 15	0.14	0.20	8.0	9.34	13.3
Conventional Pollutants						
Ammonia	134 / 134	35	81	8.0	2,302	5,404
BOD_5	12 / 12	294	385	8.0	19,582	25,687
Chloride	25 / 25	114	153	8.0	7,606	10,208
Cyanide (free)	1 / 25	0.001	0.002	8.0	0.067	0.133
Cyanide (total)	7 / 9	0.009	0.016	8.0	0.607	1.07
Fluoride	16 / 16	0.22	0.3	8.0	14.7	20.0
Hardness	16 / 16	202	235	8.0	13,477	15,679
Nitrite	24 / 78	0.04	0.19	8.0	2.67	12.7
Nitrate	39 / 78	0.16	1.2	8.0	10.9	80.1
Sulfate	25 / 25	46	114	8.0	3,069	7,606
Total Inorganic Nitrogen	24 / 78	35	81	8.0	2316	5404
TDS	75 / 75	506	608	8.0	33,760	40,566
TDS (fixed)	8 / 8	416	452	8.0	27,756	30,157
TSS	133 / 133	284	1150	8.0	18,965	76,728
Organics						
Toluene	0 / 4	0.005	--	8.0	0.334	--
Bis(2-Ethylhexyl)phthalate	3 / 9	0.008	0.017	8.0	0.534	1.13

Table C-1
Influent Loading Summary
Local Limits Report

	CCWRF					
Parameter	**# Detects/ # Results**	**Avg Conc (mg/L)**	**Max Conc (mg/L)**	**Avg Flow (mgd)**	**Avg Influent Loading (lb/day)**	**Max Influent Loading (lb/day)**
Metals						
Aluminum	9 / 9	0.75	0.84	7.2	45.1	50.4
Arsenic	0 / 14	0.005	--	7.2	0.300	--
Boron	24 / 24	0.32	0.40	7.2	19.3	24.0
Cadmium	0 / 14	0.005	--	7.2	0.300	--
Chromium	0 / 14	0.005	--	7.2	0.300	--
Copper	14 / 14	0.063	0.08	7.2	3.77	4.80
Iron	9 / 9	0.73	0.85	7.2	44.0	51.0
Lead	0 / 14	0.01	--	7.2	0.600	--
Manganese	9 / 9	0.033	0.04	7.2	2.00	2.40
Mercury	1 / 14	0.00029	0.0008	7.2	0.017	0.048
Molybdenum	7 / 9	0.040	0.08	7.2	2.40	4.80
Nickel	0 / 14	0.005	--	7.2	0.300	--
Selenium	0 / 14	0.01	--	7.2	0.600	--
Silver	0 / 14	0.005	--	7.2	0.300	--
Sodium	24 / 24	101	114	7.2	6,045	6,845
Zinc	14 / 14	0.22	0.36	7.2	13.2	21.6
Conventional Pollutants						
Ammonia	131 / 131	33	51	7.2	1,987	3,068
BOD_5	10 / 10	458	855	7.2	27,502	51,341
Chloride	24 / 24	121	147	7.2	7,273	8,827
Cyanide (free)	0 / 24	0.001	--	7.2	0.060	--
Cyanide (total)	8 / 9	0.009	0.017	7.2	0.557	1.02
Fluoride	15 / 15	0.21	0.3	7.2	12.8	18.0
Hardness	15 / 15	198	274	7.2	11,914	16,453
Nitrite	20 / 76	0.03	0.19	7.2	1.80	11.4
Nitrate	44 / 76	0.21	4.7	7.2	12.3	282
Sulfate	24 / 24	61	184	7.2	3,668	11,049
Total Inorganic Nitrogen	20 / 76	33	51.1	7.2	2001	3068
TDS	69 / 69	544	606	7.2	32,666	36,389
TDS (fixed)	7 / 7	493	496	7.2	29,604	29,784
TSS	131 / 131	349	1150	7.2	20,955	69,055
Organics						
Toluene	0 / 5	0.005	--	7.2	0.300	--
Bis(2-Ethylhexyl)phthalate	2 / 8	0.0081	0.018	7.2	0.486	1.08

Notes:
mg/L = milligrams per liter; mgd = million gallns per day; lb/day = pounds per day
Avg = average; Max = maximum; Conc = concentration; "--" = not applicable
Influent Loading = concentration * average flow * 8.34
Concentration and flows are based on data from 2013 through 2014
Max Influent Loading not calculated if results for analyte were all non-detect
Outliers (average +/- 2 * the standard deviation) were not included in the average calculations for TDS

Table C-2
RP-4 Influent Concentrations - September 2014
Local Limits Study

Parameters	RP-4 Influent										Avg Conc
	9/9/2014	9/10/2014	9/11/2014	9/12/2014	9/13/2014	9/14/2014	9/15/2014	9/16/2014	9/17/2014	9/18/2014	
Flows (mgd)	9.2	9.2	9.2	9.1	8.9	8.3	8.9	9.6	9.3	10.9	
Metals (mg/L)											
Aluminum	0.45	0.38	0.35	0.42	0.45	--	0.46	0.39	0.36	--	0.41
Arsenic	0.005	0.005	0.005	0.005	0.005	--	0.005	0.005	0.005	--	0.005
Boron	0.3	0.2	0.2	0.2	0.2	--	0.3	0.2	0.2	--	0.2
Cadmium	0.005	0.005	0.005	0.005	0.005	--	0.005	0.005	0.005	--	0.005
Chromium	0.005	0.005	0.005	0.005	0.005	--	0.005	0.005	0.005	--	0.005
Copper	0.05	0.05	0.04	0.05	0.06	--	0.05	0.04	0.05	--	0.05
Iron	0.37	0.37	0.32	0.37	0.41	--	0.34	0.34	0.34	--	0.36
Lead	0.01	0.01	0.01	0.01	0.01	--	0.01	0.01	0.01	--	0.01
Manganese	0.02	0.02	0.02	0.02	0.02	--	0.01	0.02	0.01	--	0.02
Mercury	0.00025	0.00025	0.00025	0.00025	0.00025	--	0.00025	0.00025	0.00025	--	0.0003
Molybdenum	0.005	0.005	0.005	0.005	0.005	--	0.005	0.005	0.005	--	0.005
Nickel	0.005	0.005	0.005	0.005	0.005	--	0.005	0.005	0.005	--	0.005
Selenium	0.01	0.01	0.01	0.01	0.01	--	0.01	0.01	0.01	--	0.01
Silver	0.005	0.005	0.005	0.005	0.005	--	0.005	0.005	0.005	--	0.005
Sodium	102	100	89	92	96	--	97	94	90	--	95
Zinc	0.15	0.17	0.15	0.18	0.2	--	0.14	0.15	0.15	--	0.16
General Chemistry (mg/L)											
Ammonia	36.9	47	45.3	44.7	43.8	51.9	36.5	43.4	46	46.5	44.2
BOD	242	288	297	326	--	207	280	265	264	336	280
Chloride	121	117	96	100	107	107	119	109	91	--	107
Cyanide (free)	0.001	0.001	0.001	0.001	0.001	--	0.001	0.001	0.001	0.001	0.001
Cyanide (total)	0.0025	0.023	0.009	0.013	0.015	--	0.012	0.015	0.0025	0.005	0.011
Hardness	168	166	163	179	173	--	166	168	161	--	168
Nitrate	0.1	0.05	0.05	0.2	0.05	0.05	0.2	0.05	0.05	--	0.09
Nitrite	0.23	0.17	0.14	0.16	0.18	0.08	0.17	0.14	0.03	--	0.14
Sulfate	54	57	56	54	54	54	57	54	61	--	56
TDS	568	530	454	--	492	500	532	508	494	--	510
TDS (fixed)	444	446	400	--	428	438	452	448	416	--	434
TSS	258	256	295	329	335	194	208	260	186	323	266
Organics											
Toluene	--	--	--	--	--	--	0.005	0.005	--	0.005	0.005
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	0.023	0.005	--	0.005	0.011

Notes:
mgd = million gallons per day; mg/L = milligrams per liter; lb/day = pounds per day; Avg = flow-weighted average; Max = maximum
Blue shaded cells indicate where 1/2 of the reporting limit was substituted for non-detect results
Hardness calculated based on calcium and magnesium concentrations

Table C-3
RP-5 Influent Concentrations - September 2014
Local Limits Study

Parameters	RP-5 Influent									Avg Conc
	9/9/2014	9/10/2014	9/11/2014	9/12/2014	9/13/2014	9/15/2014	9/16/2014	9/17/2014	9/18/2014	
Flows (mgd)	5.9	5.9	6.1	5.9	6.3	6.1	6.1	6.1	6.1	
Metals (mg/L)										
Aluminum	0.25	0.42	0.47	0.7	0.41	0.52	0.46	0.2	0.2	0.40
Arsenic	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Boron	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.26
Cadmium	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Chromium	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Copper	0.05	0.07	0.07	0.08	0.06	0.06	0.06	0.05	0.04	0.06
Iron	0.25	0.42	0.4	0.62	0.34	0.4	0.35	0.2	0.18	0.35
Lead	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Manganese	0.02	0.02	0.03	0.04	0.02	0.03	0.02	0.01	0.02	0.02
Mercury	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025	0.00025
Molybdenum	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nickel	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Selenium	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Silver	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Sodium	90	83	83	83	90	80	82	83	81	84
Zinc	0.12	0.18	0.15	0.2	0.14	0.15	0.16	0.08	0.08	0.14
General Chemistry (mg/L)										
Ammonia	46.4	35.3	33.1	32.2	35.5	33.6	45	32.9	31.4	36.1
BOD	212	278	303	345	286	285	279	166	178	259
Chloride	130	114	113	110	118	107	109	105	107	112
Cyanide (free)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Cyanide (total)	0.0025	0.016	0.009	0.014	0.016	0.01	0.007	0.0025	0.005	0.009
Hardness	199	201	202	205	207	189	194	186	182	196
Nitrate	0.05	0.05	0.05	0.05	0.4	0.05	0.05	0.05	0.05	0.09
Nitrite	0.19	0.15	0.14	0.14	0.15	0.13	0.15	0.03	0.01	0.12
Sulfate	43	42	43	45	38	40	41	40	42	42
TDS	568	476	486	--	492	498	486	474	470	493
TDS (fixed)	452	390	404	--	434	428	414	408	398	416
TSS	159	269	246	61	248	360	237	61	89	193
Organics										
Toluene	--	--	--	--	--	0.005	0.005	--	0.005	0.005
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	0.017	0.011	--	0.005	0.011

Notes:
mgd = million gallons per day; mg/L = milligrams per liter; lb/day = pounds per day; Avg = flow-weighted average; Max = maximum
Blue shaded cells indicate where 1/2 of the reporting limit was substituted for non-detect results
Hardness calculated based on calcium and magnesium concentrations

Table C-4
SIU Loadings to RP-1 (2013 - 2014)
Local Limits Study

Parameter	Amphastar				Aquamar				Cliffstar			
	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)
Metals												
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	0 / 3	0.005	0.002	0.00009	--	--	--	--	--	--	--	--
Boron	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	0 / 4	0.005	0.002	0.00009	--	--	--	--	--	--	--	--
Chromium	1 / 4	0.0088	0.002	0.00015	--	--	--	--	--	--	--	--
Copper	1 / 4	0.010	0.002	0.00017	--	--	--	--	--	--	--	--
Iron	3 / 3	0.53	0.002	0.0091	--	--	--	--	--	--	--	--
Lead	0 / 4	0.014	0.002	0.00024	--	--	--	--	--	--	--	--
Manganese	0 / 3	0.01	0.002	0.00017	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	0 / 4	0.0063	0.002	0.00011	--	--	--	--	--	--	--	--
Selenium	0 / 3	0.010	0.002	0.00017	--	--	--	--	--	--	--	--
Silver	0 / 3	0.005	0.002	0.00009	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	4 / 4	0.033	0.002	0.00057	--	--	--	--	--	--	--	--
Conventional Pollutants												
Ammonia	--	--	--	--	--	--	--	--	--	--	--	--
BOD	4 / 4	13	0.002	0.220	5 / 5	1057	0.029	256	5 / 5	1690	0.059	828
Chloride	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide (free)	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide (total)	2 / 6	0.013	0.002	0.00022	--	--	--	--	--	--	--	--
Fluoride	--	--	--	--	--	--	--	--	--	--	--	--
Hardness	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	1 / 1	6.0	0.002	0.103	--	--	--	--	--	--	--	--
TDS	6 / 8	40	0.002	0.679	1 / 1	824	0.029	199	1 / 1	2860	0.059	1401
TDS (fixed)	--	--	--	--	1 / 1	564	0.029	136	1 / 1	736	0.059	361
TSS	1 / 5	1.9	0.002	0.033	5 / 5	592	0.029	143	5 / 5	86	0.059	42.2
Organics												
Toluene	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-Ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--	--

Table C-4
SIU Loadings to RP-1 (2013 - 2014)
Local Limits Study

	Coca-Cola				Discus Dental				Evolution Fresh			
Parameter	**# Detects/ # Results**	**Avg Conc (mg/L)**	**Avg Flow (mgd)**	**Avg Effluent Loading (lb/day)**	**# Detects/ # Results**	**Avg Conc (mg/L)**	**Avg Flow (mgd)**	**Avg Effluent Loading (lb/day)**	**# Detects/ # Results**	**Avg Conc (mg/L)**	**Avg Flow (mgd)**	**Avg Effluent Loading (lb/day)**
Metals												
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	--	--	--	--	0 / 3	0.005	0.0005		0 / 3	0.005	0.053	0.0022
Boron	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	0 / 5	0.0034	0.0005	0.000014	0 / 9	0.0023	0.053	0.0010
Chromium	--	--	--	--	0 / 5	0.007	0.0005	0.000029	1 / 9	0.011	0.053	0.0048
Copper	--	--	--	--	4 / 5	0.039	0.0005	0.00016	9 / 9	0.043	0.053	0.019
Iron	--	--	--	--	2 / 3	0.36	0.0005	0.0015	3 / 3	0.73	0.053	0.321
Lead	--	--	--	--	0 / 5	0.008	0.0005	0.000033	0 / 9	0.0067	0.053	0.0029
Manganese	--	--	--	--	2 / 11	0.010	0.0005	0.000042	1 / 3	0.02	0.053	0.0088
Mercury	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	0 / 5	0.007	0.0005	0.000029	1 / 9	0.0089	0.053	0.0039
Selenium	--	--	--	--	0 / 3	0.010	0.0005	0.000042	0 / 3	0.010	0.053	0.0044
Silver	--	--	--	--	0 / 3	0.005	0.0005	0.000021	0 / 3	0.005	0.053	0.0022
Sodium	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	--	--	--	--	5 / 5	0.15	0.0005	0.0006	8 / 9	0.18	0.053	0.079
Conventional Pollutants												
Ammonia	--	--	--	--	--	--	--	--	--	--	--	--
BOD	11 / 11	2348	0.126	2467	3 / 3	208	0.0005	0.867	12 / 12	883	0.053	388
Chloride	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide (free)	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide (total)	--	--	--	--	1 / 5	0.0032	0.0005	0.000013	3 / 9	0.0042	0.053	0.0018
Fluoride	--	--	--	--	--	--	--	--	--	--	--	--
Hardness	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	--	--	--	--	--	--	--	--	--	--	--	--
TDS	5 / 5	1302	0.126	1368	5 / 5	245	0.0005	1.02	13 / 13	1154	0.053	507
TDS (fixed)	5 / 5	580	0.126	609	--	--	--	--	13 / 13	611	0.053	268
TSS	10 / 10	468	0.126	492	2 / 2	11	0.0005	0.046	11 / 11	212	0.053	93.1
Organics												
Toluene	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-Ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--	--

Table C-4
SIU Loadings to RP-1 (2013 - 2014)
Local Limits Study

Parameter	Inland Powder Coating				Jewlland-Freya Health Sciences				Nestle Waters			
	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)
Metals												
Aluminum	--	--	--	--	3 / 3	0.12	0.0013	0.0013	--	--	--	--
Arsenic	2 / 6	0.0083	0.0052	0.00036	0 / 6	0.005	0.0013	0.000054	--	--	--	--
Boron	--	--	--	--	0 / 3	0.050	0.0013	0.00054	--	--	--	--
Cadmium	1 / 11	0.0036	0.0052	0.00016	0 / 8	0.004	0.0013	0.000043	--	--	--	--
Chromium	0 / 11	0.0073	0.0052	0.00032	4 / 8	0.0076	0.0013	0.000082	--	--	--	--
Copper	0 / 11	0.0077	0.0052	0.00034	8 / 8	0.11	0.0013	0.0012	--	--	--	--
Iron	5 / 6	0.48	0.0052	0.021	6 / 6	1.3	0.0013	0.014	--	--	--	--
Lead	0 / 11	0.0077	0.0052	0.00034	0 / 8	0.0081	0.0013	0.000088	--	--	--	--
Manganese	1 / 6	0.012	0.0052	0.00052	5 / 6	0.097	0.0013	0.0011	--	--	--	--
Mercury	--	--	--	--	0 / 3	0.00025	0.0013	0.000003	--	--	--	--
Molybdenum	--	--	--	--	1 / 3	0.0067	0.0013	0.000073	--	--	--	--
Nickel	1 / 11	0.0095	0.0052	0.00041	2 / 8	0.011	0.0013	0.00012	--	--	--	--
Selenium	0 / 6	0.010	0.0052	0.00044	0 / 6	0.010	0.0013	0.00011	--	--	--	--
Silver	1 / 11	0.0055	0.0052	0.00024	0 / 6	0.005	0.0013	0.000054	--	--	--	--
Sodium	--	--	--	--	3 / 3	89	0.0013	0.965	--	--	--	--
Zinc	11 / 11	0.24	0.0052	0.010	8 / 8	0.80	0.0013	0.0087	--	--	--	--
Conventional Pollutants												
Ammonia	--	--	--	--	3 / 3	0.3	0.0013	0.0033	--	--	--	--
BOD	4 / 6	17	0.0052	0.742	14 / 14	467	0.0013	5.06	7 / 11	7.0	0.11	6.38
Chloride	--	--	--	--	3 / 3	93	0.0013	1.01	--	--	--	--
Cyanide (free)	--	--	--	--	0 / 3	0.001	0.0013	0.00001	--	--	--	--
Cyanide (total)	1 / 11	0.0034	0.0052	0.00015	4 / 8	0.0049	0.0013	0.00005	--	--	--	--
Fluoride	--	--	--	--	--	--	--	--	--	--	--	--
Hardness	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate	--	--	--	--	2 / 3	0.92	0.0013	0.010	--	--	--	--
Nitrite	--	--	--	--	2 / 3	1.22	0.0013	0.013	--	--	--	--
Sulfate	--	--	--	--	3 / 3	76	0.0013	0.824	--	--	--	--
TDS	11 / 11	182	0.0052	7.94	26 / 26	513	0.0013	5.56	2 / 2	397	0.11	362
TDS (fixed)	--	--	--	--	20 / 20	285	0.0013	3.09	2 / 2	342	0.11	311
TSS	3 / 3	5	0.0052	0.218	13 / 13	80	0.0013	0.867	5 / 11	6	0.11	5.46
Organics												
Toluene	0 / 1	0.0025	0.0052	0.00011	--	--	--	--	--	--	--	--
Bis(2-Ethylhexyl)phthalate	0 / 1	0.0015	0.0052	0.00007	--	--	--	--	--	--	--	--

Table C-4
SIU Loadings to RP-1 (2013 - 2014)
Local Limits Study

Parameter	Net Shapes				Nong Shim				O.W. Lee Company			
	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)
Metals												
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	0 / 2	0.005	0.0015	0.000062	--	--	--	--	0 / 5	0.005	0.003	0.00013
Boron	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1 / 6	0.0081	0.0015	0.00010	--	--	--	--	0 / 10	0.003	0.003	0.000075
Chromium	3 / 6	0.015	0.0015	0.00019	--	--	--	--	0 / 10	0.0075	0.003	0.00019
Copper	6 / 6	0.090	0.0015	0.0011	--	--	--	--	2 / 10	0.013	0.003	0.00033
Iron	0 / 2	0.075	0.0015	0.00093	--	--	--	--	5 / 5	0.25	0.003	0.0063
Lead	1 / 6	0.032	0.0015	0.00040	--	--	--	--	0 / 10	0.0075	0.003	0.00019
Manganese	0 / 2	0.010	0.0015	0.00012	--	--	--	--	0 / 5	0.010	0.003	0.00025
Mercury	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	6 / 6	0.029	0.0015	0.00036	--	--	--	--	1 / 10	0.012	0.003	0.00030
Selenium	0 / 2	0.010	0.0015	0.00012	--	--	--	--	0 / 5	0.010	0.003	0.00025
Silver	1 / 2	0.018	0.0015	0.00022	--	--	--	--	0 / 10	0.005	0.003	0.00013
Sodium	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	6 / 6	0.35	0.0015	0.0043	--	--	--	--	10 / 10	0.20	0.003	0.005
Conventional Pollutants												
Ammonia	--	--	--	--	--	--	--	--	--	--	--	--
BOD	4 / 4	37	0.0015	0.460	25 / 25	102	0.025	21.0	6 / 9	7.3	0.003	0.183
Chloride	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide (free)	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide (total)	2 / 7	0.0056	0.0015	0.00007	--	--	--	--	1 / 11	0.0029	0.003	0.00007
Fluoride	--	--	--	--	--	--	--	--	--	--	--	--
Hardness	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	--	--	--	--	--	--	--	--	--	--	--	--
TDS	18 / 18	304	0.0015	3.77	25 / 25	714	0.025	147	12 / 12	253	0.003	6.33
TDS (fixed)	--	--	--	--	25 / 25	529	0.025	109	--	--	--	--
TSS	4 / 4	9	0.0015	0.112	24 / 25	34	0.025	7.00	7 / 9	9.2	0.003	0.230
Organics												
Toluene	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-Ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--	--

Table C-4
SIU Loadings to RP-1 (2013 - 2014)
Local Limits Study

	PAC Rancho				Parallel Products				Parco			
Parameter	**# Detects/ # Results**	**Avg Conc (mg/L)**	**Avg Flow (mgd)**	**Avg Effluent Loading (lb/day)**	**# Detects/ # Results**	**Avg Conc (mg/L)**	**Avg Flow (mgd)**	**Avg Effluent Loading (lb/day)**	**# Detects/ # Results**	**Avg Conc (mg/L)**	**Avg Flow (mgd)**	**Avg Effluent Loading (lb/day)**
Metals												
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	0 / 6	0.005	0.010	0.00041	0 / 2	0.005	0.064	0.0027	0 / 2	0.005	0.005	0.00019
Boron	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	0 / 11	0.0032	0.010	0.00026	0 / 3	0.0037	0.064	0.0020	0 / 4	0.005	0.005	0.00019
Chromium	2 / 11	0.0091	0.010	0.00075	0 / 3	0.0067	0.064	0.0036	3 / 4	0.014	0.005	0.00053
Copper	2 / 11	0.0095	0.010	0.00078	1 / 3	0.016	0.064	0.0085	3 / 4	0.041	0.005	0.0016
Iron	6 / 6	1.06	0.010	0.087	2 / 2	3.7	0.064	1.96	2 / 2	0.54	0.005	0.021
Lead	0 / 11	0.0077	0.010	0.00063	0 / 3	0.0083	0.064	0.0044	0 / 4	0.018	0.005	0.00069
Manganese	4 / 6	0.027	0.010	0.0022	1 / 2	0.025	0.064	0.013	1 / 2	0.015	0.005	0.00057
Mercury	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	0 / 11	0.0073	0.010	0.00060	0 / 3	0.0067	0.064	0.0036	2 / 4	0.046	0.005	0.0018
Selenium	0 / 6	0.010	0.010	0.00082	0 / 2	0.010	0.064	0.0053	0 / 2	0.010	0.005	0.00038
Silver	9 / 11	0.030	0.010	0.0025	0 / 2	0.005	0.064	0.0027	0 / 2	0.005	0.005	0.00019
Sodium	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	10 / 11	0.019	0.010	0.0016	1 / 3	0.021	0.064	0.011	4 / 4	0.27	0.005	0.010
Conventional Pollutants												
Ammonia	--	--	--	--	--	--	--	--	--	--	--	--
BOD	6 / 7	146	0.010	12.0	53 / 53	1561	0.064	827	5 / 5	46	0.005	1.76
Chloride	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide (free)	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide (total)	0 / 11	0.0025	0.010	0.00021	0 / 3	0.0025	0.064	0.0013	0 / 4	0.0063	0.005	0.00024
Fluoride	--	--	--	--	--	--	--	--	--	--	--	--
Hardness	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite	--	--	--	--	--	--	--	--	--	--	--	--
Sulfate	--	--	--	--	--	--	--	--	--	--	--	--
TDS	10 / 10	307	0.010	25.3	4 / 4	232	0.064	123	6 / 6	301	0.005	11.5
TDS (fixed)	--	--	--	--	4 / 4	135	0.064	71.6	--	--	--	--
TSS	6 / 7	78.0	0.010	6.43	48 / 53	16	0.064	8.48	4 / 4	23.0	0.005	0.878
Organics												
Toluene	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-Ethylhexyl)phthalate	3 / 3	0.108	0.010	0.0089	--	--	--	--	--	--	--	--

Table C-4
SIU Loadings to RP-1 (2013 - 2014)
Local Limits Study

Parameter	Schlosser Forge				Sun Badge Company				Western Metals				RP-1 Avg Industrial Loading (lb/day)
	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)	
Metals													
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	0.0013
Arsenic	0 / 6	0.005	0.005	0.00021	2 / 6	0.017	0.00045	0.000063	'0 / 4	0.005	0.002	0.000083	0.0065
Boron	--	--	--	--	--	--	--	--	--	--	--	--	0.00054
Cadmium	0 / 11	0.0032	0.005	0.00013	0 / 11	0.0032	0.00045	0.000012	0 / 8	0.005	0.002	0.000083	0.0041
Chromium	0 / 11	0.0073	0.005	0.00030	0 / 11	0.0073	0.00045	0.000027	6 / 9	0.021	0.002	0.00036	0.011
Copper	1 / 9	0.012	0.005	0.00050	5 / 11	0.016	0.00045	0.000060	1 / 9	0.012	0.002	0.00019	0.034
Iron	1 / 6	0.093	0.005	0.0039	0 / 6	0.075	0.00045	0.00028	2 / 4	0.22	0.002	0.0036	2.45
Lead	0 / 11	0.0077	0.005	0.00032	0 / 11	0.077	0.00045	0.00029	0 / 9	0.0072	0.002	0.00012	0.011
Manganese	0 / 6	0.010	0.005	0.00042	1 / 6	0.048	0.00045	0.00018	1 / 4	0.013	0.002	0.00021	0.028
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	0.0000027
Molybdenum	--	--	--	--	--	--	--	--	--	--	--	--	0.000073
Nickel	5 / 11	0.012	0.005	0.00050	2 / 11	0.0092	0.00045	0.000034	0 / 9	0.016	0.002	0.00027	0.012
Selenium	0 / 6	0.010	0.005	0.00042	5 / 6	0.65	0.00045	0.0024	0 / 4	0.010	0.002	0.00017	0.015
Silver	0 / 6	0.005	0.005	0.00021	0 / 11	0.005	0.00045	0.000019	0 / 6	0.0067	0.002	0.00011	0.0086
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	0.965
Zinc	11 / 11	0.10	0.005	0.0042	1 / 11	0.01	0.00045	0.000037	6 / 9	0.16	0.002	0.0027	0.139
Conventional Pollutants													
Ammonia	2 / 11	0.33	0.005	0.014	--	--	--	--	--	--	--	--	0.017
BOD	9 / 9	47	0.005	1.96	8 / 8	83	0.00045	0.309	5 / 5	10.5	0.002	0.175	4817
Chloride	--	--	--	--	--	--	--	--	--	--	--	--	1.01
Cyanide (free)	--	--	--	--	--	--	--	--	--	--	--	--	0.000011
Cyanide (total)	0 / 10	0.0025	0.005	0.00010	0 / 8	0.0025	0.00045	0.00001	0 / 10	0.0038	0.002	0.00006	0.0044
Fluoride	5 / 11	0.09	0.005	0.0038	4 / 4	0.9	0.00045	0.003	--	--	--	--	0.0071
Hardness	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate	--	--	--	--	--	--	--	--	--	--	--	--	0.010
Nitrite	--	--	--	--	--	--	--	--	--	--	--	--	0.013
Sulfate	--	--	--	--	--	--	--	--	--	--	--	--	0.927
TDS	11 / 11	441	0.005	18.4	11 / 11	421	0.00045	1.57	9 / 9	270	0.002	4.51	4194
TDS (fixed)	--	--	--	--	--	--	--	--	--	--	--	--	1870
TSS	8 / 9	12	0.005	0.500	5 / 7	6.4	0.00045	0.024	5 / 6	14.5	0.002	0.242	801
Organics													
Toluene	0 / 4	0.018	0.005	0.00075	--	--	--	--	--	--	--	--	0.00075
Bis(2-Ethylhexyl)phthalate	1 / 4	0.0068	0.005	0.00028	--	--	--	--	--	--	--	--	0.0092

Notes:
Avg = average; Conc = concentration; mg/L = milligrams per liter; lb/day = pounds per day
1/2 the reporting limit was used as substitution for non-detect results for average calculations
Loading calculations based on 2013 - 2014 concentration and flow data
Outliers (average +/- 2 * the standard deviation) were not included in the average calculations for TDS

Table C-5
SIU Loadings to CCWRF (2013 - 2014)
Local Limits Study

Parameter	American Beef Packers				Envision Plastics				Jewlland-Freya Health Sciences			
	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)
Metals												
Aluminum	3 / 3	0.31	0.306	0.792	3 / 3	16.9	0.069	9.73	3 / 3	0.12	0.0013	0.0013
Arsenic	0 / 3	0.0083	0.306	0.021	0 / 3	0.0083	0.069	0.0048	0 / 6	0.005	0.0013	0.000054
Boron	3 / 3	0.27	0.306	0.690	3 / 3	0.47	0.069	0.27	0 / 3	0.050	0.0013	0.00054
Cadmium	0 / 3	0.0083	0.306	0.021	0 / 3	0.0083	0.069	0.0048	0 / 8	0.004	0.0013	0.000043
Chromium	0 / 3	0.0083	0.306	0.021	3 / 3	0.037	0.069	0.021	4 / 8	0.0076	0.0013	0.000082
Copper	0 / 3	0.017	0.306	0.043	3 / 3	0.17	0.069	0.098	8 / 8	0.11	0.0013	0.0012
Iron	3 / 3	1.25	0.306	3.19	3 / 3	9.75	0.069	5.61	5 / 5	0.52	0.0013	0.0056
Lead	0 / 3	0.017	0.306	0.043	3 / 3	0.077	0.069	0.044	0 / 8	0.0081	0.0013	0.000088
Manganese	3 / 3	0.15	0.306	0.383	3 / 3	0.22	0.069	0.13	5 / 6	0.097	0.0013	0.0011
Mercury	0 / 3	0.00042	0.306	0.0011	3 / 3	0.0012	0.069	0.00069	0 / 3	0.00025	0.0013	0.0000027
Molybdenum	0 / 3	0.0083	0.306	0.021	2 / 3	0.013	0.069	0.0075	1 / 3	0.0067	0.0013	0.000073
Nickel	0 / 3	0.0083	0.306	0.021	3 / 3	0.023	0.069	0.013	2 / 8	0.011	0.0013	0.00012
Selenium	0 / 3	0.017	0.306	0.043	0 / 3	0.017	0.069	0.0098	0 / 6	0.010	0.0013	0.00011
Silver	0 / 3	0.0067	0.306	0.017	0 / 3	0.0083	0.069	0.0048	0 / 6	0.005	0.0013	0.000054
Sodium	3 / 3	172	0.306	440	3 / 3	66	0.069	38.0	3 / 3	89	0.0013	0.965
Zinc	3 / 3	0.13	0.306	0.332	3 / 3	0.68	0.069	0.391	8 / 8	0.80	0.0013	0.0087
Conventional Pollutants												
Ammonia	3 / 3	52.3	0.306	134	3 / 3	1.3	0.069	0.748	3 / 3	0.3	0.0013	0.0033
BOD	8 / 8	953	0.306	2435	8 / 8	904	0.069	520	14 / 14	467	0.0013	5.06
Chloride	3 / 3	150	0.306	383	3 / 3	131	0.069	75.4	3 / 3	93	0.0013	1.01
Cyanide (free)	2 / 3	0.0027	0.306	0.0069	0 / 3	0.001	0.069	0.00058	0 / 3	0.001	0.0013	0.000011
Cyanide (total)	3 / 3	0.023	0.306	0.059	2 / 3	0.006	0.069	0.0035	4 / 8	0.0049	0.0013	0.000053
Fluoride	--	--	--	--	--	--	--	--	--	--	--	--
Hardness	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate	2 / 3	1.15	0.306	2.94	2 / 3	0.38	0.069	0.219	2 / 3	0.92	0.0013	0.010
Nitrite	3 / 3	1.08	0.306	2.76	1 / 3	0.17	0.069	0.098	2 / 3	1.22	0.0013	0.013
Sulfate	3 / 3	56	0.306	143	3 / 3	42	0.069	24.2	3 / 3	76	0.0013	0.824
TDS	8 / 8	1196	0.306	3056	4 / 4	894	0.069	515	26 / 26	513	0.0013	5.56
TDS (fixed)	8 / 8	549	0.306	1403	4 / 4	511	0.069	294	20 / 20	285	0.0013	3.09
TSS	8 / 8	388	0.306	992	8 / 8	605	0.069	348	13 / 13	80	0.0013	0.867
Organics												
Toluene	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-Ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--	--

Table C-5
SIU Loadings to CCWRF (2013 - 2014)
Local Limits Study

	Scott Brothers Dairy				Wing Lee Farms				
Parameter	**# Detects/ # Results**	**Avg Conc (mg/L)**	**Avg Flow (mgd)**	**Avg Effluent Loading (lb/day)**	**# Detects/ # Results**	**Avg Conc (mg/L)**	**Avg Flow (mgd)**	**Avg Effluent Loading (lb/day)**	**CCWRF Industrial Loading (lb/day)**
Metals									
Aluminum	3 / 3	1.95	0.052	0.847	3 / 3	0.19	0.038	0.060	11.4
Arsenic	0 / 3	0.005	0.052	0.0022	0 / 3	0.005	0.038	0.0016	0.030
Boron	3 / 3	0.2	0.052	0.087	3 / 3	0.2	0.038	0.063	1.11
Cadmium	0 / 3	0.005	0.052	0.0022	0 / 3	0.005	0.038	0.0016	0.030
Chromium	0 / 3	0.005	0.052	0.0022	0 / 3	0.005	0.038	0.0016	0.046
Copper	0 / 3	0.01	0.052	0.0043	3 / 3	0.19	0.038	0.060	0.206
Iron	0 / 3	0.075	0.052	0.033	3 / 3	0.75	0.038	0.235	9.08
Lead	0 / 3	0.01	0.052	0.0043	0 / 3	0.010	0.038	0.0031	0.095
Manganese	0 / 3	0.01	0.052	0.0043	3 / 3	0.09	0.038	0.028	0.544
Mercury	0 / 3	0.00033	0.052	0.00014	0 / 3	0.00025	0.038	0.00008	0.002
Molybdenum	0 / 3	0.005	0.052	0.0022	0 / 3	0.005	0.038	0.0016	0.033
Nickel	0 / 3	0.005	0.052	0.0022	0 / 3	0.005	0.038	0.0016	0.038
Selenium	0 / 3	0.010	0.052	0.0043	0 / 3	0.010	0.038	0.0031	0.061
Silver	0 / 3	0.005	0.052	0.0022	0 / 3	0.005	0.038	0.0016	0.026
Sodium	3 / 3	198	0.052	86.0	3 / 3	99	0.038	31.0	596
Zinc	3 / 3	0.057	0.052	0.025	3 / 3	0.15	0.038	0.047	0.804
Conventional Pollutants									
Ammonia	3 / 3	0.97	0.052	0.421	3 / 3	41.0	0.038	12.9	148
BOD	8 / 8	2194	0.052	953	8 / 8	774	0.038	243	4156
Chloride	3 / 3	148	0.052	64.3	3 / 3	163	0.038	51.1	575
Cyanide (free)	0 / 3	0.001	0.052	0.00043	1 / 3	0.0027	0.038	0.0008	0.009
Cyanide (total)	1 / 3	0.0053	0.052	0.0023	2 / 3	0.011	0.038	0.0034	0.068
Fluoride	--	--	--	--	--	--	--	--	--
Hardness	--	--	--	--	--	--	--	--	--
Nitrate	2 / 3	1.6	0.052	0.695	2 / 3	0.22	0.038	0.069	3.93
Nitrite	3 / 3	0.81	0.052	0.352	3 / 3	0.30	0.038	0.094	3.32
Sulfate	3 / 3	81	0.052	35.2	3 / 3	60	0.038	18.8	222
TDS	12 / 12	1819	0.052	790	7 / 7	909	0.038	285	4652
TDS (fixed)	12 / 12	663	0.052	288	8 / 8	536	0.038	168	2156
TSS	8 / 8	185	0.052	80.3	8 / 8	282	0.038	88.4	1509
Organics									
Toluene	--	--	--	--	--	--	--	--	--
Bis(2-Ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--

Notes:
Avg = average; Conc = concentration; mg/L = milligrams per liter; lb/day = pounds per day
1/2 the reporting limit was used as substitution for non-detect results for average calculations
Loading calculations based on 2013 - 2014 concentration and flow data
Outliers (average +/- 2 * the standard deviation) were not included in the average calculations for TDS

Table C-6
SIU Loadings to CCWRF (September 2014)
Local Limits Report

Parameter	American Beef Packers				Envision Plastics				Scott Brothers Dairy			
	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading (lb/day)	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading
Metals												
Aluminum	3 / 3	0.31	0.306	0.792	3 / 3	16.9	0.069	9.73	3 / 3	1.95	0.052	0.847
Arsenic	0 / 3	0.0083	0.306	0.021	0 / 3	0.0083	0.069	0.005	0 / 3	0.005	0.052	0.002
Boron	3 / 3	0.27	0.306	0.690	3 / 3	0.47	0.069	0.271	3 / 3	0.2	0.052	0.087
Cadmium	0 / 3	0.0083	0.306	0.021	0 / 3	0.0083	0.069	0.005	0 / 3	0.005	0.052	0.002
Chromium	0 / 3	0.0083	0.306	0.021	3 / 3	0.037	0.069	0.021	0 / 3	0.005	0.052	0.002
Copper	0 / 3	0.017	0.306	0.043	3 / 3	0.17	0.069	0.098	0 / 3	0.01	0.052	0.004
Iron	3 / 3	1.25	0.306	3.19	3 / 3	9.75	0.069	5.61	0 / 3	0.075	0.052	0.033
Lead	0 / 3	0.017	0.306	0.043	3 / 3	0.077	0.069	0.044	0 / 3	0.01	0.052	0.004
Manganese	3 / 3	0.15	0.306	0.383	3 / 3	0.22	0.069	0.127	0 / 3	0.01	0.052	0.004
Mercury	0 / 3	0.00042	0.306	0.001	3 / 3	0.0012	0.069	0.001	0 / 3	0.00033	0.052	0.000
Molybdenum	0 / 3	0.0083	0.306	0.021	2 / 3	0.013	0.069	0.007	0 / 3	0.005	0.052	0.002
Nickel	0 / 3	0.0083	0.306	0.021	3 / 3	0.023	0.069	0.013	0 / 3	0.005	0.052	0.002
Selenium	0 / 3	0.017	0.306	0.043	0 / 3	0.017	0.069	0.010	0 / 3	0.010	0.052	0.004
Silver	0 / 3	0.0067	0.306	0.017	0 / 3	0.0083	0.069	0.005	0 / 3	0.005	0.052	0.002
Sodium	3 / 3	172	0.306	440	3 / 3	66.0	0.069	38.0	3 / 3	198	0.052	86.0
Zinc	3 / 3	0.13	0.306	0.332	3 / 3	0.68	0.069	0.391	3 / 3	0.057	0.052	0.025
Conventional Pollutants												
Ammonia	3 / 3	52.3	0.306	134	3 / 3	1.3	0.069	0.748	3 / 3	0.97	0.052	0.421
BOD	3 / 3	897	0.306	2292	3 / 3	670	0.069	386	3 / 3	1917	0.052	832
Chloride	3 / 3	150	0.306	383	3 / 3	131	0.069	75.4	3 / 3	148	0.052	64.3
Cyanide (free)	2 / 3	0.0027	0.306	0.007	0 / 3	0.001	0.069	0.0006	0 / 3	0.001	0.052	0.0004
Cyanide (total)	3 / 3	0.023	0.306	0.059	2 / 3	0.006	0.069	0.003	1 / 3	0.0053	0.052	0.002
Nitrate	2 / 3	1.15	0.306	2.94	2 / 3	0.38	0.069	0.219	2 / 3	1.6	0.052	0.695
Nitrite	3 / 3	1.08	0.306	2.76	1 / 3	0.17	0.069	0.098	3 / 3	0.81	0.052	0.352
Sulfate	3 / 3	56	0.306	143	3 / 3	42	0.069	24.2	3 / 3	81	0.052	35.2
TDS	3 / 3	970	0.306	2479	3 / 3	682	0.069	393	3 / 3	1713	0.052	744
TDS (fixed)	3 / 3	622	0.306	1590	3 / 3	484	0.069	279	3 / 3	1098	0.052	477
TSS	3 / 3	444	0.306	1135	3 / 3	241	0.069	139	3 / 3	200	0.052	86.8

Notes:
mg/L = milligrams per liter; mgd = million gallons per day; lb/day = pounds per day
Effluent Loading = concentration * average flow * 8.34

Table C-6
SIU Loadings to CCWRF (September 2014)
Local Limits Report

	Wing Lee Farms				Jewlland-Freya Health Sciences				CCWRF
Parameter	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading	# Detects/ # Results	Avg Conc (mg/L)	Avg Flow (mgd)	Avg Effluent Loading	Industrial Loading (lb/day)
Metals									
Aluminum	3 / 3	0.19	0.005	0.007	3 / 3	0.12	0.0013	0.001	11.4
Arsenic	0 / 3	0.005	0.005	0.0002	0 / 3	0.005	0.0013	0.0001	0.028
Boron	3 / 3	0.2	0.005	0.008	0 / 3	0.050	0.0013	0.0005	1.06
Cadmium	0 / 3	0.005	0.005	0.0002	0 / 3	0.005	0.0013	0.0001	0.028
Chromium	0 / 3	0.005	0.005	0.0002	2 / 3	0.0080	0.0013	0.0001	0.045
Copper	3 / 3	0.187	0.005	0.007	3 / 3	0.13	0.0013	0.001	0.154
Iron	3 / 3	0.75	0.005	0.028	3 / 3	0.4	0.0013	0.005	8.87
Lead	0 / 3	0.01	0.005	0.0004	0 / 3	0.01	0.0013	0.0001	0.093
Manganese	3 / 3	0.09	0.005	0.003	3 / 3	0.194	0.0013	0.002	0.520
Mercury	0 / 3	0.00025	0.005	0.00001	0 / 3	0.00025	0.0013	0.000003	0.002
Molybdenum	0 / 3	0.005	0.005	0.0002	1 / 3	0.0067	0.0013	0.00007	0.031
Nickel	0 / 3	0.0063	0.005	0.0002	0 / 3	0.005	0.0013	0.00005	0.037
Selenium	0 / 3	0.010	0.005	0.0004	0 / 3	0.010	0.0013	0.0001	0.058
Silver	0 / 3	0.005	0.005	0.0002	0 / 3	0.005	0.0013	0.00005	0.024
Sodium	3 / 3	99.0	0.005	3.73	3 / 3	89.0	0.0013	0.965	568
Zinc	3 / 3	0.15	0.005	0.006	3 / 3	0.487	0.0013	0.005	0.759
Conventional Pollutants									
Ammonia	3 / 3	41.0	0.005	1.55	3 / 3	0.3	0.0013	0.003	136
BOD	3 / 3	1125	0.005	42.4	3 / 3	301	0.0013	3.26	3556
Chloride	3 / 3	163	0.005	6.15	3 / 3	93	0.0013	1.01	530
Cyanide (free)	1 / 3	0.0027	0.005	0.0001	0 / 3	0.001	0.0013	0.00001	0.008
Cyanide (total)	2 / 3	0.011	0.005	0.0004	3 / 3	0.008	0.0013	0.00009	0.065
Nitrate	2 / 3	0.22	0.005	0.008	2 / 3	0.92	0.0013	0.010	3.87
Nitrite	3 / 3	0.30	0.005	0.011	2 / 3	1.22	0.0013	0.013	3.23
Sulfate	3 / 3	60	0.005	2.26	3 / 3	76	0.0013	0.824	206
TDS	3 / 3	851	0.005	32.1	3 / 3	590	0.0013	6.40	3654
TDS (fixed)	3 / 3	575	0.005	21.7	3 / 3	467	0.0013	5.06	2372
TSS	3 / 3	465	0.005	17.5	3 / 3	119	0.0013	1.29	1379

Table C-7
CCWRF Influent Loadings (September 2014)
Local Limits Study

Parameters	CCWRF Influent																		Avg Influent Loading (lb/day)
	9/9/2014		9/10/2014		9/11/2014		9/12/2014		9/13/2014		9/15/2014		9/16/2014		9/17/2014		9/18/2014		
Flows (mgd)	9.9		9.7		9.6		9.6		9.9		9.9		9.9		9.9		10.0		
Metals (mg/L)																			
Aluminum	0.64	52.7	0.75	60.7	0.73	58.4	0.81	65.1	0.84	69.5	0.77	63.6	0.78	64.48	0.73	60.6	0.71	59.2	61.6
Arsenic	0.005	0.412	0.005	0.404	0.005	0.400	0.005	0.402	0.005	0.414	0.005	0.413	0.005	0.413	0.005	0.415	0.005	0.417	0.410
Boron	0.4	32.9	0.4	32.4	0.3	24.0	0.3	24.1	0.3	24.8	0.3	24.8	0.3	24.80	0.3	24.9	0.4	33.3	27.3
Cadmium	0.005	0.412	0.005	0.404	0.005	0.400	0.005	0.402	0.005	0.414	0.005	0.413	0.005	0.413	0.005	0.415	0.005	0.417	0.410
Chromium	0.005	0.412	0.005	0.404	0.005	0.400	0.005	0.402	0.005	0.414	0.005	0.413	0.005	0.413	0.005	0.415	0.005	0.417	0.410
Copper	0.06	4.94	0.06	4.85	0.05	4.00	0.06	4.82	0.06	4.97	0.06	4.96	0.08	6.61	0.06	4.98	0.06	5.00	5.01
Iron	0.79	65.1	0.82	66.3	0.71	56.8	0.67	53.9	0.69	57.1	0.67	55.3	0.85	70.27	0.73	60.6	0.67	55.8	60.1
Lead	0.01	0.824	0.01	0.809	0.01	0.800	0.01	0.804	0.01	0.828	0.01	0.826	0.01	0.827	0.01	0.829	0.01	0.833	0.820
Manganese	0.04	3.29	0.04	3.24	0.03	2.40	0.03	2.41	0.03	2.48	0.03	2.48	0.03	2.48	0.03	2.49	0.04	3.33	2.73
Mercury	0.0008	0.066	0.00025	0.020	0.00025	0.020	0.00025	0.020	0.00025	0.021	0.00025	0.021	0.00025	0.021	0.00025	0.021	0.00025	0.021	0.026
Molybdenum	0.03	2.47	0.05	4.04	0.005	0.400	0.005	0.402	0.04	3.31	0.08	6.61	0.06	4.96	0.05	4.15	0.04	3.33	3.30
Nickel	0.005	0.412	0.005	0.404	0.005	0.400	0.005	0.402	0.005	0.414	0.005	0.413	0.005	0.413	0.005	0.415	0.005	0.417	0.410
Selenium	0.01	0.824	0.01	0.809	0.01	0.800	0.01	0.804	0.01	0.828	0.01	0.826	0.01	0.827	0.01	0.829	0.01	0.833	0.820
Silver	0.005	0.412	0.005	0.404	0.005	0.400	0.005	0.402	0.005	0.414	0.005	0.413	0.005	0.413	0.005	0.415	0.005	0.417	0.410
Sodium	112	9224	114	9220	109	8718	110	8845	112	9272	107	8839	111	9176	110	9124	112	9331	9083
Zinc	0.21	17.3	0.24	19.4	0.27	21.6	0.21	16.9	0.22	18.2	0.24	19.8	0.21	17.36	0.19	15.76	0.19	15.83	18.0
General Chemistry (mg/L)																			
Ammonia as N	49.5	4077	33.8	2734	31.5	2519	31.1	2501	26.5	2194	31.5	2602	35.8	2959	29	2405	29.5	2458	2717
BOD	416	34262	383	30977	372	29753	400	32164	384	31790	338	27920	406	33562	457	37907	379	31574	32212
Chloride	138	11366	128	10353	131	10478	147	11820	132	10928	128	10573	145	11987	122	10120	130	10830	10939
Cyanide (free)	0.001	0.082	0.001	0.081	0.001	0.080	0.001	0.080	0.001	0.083	0.001	0.083	0.001	0.083	0.001	0.083	0.001	0.083	0.082
Cyanide (total)	0.0025	0.206	0.011	0.890	0.006	0.480	0.011	0.885	0.01	0.828	0.011	0.909	0.017	1.41	0.01	0.829	0.005	0.417	0.761
Nitrate as N	0.05	4.12	0.1	8.09	0.2	16.0	0.05	4.02	0.05	4.14	0.05	4.13	0.05	4.13	0.05	4.15	0.05	4.17	5.88
Sulfate	68	5601	66	5338	67	5359	69	5548	62	5133	184	15199	69	5704	67	5558	73	6082	6613
TDS	718	59135	632	51116	564	45110	--	--	602	49837	566	46754	592	48938	644	53418	584	48653	50370
TDS (fixed)	534	43981	486	39308	474	37911	--	--	486	40234	484	39980	496	41002	496	41142	460	38323	40235
TSS	338	27838	425	34374	290	23195	197	15841	310	25663	286	23625	323	26701	361	29944	306	25493	25853

Notes:
mg/L = milligrams per liter; mgd = million gallons per day; lb/day = pounds per day
Influent Loading = concentration * average flow * 8.34
Blue shading represents non-detect results converted to 1/2 the reporting limit

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Appendix D

Allowable Headworks Loadings (AHLs) and Maximum Allowable Headworks Loadings (MAHLs)

Table D-1
RP-1 Allowable Headworks Loading
Local Limits Study

Parameter	RE (decimal)	Effluent Criteria (mg/L)	Effluent AHL (lb/day)	Secondary Inhibition Criteria (mg/L)	Secondary Inhibition AHL (lb/day)	Sludge Digestion Criteria (mg/L)	Sludge Digestion AHL (lb/day)	Land Application Criteria (mg/kg)	Land Application AHL (lb/day)	MAHLs (lb/day)
Metals										
Aluminum	0.95	0.2	**937**	--	--	--	--	--	--	937
Arsenic	0	0.01	**2.34**	0.1	26.0	1.6	397	41	240	2.34
Boron	0.09	0.75	**193**	--	--	--	--	--	--	193
Cadmium	0	0.0017	**0.398**	1.0	260	20	4,964	39	229	0.398
Chromium	0.81	0.05	**61.7**	0.25	65.1	130	199	--	--	61.7
Copper	0.96	0.0182	107	0.05	13.0	40	51.7	1,500	**45.8**	45.8
Iron	0.96	0.3	**1758**	--	--	--	--	--	--	1758
Lead	0	0.0041	**0.961**	0.5	130	340	84,388	300	1,758	0.961
Manganese	0.75	0.05	**46.9**	--	--	--	--	--	--	46.9
Mercury	0.91	0.002	**5.21**	0.1	26.0	--	--	17	99.6	5.21
Molybdenum	0	--	--	--	--	--	--	75	**439**	439
Nickel	0.50	0.1	46.9	0.25	65.1	10	24.8	420	**24.6**	24.6
Selenium	0	0.0041	**0.961**	--	--	--	--	100	586	0.961
Silver	0.97	0.05	**391**	--	--	13	16.6	--	--	391
Sodium	0	110	**25,779**	--	--	--	--	--	--	25,779
Zinc	0.89	5.0	10,652	0.08	20.8	400	558	2,800	**92.2**	92.2
Conventional Pollutants										
Chloride	0	140	**32,810**	180	46,871	--	--	--	--	32,810
Cyanide (free)	0.13	0.0042	**1.13**	--	--	--	--	--	--	1.13
Cyanide (total)	0.72	0.15	**126**	0.1	26.0	1.0	1.72	--	--	126
Fluoride	0.38	1.0	**378**	--	--	--	--	--	--	378
Hardness	0.15	50.0	**13,786**	--	--	--	--	--	--	13,786
Sulfate	0	150	**35,153**	--	--	500	124,100	--	--	35,153
TDS	0	550	**128,895**	--	--	--	--	--	--	128,895
Organics										
Toluene	0.89	0.15	**320**	200	52,079	--	--	--	--	320
Bis(2-Ethylhexyl)phthalate	0.92	0.004	**11.7**	--	--	--	--	--	--	11.7

Notes:

AHL = allowable headworks loading; MAHLs = Maximum Allowable Headworks Loadings; mg/L = milligram per liter; mg/kg = milligram per kilogram; lb/day = pounds per day

Effluent Criteria AHL = $(8.34 * C_{eff} * Q_{WRF})/(1\text{-}RE)$; C_{eff} = effluent criteria; Q_{WRF} = influent flow, RE = removal efficiency from headworks to final effluent

Secondary Inhibition Criteria = $(8.34 * C_{inhib} * Q_{WRF})/(1\text{-}RE_{prim})$; C_{inhib} = activated sludge/nitrification inhibition criteria; RE_{prim} = primary treatment removal efficiency

Sludge Digestion Criteria = $(8.34 * C_{dginhib} * Q_{dgstr})/(RE)$; $C_{dginhib}$ = anaerobic sludge digestion inhibition criteria; Q_{dgstr} = sludge flow to digester

Land application = AHL = $(0.002 * C_{slgstd} * PS/100 * Q_{sldg})/RE$; C_{slgstd} = land application standard; PS = percent solids of disposal sludge; Q_{sldg} = sludge flow to disposal

For RP-1, Q_{WRF} = 28.1 mgd; Q_{dgstr} = 0.149 mgd; Q_{sldg} = 93.9 wet tons/day; flows based on 2009 to 2014 data

RE_{prim} estimated as 10%

For copper, silver, zinc, and cyanide (total), the MAHL was based on the effluent criteria or land application AHLs rather than the secondary inhibition or sludge digestion inhibition AHLs since RP-1 operations do not appear to be inhibited at current loadings.

Table D-2
RP-4 Allowable Headworks Loading
Local Limits Study

Parameter	RE (decimal)	Effluent Criteria (mg/L)	Effluent AHL (lb/day)	Secondary Inhibition Criteria (mg/L)	Secondary Inhibition AHL (lb/day)	Sludge Digestion Criteria (mg/L)	Sludge Digestion AHL (lb/day)	Land Application Criteria (mg/kg)	Land Application AHL (lb/day)	MAHLs (lb/day)
Metals										
Aluminum	0.95	0.2	**334**	–	–	–	–	–	–	334
Arsenic	0	0.01	**0.834**	0.1	9.27	1.6	140	41	84.4	0.834
Boron	0	0.75	**62.6**	–	–	–	–	–	–	62.6
Cadmium	0	0.0017	**0.142**	1.0	92.7	20	1,744	39	80.3	0.142
Chromium	0.80	0.05	**20.9**	0.25	23.2	130	70.9	–	–	20.9
Copper	0.88	0.0182	**12.6**	0.05	4.63	40	19.8	1,500	17.6	12.6
Iron	0.91	0.3	**278**	–	–	–	–	–	–	278
Lead	0	0.0041	**0.342**	0.5	46.3	340	29,650	300	618	0.342
Manganese	0	0.05	**4.17**	–	–	–	–	–	–	4.17
Mercury	0	0.002	**0.167**	0.1	9.27	–	–	17	35.0	0.167
Molybdenum	0.15	–	–	–	–	–	–	75	**5.15**	5.15
Nickel	0.36	0.1	13.0	0.25	23.2	10	12.1	420	**12.0**	12.0
Selenium	0	0.0041	**0.342**	–	–	–	–	100	206	0.342
Silver	0	0.05	**4.17**	–	–	13	1,134	–	–	4.17
Sodium	0	110	**9,174**	–	–	–	–	–	–	9,174
Zinc	0.79	5.0	1,986	0.08	7.41	400	221	2,800	**36.5**	36.5
Conventional Pollutants										
Chloride	0	140	**11,676**	180	16,680	–	–	–	–	11,676
Cyanide (free)	0	0.0042	**0.350**	–	–	–	–	–	–	0.350
Cyanide (total)	0.59	0.15	**30.5**	0.1	9.27	1.0	0.739	–	–	30.5
Fluoride	0.33	1.0	**124**	–	–	–	–	–	–	124
Hardness	0.15	50.0	**4,906**	–	–	–	–	–	–	4,906
Sulfate	0	150	**12,510**	–	–	500	43,603	–	–	12,510
TDS	0.07	550	**49,323**	–	–	–	–	–	–	49,323
Organics										
Toluene	0	0.15	**12.5**	200	18,533	–	–	–	–	12.5
Bis(2-Ethylhexyl)phthalate	0.91	0.004	**3.71**	–	–	–	–	–	–	3.71

Notes:

AHL = allowable headworks loading; MAHLs = Maximum Allowable Headworks Loadings; mg/L = milligram per liter; mg/kg = milligram per kilogram; lb/day = pounds per day

Effluent Criteria AHL = $(8.34 * C_{eff} * Q_{WRF})/(1\text{-}RE)$; C_{eff} = effluent criteria; Q_{WRF} = influent flow; RE = removal efficiency from headworks to final effluent

Secondary Inhibition Criteria = $(8.34 * C_{inhib} * Q_{WRF})/(1\text{-}RE_{prim})$; C_{inhib} = activated sludge/nitrification inhibition criteria; RE_{prim} = primary treatment removal efficiency

Sludge Digestion Criteria = $(8.34 * C_{dginhib} * Q_{dgstr})/(RE)$; $C_{dginhib}$ = anaerobic sludge digestion inhibition criteria; Q_{dgstr} = sludge flow to digester

Land application = AHL = $(0.002 * C_{slgstd} * PS/100 * Q_{sldg})/RE$; C_{slgstd} = land application standard; PS = percent solids of disposal sludge; Q_{sldg} = sludge flow to disposal

For RP-4, Q_{WRF} = 10.0 mgd; Q_{dgstr} = 0.052 mgd; Q_{sldg} = 33.0 wet ton/day; flows based on 2009 to 2014 data

RE_{prim} estimated as 10%

For copper, zinc, and cyanide (total), the MAHL was based on the effluent criteria or land application AHLs rather than the secondary inhibition or sludge digestion inhibition AHLs since RP-4 operations do not appear to be inhibited at current loadings.

Table D-3
RP-5 Allowable Headworks Loading
Local Limits Study

Parameter	RE (decimal)	Effluent Criteria (mg/L)	Effluent AHL (lb/day)	Secondary Inhibition Criteria (mg/L)	Secondary Inhibition AHL (lb/day)	Sludge Digestion Criteria (mg/L)	Sludge Digestion AHL (lb/day)	Land Application Criteria (mg/kg)	Land Application AHL (lb/day)	MAHLs (lb/day)
Metals										
Aluminum	0.97	0.2	**445**	--	--	--	--	--	--	445
Arsenic	0	0.01	**0.667**	0.1	7.41	1.6	136	41	67.2	0.667
Boron	0	0.75	**50.0**	--	--	--	--	--	--	50.0
Cadmium	0	0.0017	**0.113**	1.0	74.1	20	1,695	39	63.9	0.113
Chromium	0.82	0.05	**18.5**	0.25	18.5	130	67.2	--	--	18.5
Copper	0.90	0.0182	**12.1**	0.05	3.71	40	18.8	1,500	13.7	12.1
Iron	0.88	0.3	**167**	--	--	--	--	--	--	167
Lead	0	0.0041	**0.274**	0.5	37.1	340	28,808	300	492	0.274
Manganese	0	0.05	**3.34**	--	--	--	--	--	--	3.34
Mercury	0.90	0.002	1.33	0.1	7.41	--	--	17	**0.155**	0.155
Molybdenum	0.22	--	--	--	--	--	--	75	**2.79**	2.79
Nickel	0.41	0.1	11.3	0.25	18.5	10	10.3	420	**8.40**	8.40
Selenium	0	0.01	**0.667**	--	--	--	--	100	164	0.667
Silver	0	0.05	**3.34**	--	--	13	1,101	--	--	3.34
Sodium	0	75	**5,004**	--	--	--	--	--	--	5,004
Zinc	0.77	5.0	1,450	0.08	5.93	400	220	2,800	**29.8**	29.8
Conventional Pollutants										
Chloride	0	75	**5,004**	180	13,344	--	--	--	--	5,004
Cyanide (free)	0.08	0.0046	**0.334**	--	--	--	--	--	--	0.334
Cyanide (total)	0.68	0.15	**31.3**	0.1	7.41	1.0	0.623	--	--	31.3
Fluoride	0.23	1.0	**86.6**	--	--	--	--	--	--	86.6
Hardness	0.07	50	**3,587**	--	--	--	--	--	--	3,587
Sulfate	0	60	**4,003**	--	--	500	42,364	--	--	4,003
TDS	0	550	**36,696**	--	--	--	--	--	--	36,696
Organics										
Toluene	0.87	0.15	**77.0**	200	14,827	--	--	--	--	77.0
Bis(2-Ethylhexyl)phthalate	0.89	0.004	**2.43**	--	--	--	--	--	--	2.43

Notes:
AHL = allowable headworks loading; MAHLs = Maximum Allowable Headworks Loadings; mg/L = milligram per liter; mg/kg = milligram per kilogram; lb/day = pounds per day
Effluent Criteria AHL = $(8.34 * C_{eff} * Q_{WRF})/(1\text{-RE})$; C_{eff} = effluent criteria; Q_{WRF} = influent flow; RE = removal efficiency from headworks to final effluent

Secondary Inhibition Criteria = $(8.34 * C_{inhib} * Q_{WRF})/(1\text{-RE}_{prim})$; C_{inhib} = activated sludge/nitrification inhibition criteria; RE_{prim} = primary treatment removal efficiency

Sludge Digestion Criteria = $(8.34 * C_{dginhib} * Q_{dgstr})/(RE)$; $C_{dginhib}$ = anaerobic sludge digestion inhibition criteria; Q_{dgstr} = sludge flow to digester

Land application = AHL = $(0.002 * C_{slgstd} * PS/100 * Q_{sldg})/RE$; C_{slgstd} = land application standard; PS = percent solids of disposal sludge; Q_{sldg} = sludge flow to disposal

For RP-5, Q_{WRF} = 8.0 mgd; Q_{dgstr} = 0.051 mgd; Q_{sldg} = 29.7 wet tons/day; flows based on 2009 to 2014 data

RE_{prim} estimated as 10%

For copper, zinc, and cyanide (total), the MAHL was based on the effluent criteria or land application AHLs rather than the secondary inhibition or sludge digestion inhibition AHLs since RP-5 operations do not appear to be inhibited at current loadings.

Table D-4
CCWRF Allowable Headworks Loading
Local Limits Study

Parameter	RE (decimal)	Effluent Criteria (mg/L)	Effluent AHL (lb/day)	Secondary Inhibition Criteria (mg/L)	Secondary Inhibition AHL (lb/day)	Sludge Digestion Criteria (mg/L)	Sludge Digestion AHL (lb/day)	Land Application Criteria (mg/kg)	Land Application AHL (lb/day)	MAHL (lb/day)
Metals										
Aluminum	0.95	0.2	**250**	--	--	--	--	--	--	250
Arsenic	0	0.01	**0.626**	0.1	6.95	1.6	125	41	62.0	0.626
Boron	0.05	0.75	**49.4**	--	--	--	--	--	--	49.4
Cadmium	0	0.004	**0.250**	1.0	69.5	20.0	1,564	39	59.0	0.250
Chromium	0.74	0.05	**12.0**	0.25	17.4	130	68.7	--	--	12.0
Copper	0.87	0.037	17.8	0.05	3.48	40	18.0	1500	**13.0**	13.0
Iron	0.95	0.3	**375**	--	--	--	--	--	--	375
Lead	0	0.015	**0.938**	0.5	34.8	340	26,592	300	454	0.938
Manganese	0.92	0.05	**39.1**	--	--	--	--	--	--	39.1
Mercury	0.91	0.002	**1.39**	0.1	6.95	--	--	17	25.7	1.39
Molybdenum	0	--	--	--	--	--	--	75	**113**	113
Nickel	0.39	0.1	10.3	0.25	17.4	10	10.0	420	**8.14**	8.14
Selenium	0	0.01	**0.626**	--	--	--	--	100	151	0.626
Silver	0	0.05	**3.13**	--	--	13	1,017	--	--	3.13
Sodium	0	110	**6,881**	--	--	--	--	--	--	6,881
Zinc	0.83	5.0	1,840	0.08	5.56	400	188	2800	**25.5**	25.5
Conventional Pollutants										
Chloride	0	140	**8,757**	180	12,510	--	--	--	--	8,757
Cyanide (free)	0.10	0.0043	**0.299**	--	--	--	--	--	--	0.299
Cyanide (total)	0.63	0.15	**25.4**	0.1	6.95	1.0	0.621	--	--	25.4
Fluoride	0.22	1.0	**80.2**	--	--	--	--	--	--	80.2
Hardness	0.14	50	**3,637**	--	--	--	--	--	--	3,637
Sulfate	0	150	**9,383**	--	--	500	39,106	--	--	9,383
TDS	0.04	550	**35,836**	--	--	--	--	--	--	35,836
Organics										
Toluene	0.88	0.15	**78.2**	200	13,900	--	--	--	--	78.2
Bis(2-Ethylhexyl)phthalate	0.81	0.004	**1.32**	--	--	--	--	--	--	1.32

Notes:

AHL = allowable headworks loading; MAHLs = Maximum Allowable Headworks Loadings; mg/L = milligram per liter; mg/kg = milligram per kilogram; lb/day = pounds per day

Effluent Criteria AHL = $(8.34 * C_{eff} * Q_{WRF})/(1\text{-}RE)$; C_{eff} = effluent criteria; Q_{WRF} = influent flow; RE = removal efficiency from headworks to final effluent

Secondary Inhibition Criteria = $(8.34 * C_{inhib} * Q_{WRF})/(1\text{-}RE_{prim})$; C_{inhib} = activated sludge/nitrification inhibition criteria; RE_{prim} = primary treatment removal efficiency

Sludge Digestion Criteria = $(8.34 * C_{dginhib} * Q_{dgstr})/(RE)$; $C_{dginhib}$ = anaerobic sludge digestion inhibition criteria; Q_{dgstr} = sludge flow to digester

Land application = AHL = $(0.002 * C_{slgstd} * PS/100 * Q_{sldg})/RE$; C_{slgstd} = land application standard; PS = percent solids of disposal sludge; Q_{sldg} = sludge flow to disposal

For CCWRF, Q_{WRF} = 7.5 mgd; Q_{dgstr} = 0.047 mgd; Q_{sldg} = 27.4 wet tons/day; flows based on 2009 to 2014 data

RE_{prim} estimated as 10%

For copper, zinc, and cyanide (total), the MAHL was based on the effluent criteria or land application AHLs rather than the secondary inhibition or sludge digestion inhibition AHLs since CCWRF operations do not appear to be inhibited at current loadings.

Table D-5
Sensitivity Analyses
Local Limits Report

Parameter	RP-1 Avg Influent Loading (lb/day)	RP-1 Max Influent Loading (lb/day)	RP-1 MAHL (lb/day)	RP-1 Avg Influent Loading / MAHL (%)	RP-1 Max Influent Loading / MAHL (%)	RP-4 Avg Influent Loading (lb/day)	RP-4 Max Influent Loading (lb/day)	RP-4 MAHL (lb/day)	RP-4 Avg Influent Loading / MAHL (%)	RP-4 Max Influent Loading / MAHL (%)
Metals										
Aluminum	189	272	937	20	29	34.5	3.87	334	10	1.2
Arsenic	1.13	--	2.34	48	--	0.421	--	0.834	51	--
Boron	60.8	67.6	193	31	35	21.9	33.7	62.6	35	54
Cadmium	1.13	--	0.398	**283**	--	0.421	--	0.142	**297**	--
Chromium	1.13	--	61.7	1.8	--	0.421	--	20.9	2.0	--
Copper	14.4	18.0	45.8	31	39	4.04	5.05	12.6	32	40
Iron	403	590	1758	23	34	30.3	34.5	278	11	12
Lead	2.25	--	0.961	**234**	--	0.842	--	0.342	**246**	--
Manganese	6.98	9.01	46.9	15	19	1.52	1.68	4.17	36	40
Mercury	0.065	0.180	5.21	1.3	3.5	0.021	--	0.167	13	--
Molybdenum	2.03	4.50	439	--	--	0.421	--	5.15	8.2	--
Nickel	1.13	--	24.6	4.6	--	0.421	--	12.0	3.5	--
Selenium	2.25	--	0.961	**234**	--	0.842	--	0.342	**246**	--
Silver	1.13	--	391	0.3	--	0.421	--	4.17	10	--
Sodium	20,491	22,518	25,779	**79**	**87**	8,508	14,741	9,174	**93**	**161**
Zinc	42.8	54.0	92.2	46	59	13.5	16.8	36.5	37	46
Conventional Pollutants										
Chloride	19,497	23,194	32,810	**59**	71	9,434	19,205	11,676	**81**	**164**
Cyanide (free)	0.248	0.676	1.13	22	60	0.084	0.168	0.350	24	48
Cyanide (total)	2.48	5.18	126	2.0	4.1	0.927	1.94	30.5	3.0	6.4
Fluoride	63.1	90.1	378	17	24	21.9	33.7	124	18	27
Hardness	40,082	44,360	13,786	**291**	**322**	14,657	17,436	4,906	**299**	**355**
Sulfate	13,736	71,607	35,153	39	**204**	4,296	5,138	12,510	34	41
TDS	106,285	114,842	128,895	**82**	**89**	42,791	51,551	49,323	**87**	**105**
Organics										
Toluene	1.13	--	320	0.4	--	0.421	--	12.5	3.4	--
Bis(2-Ethylhexyl)phthalate	1.58	3.15	11.7	13	27	0.758	1.94	3.71	20	52

Notes:
Results bolded if avg influent loading >60% of MAHL or max influent loading >80% MAHL
lb/day = pounds per day; % = percent; Avg = average; Max = maximum; MAHL = Maximum Allowable Headworks Loading
Average and maximum influent loadings based on 2013 - 2014 data

Table D-5
Sensitivity Analyses
Local Limits Report

Parameter	RP-5					CCWRF				
	Avg Influent Loading (lb/day)	Max Influent Loading (lb/day)	MAHL (lb/day)	Avg Influent Loading / MAHL (%)	Max Influent Loading / MAHL (%)	Avg Influent Loading (lb/day)	Max Influent Loading (lb/day)	MAHL (lb/day)	Avg Influent Loading / MAHL (%)	Max Influent Loading / MAHL (%)
Metals										
Aluminum	26.9	46.7	445	6.0	10	45.1	50.4	250	18	20
Arsenic	0.334	--	0.667	50	--	0.300	--	0.626	48	--
Boron	17.9	20.0	50.0	36	40	19.3	24.0	49.4	39	49
Cadmium	0.334	--	0.113	**294**	--	0.300	--	0.250	**120**	--
Chromium	0.334	--	18.5	1.8	--	0.300	--	12.0	2.5	--
Copper	3.96	5.34	12.1	33	44	3.77	4.80	13.0	29	37
Iron	23.4	41.4	167	14	25	44.0	51.0	375	12	14
Lead	0.667	--	0.274	**244**	--	0.600	--	0.938	**64**	--
Manganese	1.56	2.67	3.34	47	**80**	2.00	2.40	39.1	5.1	6.1
Mercury	0.017	--	0.155	11	--	0.017	0.048	1.39	1.2	3.5
Molybdenum	0.334	--	2.79	12	--	2.40	4.80	113	2.1	4.3
Nickel	0.334	--	8.40	4.0	--	0.300	--	8.14	3.7	--
Selenium	0.667	--	0.667	**100**	--	0.600	--	0.626	**96**	--
Silver	0.334	--	3.34	10	--	0.300	--	3.13	10	--
Sodium	5,786	6,472	5,004	**116**	**129**	6,045	6,845	6,881	**88**	**99**
Zinc	9.34	13.3	29.8	31	45	13.2	21.6	25.5	52	**85**
Conventional Pollutants										
Chloride	7,606	10,208	5,004	**152**	**204**	7,273	8,827	8,757	**83**	**101**
Cyanide (free)	0.067	0.133	0.334	20	40	0.060	--	0.299	20	--
Cyanide (total)	0.607	1.07	31.3	1.9	3.4	0.557	1.02	25.4	2.2	4.0
Fluoride	14.7	20.0	86.6	17	23	12.8	18.0	80.2	16	22
Hardness	13,477	15,679	3,587	**376**	**437**	11,914	16,453	3,637	**328**	**452**
Sulfate	3,069	7,606	4,003	**77**	**190**	3,668	11,049	9,383	39	**118**
TDS	33,760	40,566	36,696	**92**	**111**	32,666	36,389	35,836	**91**	**102**
Organics										
Toluene	0.334	--	77.0	0.4	--	0.300	--	78.2	0.4	--
Bis(2-Ethylhexyl)phthalate	0.534	1.13	2.43	22	47	0.486	1.08	1.32	37	**82**

Notes:
Results bolded if avg influent loading >60% of MAHL or max influent loading >80% MAHL
lb/day = pounds per day; % = percent; Avg = average; Max = maximum; MAHL = Maximum Allowable Headworks Loading
Average and maximum influent loadings based on 2013 - 2014 data

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Appendix E

Removal Efficiencies

Table E-1
RP-1 Removal Efficiencies
Local Limits Study

Aluminum			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/9/2014	0.23	0.04	83
9/10/2014	0.66	0.038	94
9/11/2014	0.99	0.036	96
9/13/2014	1.0	0.042	96
9/15/2014	0.88	0.043	95
9/16/2014	1.21	0.04	97
9/17/2014	0.94	0.036	96
9/18/2014	0.78	0.036	95
MRE	0.83625	0.039	95

Arsenic			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
1/6/2009	0.005	0.001	NC
2/3/2009	0.005	0.001	NC
3/3/2009	0.005	0.001	NC
4/7/2009	0.005	0.001	NC
5/5/2009	0.005	0.001	NC
7/7/2009	0.005	0.001	NC
10/6/2009	0.005	0.001	NC
1/5/2010	0.005	0.001	NC
4/6/2010	0.005	0.001	NC
7/6/2010	0.005	0.001	NC
10/5/2010	0.005	0.001	NC
1/4/2011	0.005	0.001	NC
4/3/2011	0.005	0.001	NC
10/6/2011	0.005	0.001	NC
1/5/2012	0.005	0.001	NC
4/5/2012	0.005	0.001	NC
10/8/2012	0.005	0.001	NC
1/7/2013	0.005	0.001	NC
4/8/2013	0.005	0.001	NC
7/8/2013	0.005	0.001	NC
10/7/2013	0.005	0.001	NC
1/6/2014	0.005	0.001	NC
4/7/2014	0.005	0.001	NC
9/9/2014	0.005	0.001	NC
9/10/2014	0.005	0.001	NC
9/11/2014	0.005	0.001	NC
9/13/2014	0.005	0.001	NC
9/15/2014	0.005	0.001	NC
9/16/2014	0.005	0.001	NC
9/17/2014	0.005	0.001	NC
9/18/2014	0.005	0.001	NC
MRE	NC	NC	NC

Boron			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/1/2009	0.2	0.2	0
10/6/2009	0.2	0.2	0
11/3/2009	0.5	0.3	40
12/1/2009	0.2	0.2	0
1/5/2010	0.2	0.2	0
2/2/2010	0.2	0.2	0
3/2/2010	0.3	0.3	0
4/6/2010	0.1	0.2	-100
5/4/2010	0.2	0.2	0
6/1/2010	0.2	0.2	0
7/6/2010	0.2	0.3	-50
8/3/2010	0.3	0.2	33
9/7/2010	0.2	0.3	-50
10/5/2010	0.2	0.2	0
11/2/2010	0.2	0.2	0
12/7/2010	0.3	0.2	33
1/4/2011	0.2	0.2	0
3/6/2011	0.2	0.2	0
4/3/2011	0.2	0.2	0
5/4/2011	0.2	0.2	0
6/8/2011	0.2	0.2	0
8/3/2011	0.2	0.2	0
9/7/2011	0.2	0.2	0
10/6/2011	0.2	0.2	0
11/3/2011	0.2	0.2	0
12/8/2011	0.2	0.2	0
1/5/2012	0.7	0.4	43
2/2/2012	0.2	0.2	0
3/8/2012	0.2	0.2	0
4/5/2012	0.2	0.2	0
5/3/2012	0.3	0.3	0
6/7/2012	0.4	0.5	-25
8/6/2012	0.3	0.2	33
9/10/2012	0.2	0.3	-50
10/8/2012	0.3	0.2	33
11/5/2012	0.2	0.2	0
12/3/2012	0.3	0.3	0
1/7/2013	0.2	0.2	0
2/4/2013	0.3	0.2	33
3/4/2013	0.3	0.2	33
4/8/2013	0.3	0.3	0
7/8/2013	0.2	0.2	0
8/5/2013	0.3	0.2	33
9/9/2013	0.3	0.2	33
10/7/2013	0.3	0.2	33

Boron (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
12/9/2013	0.2	0.2	0
1/6/2014	0.2	0.2	0
2/3/2014	0.3	0.2	33
3/3/2014	0.3	0.2	33
4/7/2014	0.3	0.2	33
9/9/2014	0.3	0.3	0
9/10/2014	0.3	0.3	0
9/11/2014	0.3	0.3	0
9/13/2014	0.2	0.2	0
9/15/2014	0.3	0.2	33
9/16/2014	0.2	0.2	0
9/17/2014	0.2	0.2	0
9/18/2014	0.3	0.2	33
MRE	0.25	0.23	9

Cadmium			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
1/6/2009	0.005	0.000125	NC
2/3/2009	0.005	0.000125	NC
3/3/2009	0.005	0.000125	NC
4/7/2009	0.005	0.000125	NC
5/5/2009	0.005	0.000125	NC
7/7/2009	0.005	0.000125	NC
10/6/2009	0.005	0.000125	NC
1/5/2010	0.005	0.000125	NC
4/6/2010	0.005	0.000125	NC
7/6/2010	0.005	0.000125	NC
10/5/2010	0.005	0.000125	NC
1/4/2011	0.005	0.000125	NC
4/3/2011	0.005	0.000125	NC
10/6/2011	0.005	0.000125	NC
1/5/2012	0.005	0.000125	NC
4/5/2012	0.005	0.000125	NC
10/8/2012	0.005	0.000125	NC
1/7/2013	0.005	0.000125	NC
4/8/2013	0.005	0.000125	NC
7/8/2013	0.005	0.000125	NC
10/7/2013	0.005	0.000125	NC
1/6/2014	0.005	0.000125	NC
4/7/2014	0.005	0.000125	NC
9/9/2014	0.005	0.000125	NC
9/10/2014	0.005	0.000125	NC
9/11/2014	0.005	0.000125	NC
9/13/2014	0.005	0.000125	NC

Table E-1
RP-1 Removal Efficiencies
Local Limits Study

Cadmium (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/15/2014	0.005	0.000125	NC
9/16/2014	0.005	0.000125	NC
9/17/2014	0.005	0.000125	NC
9/18/2014	0.005	0.000125	NC
MRE	NC	NC	NC

Chromium			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
1/6/2009	0.005	0.0011	78
2/3/2009	0.005	0.0017	66
3/3/2009	0.005	0.0005	90
4/7/2009	0.005	0.0009	82
5/5/2009	0.005	0.0010	80
7/7/2009	0.005	0.0015	70
10/6/2009	0.01	0.0009	91
1/5/2010	0.005	0.0012	76
4/6/2010	0.005	0.0012	76
7/6/2010	0.005	0.0012	76
10/5/2010	0.005	0.0009	82
1/4/2011	0.005	0.0007	86
4/3/2011	0.005	0.0007	86
10/6/2011	0.005	0.0011	78
1/5/2012	0.005	0.0009	82
4/5/2012	0.005	0.0007	86
10/8/2012	0.005	0.0008	84
1/7/2013	0.005	0.0010	80
4/8/2013	0.005	0.0009	82
7/8/2013	0.005	0.0008	84
10/7/2013	0.005	0.0008	84
1/6/2014	0.005	0.0009	82
4/7/2014	0.005	0.0008	84
9/9/2014	0.005	0.0014	72
9/10/2014	0.005	0.0009	82
9/11/2014	0.005	0.001	80
9/13/2014	0.005	0.001	80
9/15/2014	0.005	0.0008	84
9/16/2014	0.005	0.0008	84
9/17/2014	0.005	0.0008	84
9/18/2014	0.005	0.0011	78
MRE	0.0052	0.0010	81

Copper			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/6/2009	0.15	0.0017	99
1/5/2010	0.12	0.0034	97
4/6/2010	0.06	0.0023	96
7/6/2010	0.08	0.0033	96
10/5/2010	0.09	0.0018	98
1/4/2011	0.09	0.0027	97
4/3/2011	0.04	0.0032	92
10/6/2011	0.05	0.0029	94
1/5/2012	0.08	0.0026	97
4/5/2012	0.07	0.0032	95
10/8/2012	0.07	0.0022	97
1/7/2013	0.05	0.0022	96
4/8/2013	0.07	0.0024	97
7/8/2013	0.07	0.0019	97
10/7/2013	0.06	0.0018	97
1/6/2014	0.06	0.0027	96
4/7/2014	0.07	0.0019	97
9/9/2014	0.04	0.0047	88
9/10/2014	0.07	0.0036	95
9/11/2014	0.07	0.0034	95
9/13/2014	0.07	0.0036	95
9/15/2014	0.06	0.0036	94
9/16/2014	0.08	0.0036	96
9/17/2014	0.07	0.0036	95
9/18/2014	0.06	0.0036	94
MRE	0.072	0.0029	96

Iron			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/9/2014	0.76	0.063	92
9/10/2014	2.05	0.061	97
9/11/2014	1.93	0.062	97
9/13/2014	1.82	0.063	97
9/15/2014	1.87	0.068	96
9/16/2014	2.62	0.074	97
9/17/2014	1.88	0.072	96
9/18/2014	1.4	0.067	95
MRE	1.79	0.066	96

Lead			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/6/2009	0.01	0.00025	NC
1/5/2010	0.01	0.00025	NC
4/6/2010	0.01	0.00025	NC
7/6/2010	0.01	0.00025	NC
10/5/2010	0.01	0.00025	NC
1/4/2011	0.01	0.00025	NC
4/3/2011	0.01	0.00025	NC
10/6/2011	0.01	0.00025	NC
1/5/2012	0.01	0.00025	NC
4/5/2012	0.01	0.00025	NC
10/8/2012	0.01	0.00025	NC
1/7/2013	0.01	0.00025	NC
4/8/2013	0.01	0.00025	NC
7/8/2013	0.01	0.00025	NC
10/7/2013	0.01	0.00025	NC
1/6/2014	0.01	0.00025	NC
4/7/2014	0.01	0.00025	NC
9/9/2014	0.01	0.00025	NC
9/10/2014	0.01	0.00025	NC
9/11/2014	0.01	0.00025	NC
9/13/2014	0.01	0.00025	NC
9/15/2014	0.01	0.00025	NC
9/16/2014	0.01	0.00025	NC
9/17/2014	0.01	0.00025	NC
9/18/2014	0.01	0.00025	NC
MRE	NC	NC	NC

Manganese			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/6/2009	0.03	0.008	73
9/9/2014	0.01	0.006	40
9/10/2014	0.03	0.007	77
9/11/2014	0.03	0.007	77
9/13/2014	0.04	0.008	80
9/15/2014	0.03	0.006	80
9/16/2014	0.04	0.009	78
9/17/2014	0.04	0.008	80
9/18/2014	0.03	0.011	63
MRE	0.03	0.008	75

Table E-1
RP-1 Removal Efficiencies
Local Limits Study

Mercury			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
1/6/2009	0.00025	0.000025	90
2/3/2009	0.00025	0.000025	90
3/3/2009	0.00025	0.000025	90
4/7/2009	0.00025	0.000025	90
5/5/2009	0.00025	0.000025	90
7/7/2009	0.00025	0.000025	90
10/6/2009	0.00025	0.000025	90
1/5/2010	0.0007	0.000025	96
4/6/2010	0.00025	0.000025	90
7/6/2010	0.00025	0.000025	90
10/5/2010	0.00025	0.000025	90
1/4/2011	0.00025	0.000025	90
4/3/2011	0.00025	0.000025	90
10/6/2011	0.00025	0.000025	90
1/5/2012	0.00025	0.000025	90
4/5/2012	0.00025	0.000025	90
10/8/2012	0.00025	0.000025	90
1/7/2013	0.00025	0.000025	90
4/8/2013	0.00025	0.000025	90
7/8/2013	0.00025	0.000025	90
10/7/2013	0.00025	0.000025	90
1/6/2014	0.00025	0.000025	90
4/7/2014	0.00025	0.000025	90
9/9/2014	0.00025	0.000025	90
9/10/2014	0.00025	0.000025	90
9/11/2014	0.00025	0.000025	90
9/13/2014	0.00025	0.000025	90
9/15/2014	0.0008	0.000025	97
9/16/2014	0.00025	0.000025	90
9/17/2014	0.00025	0.000025	90
9/18/2014	0.00025	0.000025	90
MRE	0.00028	0.000025	91

Molybdenum			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/9/2014	0.01	0.008	20
9/10/2014	0.02	0.008	60
9/11/2014	0.01	0.009	10
9/13/2014	0.01	0.009	10
9/15/2014	0.005	0.009	-80
9/15/2014	0.005	0.008	-60
9/16/2014	0.005	0.008	-60
9/17/2014	0.005	0.009	-80
9/18/2014	0.005	0.008	-60
MRE	0.0083	0.0084	-1

Nickel			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
1/6/2009	0.005	0.002	60
2/3/2009	0.005	0.002	60
3/3/2009	0.005	0.002	60
4/7/2009	0.005	0.003	40
5/5/2009	0.005	0.003	40
7/7/2009	0.005	0.004	20
10/6/2009	0.005	0.003	40
1/5/2010	0.005	0.003	40
4/6/2010	0.005	0.002	60
7/6/2010	0.005	0.003	40
10/5/2010	0.005	0.002	60
1/4/2011	0.005	0.002	60
4/3/2011	0.005	0.003	40
10/6/2011	0.005	0.003	40
1/5/2012	0.005	0.003	40
4/5/2012	0.005	0.002	60
10/8/2012	0.005	0.002	60
1/7/2013	0.005	0.002	60
4/8/2013	0.005	0.003	40
7/8/2013	0.005	0.003	40
10/7/2013	0.005	0.003	40
1/6/2014	0.005	0.003	40
4/7/2014	0.005	0.003	40
9/9/2014	0.005	0.002	60
9/10/2014	0.005	0.002	60
9/11/2014	0.005	0.002	60
9/13/2014	0.005	0.002	60
9/15/2014	0.005	0.002	60
9/16/2014	0.005	0.002	60
9/17/2014	0.005	0.002	60
9/18/2014	0.005	0.003	40
MRE	0.005	0.0025	50

Selenium			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
1/6/2009	0.01	0.001	NC
2/3/2009	0.01	0.001	NC
3/3/2009	0.01	0.001	NC
4/7/2009	0.01	0.001	NC
5/5/2009	0.01	0.001	NC
7/7/2009	0.01	0.001	NC
10/6/2009	0.01	0.001	NC
1/5/2010	0.01	0.001	NC
4/6/2010	0.01	0.001	NC
7/6/2010	0.01	0.001	NC

Selenium (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/5/2010	0.01	0.001	NC
1/4/2011	0.01	0.001	NC
4/3/2011	0.01	0.001	NC
10/6/2011	0.01	0.001	NC
1/5/2012	0.01	0.001	NC
4/5/2012	0.01	0.001	NC
10/8/2012	0.01	0.001	NC
1/7/2013	0.01	0.001	NC
4/8/2013	0.01	0.001	NC
7/8/2013	0.01	0.001	NC
10/7/2013	0.01	0.001	NC
1/6/2014	0.01	0.001	NC
4/7/2014	0.01	0.001	NC
9/9/2014	0.01	0.001	NC
9/10/2014	0.01	0.001	NC
9/11/2014	0.01	0.001	NC
9/13/2014	0.01	0.001	NC
9/15/2014	0.01	0.001	NC
9/16/2014	0.01	0.001	NC
9/17/2014	0.01	0.001	NC
9/18/2014	0.01	0.001	NC
MRE	NC	NC	NC

Silver			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
1/6/2009	0.005	0.000125	98
2/3/2009	0.005	0.000125	98
3/3/2009	0.005	0.000125	98
4/7/2009	0.005	0.000125	98
5/5/2009	0.005	0.000125	98
7/7/2009	0.005	0.000125	98
10/6/2009	0.005	0.000125	98
1/5/2010	0.005	0.000125	98
4/6/2010	0.005	0.000125	98
7/6/2010	0.005	0.000125	98
10/5/2010	0.005	0.000125	98
1/4/2011	0.005	0.000125	98
4/3/2011	0.005	0.000125	98
10/6/2011	0.005	0.000125	98
1/5/2012	0.005	0.000125	98
4/5/2012	0.005	0.000125	98
10/8/2012	0.005	0.000125	98
1/7/2013	0.005	0.000125	98
4/8/2013	0.005	0.000125	98
7/8/2013	0.005	0.000125	98

Table E-1
RP-1 Removal Efficiencies
Local Limits Study

Silver (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/7/2013	0.005	0.000125	98
1/6/2014	0.005	0.000125	98
4/7/2014	0.005	0.00051	90
9/9/2014	0.005	0.000125	98
9/10/2014	0.005	0.000125	98
9/11/2014	0.005	0.000125	98
9/13/2014	0.005	0.000125	98
9/15/2014	0.005	0.000125	98
9/16/2014	0.005	0.000125	98
9/17/2014	0.005	0.000125	98
9/18/2014	0.005	0.000125	98
MRE	0.005	0.00014	97

Sodium			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/1/2009	71	98	-38
10/6/2009	90	103	-14
11/3/2009	86	101	-17
12/1/2009	84	96	-14
1/5/2010	81	97	-20
2/2/2010	79	104	-32
3/2/2010	88	95	-8
4/6/2010	75	94	-25
5/4/2010	74	93	-26
6/1/2010	70	94	-34
7/6/2010	79	100	-27
8/3/2010	83	99	-19
9/7/2010	85	110	-29
10/5/2010	78	98	-26
11/2/2010	89	97	-9
12/7/2010	89	102	-15
1/4/2011	88	95	-8
3/6/2011	71	88	-24
4/3/2011	72	88	-22
5/4/2011	89	87	2
6/8/2011	73	87	-19
8/3/2011	72	95	-32
9/7/2011	76	97	-28
10/6/2011	71	86	-21
11/3/2011	76	88	-16
12/8/2011	70	82	-17
1/5/2012	71	82	-15

Sodium (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
2/2/2012	73	86	-18
3/8/2012	77	96	-25
4/5/2012	74	87	-18
5/3/2012	93	107	-15
6/7/2012	85	97	-14
8/6/2012	80	96	-20
9/10/2012	80	91	-14
10/8/2012	84	99	-18
11/5/2012	90	101	-12
12/3/2012	85	96	-13
1/7/2013	79	99	-25
2/4/2013	87	100	-15
3/4/2013	91	102	-12
4/8/2013	90	106	-18
5/6/2013	96	110	-15
7/8/2013	89	106	-19
8/5/2013	93	105	-13
9/9/2013	87	99	-14
10/7/2013	88	101	-15
12/9/2013	91	105	-15
1/6/2014	95	111	-17
2/3/2014	84	104	-24
3/3/2014	100	105	-5
4/7/2014	97	110	-13
9/9/2014	88	106	-20
9/10/2014	95	107	-13
9/11/2014	97	109	-12
9/13/2014	94	109	-16
9/15/2014	92	102	-11
9/16/2014	91	100	-10
9/17/2014	91	105	-15
9/18/2014	96	107	-11
MRE	84	99	-17

Zinc			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/6/2009	0.36	0.024	93
1/5/2010	0.28	0.027	90
4/6/2010	0.23	0.026	89
7/6/2010	0.23	0.03	87
10/5/2010	0.2	0.027	87
1/4/2011	0.46	0.028	94

Zinc (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
4/3/2011	0.1	0.029	71
10/6/2011	0.16	0.026	84
1/5/2012	0.23	0.025	89
4/5/2012	0.24	0.026	89
10/8/2012	0.21	0.024	89
1/7/2013	0.17	0.027	84
4/8/2013	0.22	0.026	88
7/8/2013	0.21	0.017	92
10/7/2013	0.2	0.019	91
1/6/2014	0.2	0.022	89
4/7/2014	0.24	0.024	90
9/9/2014	0.09	0.021	77
9/10/2014	0.2	0.024	88
9/11/2014	0.19	0.022	88
9/13/2014	0.19	0.023	88
9/15/2014	0.19	0.022	88
9/16/2014	0.22	0.023	90
9/17/2014	0.19	0.022	88
9/18/2014	0.16	0.023	86
MRE	0.21	0.024	89

Chloride			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/1/2009	77	114	-48
10/6/2009	91	114	-25
11/3/2009	89	118	-33
12/1/2009	92	122	-33
1/5/2010	84	123	-46
2/2/2010	86	120	-40
3/2/2010	92	113	-23
4/6/2010	72	91	-26
5/4/2010	65	99	-52
6/1/2010	72	99	-38
7/6/2010	66	109	-65
8/3/2010	73	108	-48
9/7/2010	72	109	-51
10/5/2010	68	106	-56
11/2/2010	112	112	0
12/7/2010	89	116	-30
1/4/2011	92	109	-18
3/6/2011	51	82	-61
5/4/2011	84	92	-10

Table E-1
RP-1 Removal Efficiencies
Local Limits Study

	Chloride (cont.)		
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
6/8/2011	72	95	-32
8/3/2011	68	104	-53
9/7/2011	70	104	-49
10/6/2011	82	97	-18
11/3/2011	67	92	-37
12/8/2011	69	94	-36
1/5/2012	72	99	-38
2/2/2012	75	101	-35
3/8/2012	93	130	-40
4/5/2012	72	118	-64
5/3/2012	97	125	-29
6/7/2012	87	115	-32
8/6/2012	67	93	-39
9/10/2012	70	96	-37
9/24/2012	77	105	-36
10/8/2012	82	107	-30
11/5/2012	95	112	-18
12/3/2012	93	110	-18
1/7/2013	84	114	-36
2/4/2013	83	116	-40
3/4/2013	85	114	-34
4/8/2013	83	111	-34
5/6/2013	84	121	-44
6/3/2013	88	121	-38
7/8/2013	76	121	-59
8/5/2013	74	111	-50
9/9/2013	85	114	-34
10/7/2013	83	110	-33
11/4/2013	88	114	-30
12/9/2013	87	116	-33
1/6/2014	82	120	-46
2/3/2014	89	124	-39
3/3/2014	89	116	-30
4/7/2014	87	123	-41
9/9/2014	82	119	-45
9/10/2014	97	123	-27
9/11/2014	103	123	-19
9/13/2014	95	120	-26
9/15/2014	82	113	-38
9/16/2014	79	115	-46
9/17/2014	87	113	-30
9/18/2014	100	123	-23
MRE	82	111	-35

	Cyanide (aquatic free)		
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/1/2009	0.001	0.001	0
10/6/2009	0.001	0.001	0
11/3/2009	0.001	0.001	0
12/1/2009	0.001	0.001	0
1/5/2010	0.001	0.005	-400
1/6/2010	0.001	0.001	0
2/16/2010	0.002	0.003	-50
3/2/2010	0.003	0.001	67
4/6/2010	0.001	0.001	0
5/4/2010	0.001	0.001	0
6/1/2010	0.004	0.002	50
7/6/2010	0.001	0.003	-200
8/3/2010	0.001	0.001	0
9/7/2010	0.001	0.001	0
10/5/2010	0.001	0.001	0
12/7/2010	0.001	0.001	0
1/4/2011	0.003	0.001	67
2/10/2011	0.004	0.001	75
3/8/2011	0.001	0.001	0
4/5/2011	0.001	0.001	0
5/3/2011	0.003	0.004	-33
6/7/2011	0.001	0.001	0
7/12/2011	0.001	0.001	0
8/2/2011	0.001	0.001	0
9/13/2011	0.001	0.001	0
10/18/2011	0.001	0.001	0
11/1/2011	0.001	0.002	-100
12/13/2011	0.001	0.001	0
1/10/2012	0.001	0.001	0
2/7/2012	0.002	0.001	50
3/6/2012	0.001	0.001	0
4/17/2012	0.001	0.001	0
5/8/2012	0.001	0.001	0
6/5/2012	0.002	0.001	50
7/10/2012	0.001	0.001	0
8/2/2012	0.001	0.001	0
9/11/2012	0.006	0.001	83
10/2/2012	0.001	0.001	0
11/6/2012	0.003	0.001	67
12/4/2012	0.001	0.001	0
1/8/2013	0.001	0.001	0
2/5/2013	0.001	0.001	0
3/5/2013	0.001	0.001	0

	Cyanide (aquatic free) (cont.)		
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
4/2/2013	0.001	0.001	0
5/7/2013	0.001	0.001	0
6/4/2013	0.003	0.001	67
7/9/2013	0.001	0.001	0
8/6/2013	0.001	0.001	0
9/3/2013	0.001	0.001	0
10/1/2013	0.001	0.001	0
11/5/2013	0.001	0.001	0
12/3/2013	0.001	0.001	0
1/14/2014	0.001	0.001	0
2/11/2014	0.001	0.001	0
3/25/2014	0.001	0.001	0
4/22/2014	0.001	0.001	0
9/9/2014	0.001	0.001	0
9/10/2014	0.001	0.001	0
9/11/2014	0.001	0.001	0
9/12/2014	0.001	0.001	0
9/13/2014	0.001	0.001	0
9/15/2014	0.001	0.001	0
9/16/2014	0.001	0.001	0
9/18/2014	0.001	0.001	0
MRE	0.0014	0.0012	13

	Cyanide (total)		
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/9/2014	0.0025	0.0025	0
9/10/2014	0.019	0.0025	87
9/11/2014	0.007	0.005	29
9/12/2014	0.023	0.0025	89
9/13/2014	0.018	0.0025	86
9/15/2014	0.007	0.0025	64
9/16/2014	0.009	0.005	44
9/18/2014	0.005	0.0025	50
MRE	0.011	0.003	72

Table E-1
RP-1 Removal Efficiencies
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Fluoride			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/1/2009	0.3	0.2	33
10/6/2009	0.3	0.2	33
11/3/2009	0.3	0.2	33
12/1/2009	0.3	0.2	33
1/5/2010	0.3	0.05	83
2/2/2010	0.3	0.2	33
3/2/2010	1.7	0.2	88
4/6/2010	0.3	0.2	33
5/4/2010	0.3	0.2	33
6/1/2010	0.4	0.2	50
7/6/2010	0.3	0.2	33
8/3/2010	0.3	0.2	33
9/7/2010	0.3	0.2	33
10/5/2010	0.3	0.2	33
11/2/2010	0.2	0.2	0
12/7/2010	0.3	0.2	33
1/4/2011	0.3	0.2	33
3/6/2011	0.3	0.2	33
5/4/2011	0.3	0.2	33
6/8/2011	0.3	0.2	33
8/3/2011	0.3	0.1	67
9/7/2011	0.3	0.2	33
10/6/2011	0.3	0.2	33
11/3/2011	0.3	0.2	33
12/8/2011	0.3	0.2	33
1/5/2012	0.4	0.2	50
2/2/2012	0.3	0.2	33
3/8/2012	0.4	0.3	25
4/5/2012	0.3	0.3	0
5/3/2012	0.5	0.2	60
6/7/2012	0.4	0.1	75
8/6/2012	0.3	0.2	33
9/10/2012	0.2	0.1	50
10/8/2012	0.2	0.2	0
11/5/2012	0.2	0.2	0
12/3/2012	0.2	0.2	0
2/4/2013	0.4	0.2	50
3/4/2013	0.2	0.2	0
4/8/2013	0.3	0.2	33
5/6/2013	0.3	0.2	33
6/3/2013	0.2	0.3	-50
7/8/2013	0.2	0.2	0
8/5/2013	0.3	0.2	33
9/9/2013	0.2	0.2	0

Fluoride (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/7/2013	0.3	0.2	33
11/4/2013	0.3	0.2	33
12/9/2013	0.3	0.3	0
1/6/2014	0.3	0.2	33
2/3/2014	0.3	0.2	33
3/27/2014	0.3	0.2	33
4/7/2014	0.3	0.2	33
MRE	0.32	0.20	38

Hardness			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/1/2009	143	149	-4
10/6/2009	222	158	29
11/3/2009	186	153	18
12/1/2009	163	149	9
1/5/2010	175	142	19
2/2/2010	181	150	17
3/2/2010	169	138	18
4/6/2010	171	152	11
5/4/2010	174	154	11
6/1/2010	158	144	9
7/6/2010	173	147	15
8/3/2010	168	142	15
9/7/2010	174	150	14
10/5/2010	161	135	16
11/2/2010	177	145	18
12/7/2010	175	148	15
1/4/2011	171	143	16
3/6/2011	144	142	1
4/3/2011	143	133	7
5/4/2011	169	132	22
6/8/2011	164	126	23
8/3/2011	167	131	22
9/7/2011	173	142	18
10/6/2011	146	136	7
11/3/2011	180	152	16
12/8/2011	162	136	16
1/5/2012	163	132	19
2/2/2012	167	139	17
3/8/2012	168	141	16
4/5/2012	181	137	24
5/3/2012	181	165	9
6/7/2012	177	144	19

Hardness (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
8/6/2012	179	162	9
9/10/2012	173	149	14
10/8/2012	171	149	13
11/5/2012	172	146	15
12/3/2012	173	142	18
1/7/2013	162	144	11
2/4/2013	182	149	18
3/4/2013	174	151	13
4/8/2013	177	153	14
5/6/2013	183	162	11
7/8/2013	166	148	11
8/5/2013	183	155	15
9/9/2013	169	141	17
10/7/2013	176	149	15
12/9/2013	179	155	13
1/6/2014	192	157	18
2/3/2014	159	149	6
3/3/2014	188	152	19
4/7/2014	197	162	18
MRE	172	146	15

Sulfate			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/1/2009	36	40	-11
10/6/2009	33	41	-24
11/3/2009	34	44	-29
12/1/2009	41	48	-17
1/5/2010	42	49	-17
2/2/2010	39	46	-18
3/2/2010	191	47	75
4/6/2010	33	36	-9
5/4/2010	34	39	-15
6/1/2010	30	42	-40
7/6/2010	28	45	-61
8/3/2010	30	46	-53
9/7/2010	31	71	-129
10/5/2010	29	40	-38
11/2/2010	34	41	-21
12/7/2010	32	43	-34
1/4/2011	31	42	-35
3/6/2011	30	40	-33
5/4/2011	29	40	-38
6/8/2011	36	40	-11

Sulfate (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
8/3/2011	49	41	16
9/7/2011	37	43	-16
10/6/2011	40	39	3
11/3/2011	38	38	0
12/8/2011	40	42	-5
1/5/2012	45	47	-4
2/2/2012	40	45	-13
3/8/2012	39	52	-33
4/5/2012	42	47	-12
5/3/2012	44	50	-14
6/7/2012	46	46	0
8/6/2012	39	39	0
9/10/2012	37	40	-8
9/24/2012	39	38	3
10/8/2012	34	38	-12
11/5/2012	41	42	-2
12/3/2012	43	41	5
1/7/2013	38	41	-8
2/4/2013	44	45	-2
3/4/2013	53	50	6
4/8/2013	56	51	9
5/6/2013	51	52	-2
6/3/2013	57	51	11
7/8/2013	49	51	-4
8/5/2013	47	49	-4
9/9/2013	46	44	4
10/7/2013	46	42	9
11/4/2013	44	45	-2
12/9/2013	59	44	25
1/6/2014	45	44	2
2/3/2014	51	52	-2
3/3/2014	52	53	-2
4/7/2014	53	54	-2
9/9/2014	49	63	-29
9/10/2014	57	60	-5
9/11/2014	62	60	3
9/13/2014	53	57	-8
9/15/2014	55	57	-4
9/16/2014	36	55	-53
9/17/2014	51	52	-2
9/18/2014	56	55	2
MRE	45	46	-4

TDS			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
1/13/2009	446	495	-11
2/10/2009	408	426	-4
3/3/2009	436	450	-3
4/7/2009	512	514	0
5/5/2009	478	490	-3
7/7/2009	449	474	-6
8/4/2009	436	478	-10
9/1/2009	456	476	-4
10/6/2009	456	476	-4
11/3/2009	456	466	-2
12/1/2009	446	468	-5
1/5/2010	460	484	-5
2/2/2010	438	466	-6
3/2/2010	464	462	0
4/6/2010	428	454	-6
5/4/2010	466	458	2
6/1/2010	495	465	6
7/6/2010	464	464	0
8/3/2010	476	470	1
10/5/2010	424	452	-7
10/12/2010	470	450	4
10/19/2010	488	436	11
10/26/2010	454	466	-3
11/2/2010	484	474	2
11/9/2010	404	558	-38
11/16/2010	436	468	-7
11/23/2010	420	436	-4
11/30/2010	456	450	1
12/7/2010	454	480	-6
12/14/2010	428	466	-9
12/21/2010	362	364	-1
12/28/2010	466	460	1
1/4/2011	440	442	0
1/11/2011	476	458	4
1/18/2011	462	460	0
1/25/2011	426	446	-5
2/1/2011	416	426	-2
2/15/2011	418	438	-5
2/23/2011	420	430	-2
3/2/2011	434	434	0
3/16/2011	456	446	2
3/23/2011	402	418	-4

TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
3/30/2011	448	448	0
4/6/2011	432	444	-3
4/13/2011	448	424	5
4/20/2011	462	434	6
4/27/2011	446	430	4
5/4/2011	490	444	9
5/11/2011	410	438	-7
5/18/2011	422	428	-1
5/25/2011	482	436	10
6/1/2011	426	434	-2
6/8/2011	456	428	6
6/15/2011	424	428	-1
6/22/2011	418	444	-6
6/29/2011	548	452	18
7/13/2011	402	438	-9
7/20/2011	400	422	-6
7/27/2011	408	408	0
8/3/2011	456	458	0
8/10/2011	408	430	-5
8/17/2011	418	426	-2
8/24/2011	410	446	-9
8/31/2011	412	450	-9
9/7/2011	420	434	-3
9/14/2011	462	434	6
9/21/2011	426	426	0
9/28/2011	446	418	6
10/6/2011	392	428	-9
10/13/2011	450	453	-1
10/20/2011	416	416	0
10/27/2011	388	426	-10
11/3/2011	414	428	-3
11/10/2011	422	448	-6
11/17/2011	398	444	-12
11/23/2011	388	412	-6
12/1/2011	398	408	-3
12/8/2011	434	424	2
12/15/2011	426	418	2
12/22/2011	450	442	2
12/29/2011	424	438	-3
1/5/2012	450	442	2
1/12/2012	416	428	-3
1/19/2012	448	454	-1

Table E-1
RP-1 Removal Efficiencies
Local Limits Study

Date Collected	TDS (cont.) Influent (mg/L)	Effluent (mg/L)	RE (%)
1/26/2012	448	438	2
2/2/2012	437	435	0
2/9/2012	471	459	3
2/16/2012	494	465	6
2/23/2012	432	460	-6
3/1/2012	442	455	-3
3/8/2012	498	497	0
3/15/2012	489	472	3
3/22/2012	490	459	6
3/29/2012	457	470	-3
4/5/2012	467	454	3
4/12/2012	448	474	-6
4/19/2012	464	492	-6
4/26/2012	438	494	-13
5/3/2012	470	486	-3
5/10/2012	458	492	-7
5/17/2012	466	480	-3
5/24/2012	488	468	4
5/31/2012	458	472	-3
6/7/2012	454	458	-1
6/14/2012	442	474	-7
6/21/2012	440	456	-4
6/28/2012	464	474	-2
7/5/2012	460	474	-3
7/12/2012	450	474	-5
7/19/2012	446	436	2
7/26/2012	512	470	8
7/30/2012	462	464	0
8/6/2012	466	460	1
8/13/2012	446	434	3
8/20/2012	434	434	0
8/27/2012	430	438	-2
9/4/2012	504	446	12
9/10/2012	430	462	-7
9/17/2012	456	450	1
9/24/2012	494	456	8
10/1/2012	444	460	-4
10/8/2012	460	444	3
10/15/2012	1190	468	61
10/22/2012	480	480	0
10/29/2012	498	470	6
11/5/2012	490	472	4
11/12/2012	476	470	1
11/19/2012	472	468	1

Date Collected	TDS (cont.) Influent (mg/L)	Effluent (mg/L)	RE (%)
11/26/2012	466	466	0
12/3/2012	488	466	5
12/10/2012	474	478	-1
12/17/2012	436	472	-8
12/24/2012	480	472	2
12/31/2012	462	486	-5
1/7/2013	476	478	0
1/14/2013	426	472	-11
1/21/2013	464	472	-2
1/28/2013	464	480	-3
2/4/2013	470	478	-2
2/11/2013	448	472	-5
2/21/2013	466	494	-6
2/25/2013	450	478	-6
3/4/2013	454	478	-5
3/11/2013	484	492	-2
3/18/2013	470	470	0
3/25/2013	474	478	-1
4/1/2013	464	482	-4
4/8/2013	482	470	2
4/15/2013	460	496	-8
4/22/2013	470	492	-5
4/29/2013	492	488	1
5/6/2013	466	494	-6
5/20/2013	452	498	-10
5/30/2013	464	486	-5
6/3/2013	464	484	-4
6/10/2013	498	496	0
6/17/2013	502	528	-5
6/24/2013	446	484	-9
7/1/2013	474	490	-3
7/8/2013	478	514	-8
7/15/2013	448	496	-11
7/22/2013	466	488	-5
7/29/2013	482	478	1
8/5/2013	472	472	0
8/12/2013	450	496	-10
8/19/2013	456	474	-4
8/26/2013	472	504	-7
9/5/2013	476	482	-1
9/9/2013	468	484	-3
9/16/2013	482	482	0
9/23/2013	472	500	-6
9/30/2013	486	502	-3

Date Collected	TDS (cont.) Influent (mg/L)	Effluent (mg/L)	RE (%)
10/7/2013	466	470	-1
10/14/2013	466	484	-4
10/21/2013	454	484	-7
10/28/2013	472	466	1
11/4/2013	478	494	-3
11/11/2013	486	482	1
11/18/2013	470	488	-4
11/25/2013	494	494	0
12/2/2013	478	482	-1
12/9/2013	504	508	-1
12/16/2013	460	508	-10
12/23/2013	444	480	-8
12/30/2013	502	516	-3
1/6/2014	484	506	-5
1/13/2014	506	504	0
1/20/2014	472	488	-3
1/27/2014	502	512	-2
2/3/2014	464	498	-7
2/10/2014	464	496	-7
2/24/2014	452	510	-13
3/3/2014	482	478	1
3/10/2014	476	496	-4
3/17/2014	476	490	-3
3/24/2014	444	468	-5
3/31/2014	430	478	-11
4/7/2014	446	526	-18
4/14/2014	482	518	-7
4/21/2014	496	502	-1
4/28/2014	496	486	2
9/9/2014	492	516	-5
9/10/2014	544	534	2
9/11/2014	510	508	0
9/13/2014	486	508	-5
9/15/2014	486	486	0
9/16/2014	446	490	-10
9/17/2014	494	496	0
9/18/2014	496	494	0
MRE	461	467	-1

Table E-1
RP-1 Removal Efficiencies
Local Limits Study

	Toluene		
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/21/2009	0.0025	0.0005	80
1/5/2010	0.0025	0.0005	80
7/6/2010	0.014	0.0005	96
10/5/2010	0.0025	0.0005	80
1/4/2011	0.0025	0.0005	80
4/5/2011	0.0025	0.0005	80
7/5/2011	0.007	0.0005	93
10/4/2011	0.0025	0.0005	80
1/3/2012	0.0025	0.0005	80
9/15/2014	0.005	0.0005	90
9/16/2014	0.005	0.0005	90
9/18/2014	0.005	0.0005	90
MRE	0.004	0.0005	89

	bis(2-Ethylhexyl)phthalate		
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/5/2009	0.012	0.001	92
1/4/2010	0.01	0.001	90
4/5/2010	0.018	0.001	94
7/5/2010	0.015	0.001	93
10/4/2010	0.01	0.001	90
1/3/2011	0.015	0.001	93
4/3/2011	0.011	0.001	91
7/4/2011	0.013	0.001	92
1/3/2012	0.019	0.001	95
4/5/2012	0.012	0.001	92
4/2/2013	0.013	0.001	92
9/15/2014	0.014	0.001	93
9/16/2014	0.005	0.001	80
9/18/2014	0.005	0.001	80
MRE	0.0123	0.001	92

Notes:
mg/L = milligrams per liter
RE = removal efficiency
MRE = mean removal efficiency
NC = not calculated
% = percent
Blue shaded cells represent non-detect results that were substituted with 1/2 the reporting limil

Table E-2
RP-4 Removal Efficiencies
Local Limits Study

Aluminum			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/9/2014	0.45	0.0125	97
9/10/2014	0.38	0.0125	97
9/11/2014	0.35	0.0125	96
9/12/2014	0.42	0.0125	97
9/13/2014	0.45	0.026	94
9/15/2014	0.46	0.029	94
9/16/2014	0.39	0.038	90
9/17/2014	0.36	0.031	91
MRE	0.41	0.022	95

Arsenic			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/7/2013	0.005	0.001	NC
9/9/2014	0.005	0.001	NC
9/10/2014	0.005	0.001	NC
9/11/2014	0.005	0.001	NC
9/12/2014	0.005	0.001	NC
9/13/2014	0.005	0.001	NC
9/15/2014	0.005	0.001	NC
9/16/2014	0.005	0.001	NC
9/17/2014	0.005	0.001	NC
MRE	NC	NC	NC

Boron			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/1/2009	0.3	0.3	0
10/6/2009	0.2	0.3	-50
11/3/2009	0.3	0.3	0
12/1/2009	0.2	0.3	-50
1/5/2010	0.2	0.2	0
2/2/2010	0.2	0.2	0
3/2/2010	0.2	0.3	-50
4/6/2010	0.2	0.2	0
5/4/2010	0.2	0.3	-50
6/1/2010	0.3	0.3	0
7/6/2010	0.3	0.3	0
8/3/2010	0.2	0.2	0
9/7/2010	0.2	0.3	-50
10/5/2010	0.2	0.2	0
11/2/2010	0.2	0.2	0

Boron (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
12/7/2010	0.2	0.3	-50
1/4/2011	0.2	0.2	0
2/8/2011	0.2	0.2	0
3/6/2011	0.3	0.2	33
4/3/2011	0.3	0.2	33
5/4/2011	0.1	0.2	-100
6/8/2011	0.2	0.2	0
7/6/2011	0.3	0.2	33
8/3/2011	0.2	0.2	0
9/7/2011	0.2	0.3	-50
10/6/2011	0.2	0.2	0
11/3/2011	0.2	0.2	0
12/8/2011	0.2	0.2	0
1/5/2012	0.2	0.2	0
2/2/2012	0.1	0.2	-100
3/8/2012	0.2	0.2	0
4/5/2012	0.3	0.2	33
5/3/2012	0.3	0.3	0
6/7/2012	0.3	0.3	0
7/2/2012	0.3	0.3	0
8/6/2012	0.3	0.2	33
9/10/2012	0.3	0.2	33
10/8/2012	0.3	0.3	0
11/5/2012	0.2	0.2	0
12/3/2012	0.2	0.2	0
1/7/2013	0.2	0.2	0
2/4/2013	0.3	0.2	33
3/4/2013	0.4	0.3	25
4/8/2013	0.3	0.3	0
5/6/2013	0.3	0.3	0
6/3/2013	0.3	0.3	0
7/8/2013	0.3	0.3	0
8/5/2013	0.3	0.3	0
9/9/2013	0.4	0.3	25
10/7/2013	0.3	0.2	33
11/4/2013	0.1	0.2	-100
12/9/2013	0.1	0.2	-100
1/6/2014	0.3	0.3	0
2/3/2014	0.3	0.3	0
3/3/2014	0.2	0.3	-50
9/9/2014	0.3	0.3	0
9/10/2014	0.2	0.3	-50
9/11/2014	0.2	0.3	-50

Boron (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/12/2014	0.2	0.3	-50
9/13/2014	0.2	0.3	-50
9/15/2014	0.3	0.3	0
9/16/2014	0.2	0.3	-50
9/17/2014	0.2	0.3	-50
MRE	0.23	0.24	-5

Cadmium			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/7/2013	0.005	0.000125	NC
9/9/2014	0.005	0.000125	NC
9/10/2014	0.005	0.000125	NC
9/11/2014	0.005	0.000125	NC
9/12/2014	0.005	0.000125	NC
9/13/2014	0.005	0.000125	NC
9/15/2014	0.005	0.000125	NC
9/16/2014	0.005	0.000125	NC
9/17/2014	0.005	0.000125	NC
MRE	NC	NC	NC

Chromium			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/7/2013	0.005	0.0008	84
9/9/2014	0.005	0.0009	82
9/10/2014	0.005	0.001	80
9/11/2014	0.005	0.0009	82
9/12/2014	0.005	0.001	80
9/13/2014	0.005	0.001	80
9/15/2014	0.005	0.0008	84
9/16/2014	0.005	0.0018	64
9/17/2014	0.005	0.001	80
MRE	0.005	0.0010	80

Table E-2
RP-4 Removal Efficiencies
Local Limits Study

Copper

Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/7/2013	0.05	0.0025	95
9/9/2014	0.05	0.0055	89
9/10/2014	0.05	0.0056	89
9/11/2014	0.04	0.0056	86
9/12/2014	0.05	0.0058	88
9/13/2014	0.06	0.0057	91
9/15/2014	0.05	0.0093	81
9/16/2014	0.04	0.0065	84
9/17/2014	0.05	0.0063	87
MRE	0.049	0.0059	88

Manganese

Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/9/2014	0.02	0.005	75
9/10/2014	0.02	0.005	75
9/11/2014	0.02	0.006	70
9/12/2014	0.02	0.005	75
9/13/2014	0.02	0.011	45
9/15/2014	0.01	0.007	30
9/16/2014	0.02	0.014	30
9/17/2014	0.01	0.088	-780
MRE	0.02	0.02	-1

Nickel

Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/7/2013	0.005	0.002	60
9/9/2014	0.005	0.003	40
9/10/2014	0.005	0.003	40
9/11/2014	0.005	0.003	40
9/12/2014	0.005	0.003	40
9/13/2014	0.005	0.003	40
9/15/2014	0.005	0.004	20
9/16/2014	0.005	0.004	20
9/17/2014	0.005	0.004	20
MRE	0.005	0.0032	36

Iron

Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/9/2014	0.37	0.031	92
9/10/2014	0.37	0.028	92
9/11/2014	0.32	0.03	91
9/12/2014	0.37	0.031	92
9/13/2014	0.41	0.032	92
9/15/2014	0.34	0.041	88
9/16/2014	0.34	0.043	87
9/17/2014	0.34	0.033	90
MRE	0.36	0.034	91

Mercury

Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/7/2013	0.00025	0.000025	NC
9/9/2014	0.00025	0.000025	NC
9/10/2014	0.00025	0.000025	NC
9/11/2014	0.00025	0.000025	NC
9/12/2014	0.00025	0.000025	NC
9/13/2014	0.00025	0.000025	NC
9/15/2014	0.00025	0.000025	NC
9/16/2014	0.00025	0.000025	NC
9/17/2014	0.00025	0.000025	NC
MRE	NC	NC	NC

Selenium

Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/7/2013	0.01	0.001	NC
9/9/2014	0.01	0.001	NC
9/10/2014	0.01	0.001	NC
9/11/2014	0.01	0.001	NC
9/12/2014	0.01	0.001	NC
9/13/2014	0.01	0.001	NC
9/15/2014	0.01	0.001	NC
9/16/2014	0.01	0.001	NC
9/17/2014	0.01	0.001	NC
MRE	NC	NC	NC

Lead

Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/7/2013	0.01	0.00025	NC
9/9/2014	0.01	0.00025	NC
9/10/2014	0.01	0.00025	NC
9/11/2014	0.01	0.00025	NC
9/12/2014	0.01	0.00025	NC
9/13/2014	0.01	0.00025	NC
9/15/2014	0.01	0.00025	NC
9/16/2014	0.01	0.00025	NC
9/17/2014	0.01	0.00025	NC
MRE	NC	NC	NC

Molybdenum

Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/9/2014	0.005	0.004	20
9/10/2014	0.005	0.004	20
9/11/2014	0.005	0.004	20
9/12/2014	0.005	0.004	20
9/13/2014	0.005	0.005	0
9/15/2014	0.005	0.005	0
9/16/2014	0.005	0.004	20
9/17/2014	0.005	0.004	20
MRE	0.005	0.0043	15

Silver

Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/7/2013	0.005	0.000125	NC
9/9/2014	0.005	0.000125	NC
9/10/2014	0.005	0.000125	NC
9/11/2014	0.005	0.000125	NC
9/12/2014	0.005	0.000125	NC
9/13/2014	0.005	0.000125	NC
9/15/2014	0.005	0.000125	NC
9/16/2014	0.005	0.000125	NC
9/17/2014	0.005	0.000125	NC
MRE	NC	NC	NC

Table E-2
RP-4 Removal Efficiencies
Local Limits Study

Sodium			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/1/2009	83	92	-11
10/6/2009	95	106	-12
11/3/2009	85	96	-13
12/1/2009	83	97	-17
1/5/2010	81	97	-20
2/2/2010	71	86	-21
3/2/2010	80	90	-13
4/6/2010	72	90	-25
5/4/2010	72	86	-19
6/1/2010	80	84	-5
7/6/2010	86	89	-3
8/3/2010	80	93	-16
9/7/2010	80	89	-11
10/5/2010	78	88	-13
11/2/2010	88	87	1
12/7/2010	85	92	-8
1/4/2011	76	88	-16
2/8/2011	82	81	1
3/6/2011	72	78	-8
4/3/2011	84	74	12
5/4/2011	68	80	-18
6/8/2011	67	78	-16
7/6/2011	75	82	-9
8/3/2011	69	79	-14
9/7/2011	73	88	-21
10/6/2011	71	78	-10
11/3/2011	85	79	7
12/8/2011	71	79	-11
1/5/2012	65	76	-17
2/2/2012	68	79	-16
3/8/2012	72	85	-18
4/5/2012	87	83	5
5/3/2012	91	98	-8
6/7/2012	78	97	-24
7/2/2012	79	87	-10
8/6/2012	78	91	-17
9/10/2012	81	84	-4
10/8/2012	90	97	-8
11/5/2012	92	94	-2
12/3/2012	76	87	-14
1/7/2013	78	92	-18
2/4/2013	76	91	-20
3/4/2013	94	99	-5
4/8/2013	106	99	7

Sodium (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
5/6/2013	106	100	6
6/3/2013	103	103	0
7/8/2013	92	100	-9
8/5/2013	96	103	-7
9/9/2013	94	102	-9
10/7/2013	106	93	12
11/4/2013	105	105	0
12/9/2013	119	108	9
1/6/2014	104	113	-9
2/3/2014	104	107	-3
3/3/2014	175	106	39
4/8/2014	94	101	-7
9/9/2014	102	107	-5
9/10/2014	100	106	-6
9/11/2014	89	110	-24
9/12/2014	92	114	-24
9/13/2014	96	111	-16
9/15/2014	97	106	-9
9/16/2014	94	108	-15
9/17/2014	90	110	-22
MRE	87	93	-7

Zinc			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
10/7/2013	0.17	0.022	87
9/9/2014	0.15	0.035	77
9/10/2014	0.17	0.034	80
9/11/2014	0.15	0.033	78
9/12/2014	0.18	0.037	79
9/13/2014	0.20	0.034	83
9/15/2014	0.14	0.040	71
9/16/2014	0.15	0.038	75
9/17/2014	0.15	0.038	75
MRE	0.16	0.035	79

Chloride			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/1/2009	78	103	-32
10/6/2009	86	117	-36
11/3/2009	80	116	-45
12/1/2009	91	131	-44
1/5/2010	84	113	-35
2/2/2010	78	92	-18
5/4/2010	68	84	-24
6/1/2010	72	81	-13
7/6/2010	79	104	-32
8/3/2010	73	103	-41
9/7/2010	74	91	-23
10/5/2010	72	94	-31
11/2/2010	93	96	-3
12/7/2010	94	103	-10
1/4/2011	72	97	-35
2/8/2011	102	86	16
3/6/2011	52	70	-35
5/4/2011	60	82	-37
6/8/2011	67	86	-28
7/6/2011	69	92	-33
8/3/2011	70	82	-17
9/7/2011	97	98	-1
10/6/2011	74	91	-23
11/3/2011	90	83	8
12/8/2011	68	101	-49
1/5/2012	81	101	-25
2/2/2012	83	97	-17
3/8/2012	92	116	-26
4/5/2012	98	114	-16
5/3/2012	95	116	-22
6/7/2012	76	115	-51
7/2/2012	79	100	-27
9/10/2012	72	91	-26
9/24/2012	95	108	-14
10/8/2012	97	113	-16
11/5/2012	105	120	-14
12/3/2012	80	106	-33
1/7/2013	81	120	-48
2/4/2013	67	105	-57
3/4/2013	87	110	-26
4/8/2013	127	115	9
5/6/2013	119	111	7
6/3/2013	124	119	4
7/8/2013	84	110	-31

Table E-2
RP-4 Removal Efficiencies
Local Limits Study

Chloride (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
8/5/2013	91	100	-10
9/9/2013	102	126	-24
10/7/2013	114	111	3
11/4/2013	129	132	-2
12/9/2013	161	129	20
1/6/2014	105	132	-26
2/3/2014	122	133	-9
3/3/2014	228	117	49
4/7/2014	91	114	-25
9/9/2014	121	120	1
9/10/2014	117	125	-7
9/11/2014	96	124	-29
9/12/2014	100	128	-28
9/13/2014	107	122	-14
9/15/2014	119	120	-1
9/16/2014	109	124	-14
9/17/2014	91	115	-26
MRE	93	107	-15

Cyanide (aquatic free)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/9/2014	0.001	0.001	NC
9/10/2014	0.001	0.001	NC
9/11/2014	0.001	0.001	NC
9/12/2014	0.001	0.001	NC
9/13/2014	0.001	0.001	NC
9/15/2014	0.001	0.001	NC
9/16/2014	0.001	0.001	NC
9/17/2014	0.001	0.001	NC
9/18/2014	0.001	0.001	NC
MRE	NC	NC	NC

Cyanide (total)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/9/2014	0.0025	0.008	-220
9/10/2014	0.023	0.009	61
9/11/2014	0.009	0.005	44
9/12/2014	0.013	0.0025	81
9/13/2014	0.015	0.0025	83
9/15/2014	0.012	0.005	58
9/16/2014	0.015	0.0025	83
9/17/2014	0.0025	0.0025	0
9/18/2014	0.005	0.0025	50
MRE	0.0108	0.0044	59

Fluoride			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/1/2009	0.2	0.2	0
10/6/2009	0.2	0.05	75
11/3/2009	0.3	0.05	83
12/1/2009	0.3	0.05	83
1/5/2010	0.3	0.1	67
2/2/2010	0.3	0.05	83
5/4/2010	0.3	0.2	33
6/1/2010	0.3	0.3	0
7/6/2010	0.3	0.2	33
8/3/2010	0.3	0.2	33
9/7/2010	0.3	0.05	83
10/5/2010	0.3	0.2	33
11/2/2010	0.3	0.2	33
12/7/2010	0.2	0.2	0
1/4/2011	0.3	0.2	33
2/8/2011	0.3	0.1	67
3/6/2011	0.3	0.2	33
4/6/2011	0.3	0.2	33
5/4/2011	0.3	0.2	33
8/3/2011	0.3	0.2	33
9/7/2011	0.2	0.8	-300
10/6/2011	0.3	0.2	33
11/3/2011	0.3	0.2	33
12/8/2011	0.3	0.2	33
1/5/2012	0.2	0.2	0
4/8/2013	0.2	0.2	0
5/6/2013	0.2	0.2	0
6/3/2013	0.2	0.2	0
10/7/2013	0.3	0.1	67

Fluoride (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
11/4/2013	0.2	0.1	50
12/9/2013	0.2	0.2	0
1/6/2014	0.3	0.1	67
2/3/2014	0.2	0.2	0
3/27/2014	0.4	0.1	75
4/7/2014	0.3	0.2	33
MRE	0.27	0.18	33

Hardness			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
4/8/2013	178	148	17
5/6/2013	169	150	11
6/3/2013	161	144	11
7/8/2013	159	138	13
8/5/2013	174	157	10
9/9/2013	168	143	15
10/7/2013	179	147	18
11/4/2013	177	157	11
12/9/2013	167	145	13
1/6/2014	183	152	17
2/3/2014	163	136	17
3/3/2014	207	146	29
MRE	174	147	15

Sulfate			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/1/2009	31	42	-35
10/6/2009	37	43	-16
11/3/2009	40	45	-13
12/1/2009	45	52	-16
1/5/2010	45	50	-11
2/2/2010	34	43	-26
5/4/2010	35	43	-23
6/1/2010	33	44	-33
7/6/2010	36	42	-17
8/3/2010	33	41	-24
9/7/2010	34	40	-18
10/5/2010	35	39	-11
11/2/2010	35	43	-23
12/7/2010	34	44	-29
1/4/2011	33	42	-27

Table E-2
RP-4 Removal Efficiencies
Local Limits Study

Sulfate (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
2/8/2011	35	42	-20
3/6/2011	30	37	-23
5/4/2011	32	39	-22
6/8/2011	35	43	-23
7/6/2011	37	40	-8
8/3/2011	38	40	-5
9/7/2011	37	42	-14
10/6/2011	38	41	-8
11/3/2011	36	40	-11
12/8/2011	39	45	-15
1/5/2012	44	47	-7
2/2/2012	42	47	-12
3/8/2012	50	52	-4
4/5/2012	46	48	-4
5/3/2012	53	53	0
6/7/2012	42	47	-12
7/2/2012	33	40	-21
9/10/2012	44	37	16
9/24/2012	36	38	-6
10/8/2012	35	40	-14
11/5/2012	35	42	-20
12/3/2012	39	42	-8
1/7/2013	40	45	-13
2/4/2013	39	46	-18
3/4/2013	50	53	-6
4/8/2013	56	55	2
5/6/2013	51	54	-6
6/3/2013	59	58	2
7/8/2013	48	52	-8
8/5/2013	43	47	-9
9/9/2013	46	48	-4
10/7/2013	40	43	-8
11/4/2013	44	47	-7
12/9/2013	51	52	-2
1/6/2014	48	52	-8
2/3/2014	52	59	-13
3/3/2014	47	56	-19
4/7/2014	47	54	-15
9/9/2014	54	58	-7
9/10/2014	57	60	-5
9/11/2014	56	60	-7
9/12/2014	54	60	-11
9/13/2014	54	59	-9

Sulfate (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/14/2014	54	57	-6
9/15/2014	57	57	0
9/16/2014	54	54	0
9/17/2014	61	57	7
MRE	43	47	-11

TDS			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/1/2009	470	442	6
9/8/2009	470	456	3
9/15/2009	446	434	3
9/22/2009	452	434	4
9/29/2009	476	440	8
10/6/2009	496	456	8
10/13/2009	446	438	2
10/20/2009	478	446	7
10/27/2009	474	460	3
11/3/2009	440	440	0
11/10/2009	432	428	1
11/17/2009	440	446	-1
11/24/2009	448	438	2
12/1/2009	482	452	6
12/8/2009	466	436	6
12/15/2009	456	418	8
12/22/2009	452	444	2
12/29/2009	444	426	4
1/5/2010	484	462	5
1/12/2010	478	428	10
1/19/2010	466	418	10
1/26/2010	464	426	8
2/2/2010	438	412	6
2/9/2010	452	404	11
2/16/2010	454	404	11
2/23/2010	428	406	5
3/2/2010	454	420	7
3/9/2010	434	406	6
3/16/2010	464	412	11
3/23/2010	438	412	6
3/30/2010	426	408	4
4/6/2010	416	406	2
4/13/2010	432	406	6
4/20/2010	426	410	4

TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
4/27/2010	454	408	10
5/4/2010	416	412	1
5/11/2010	472	418	11
5/18/2010	434	412	5
5/25/2010	458	409	11
6/1/2010	514	433	16
6/8/2010	464	420	9
6/15/2010	444	420	5
6/22/2010	420	430	-2
6/29/2010	400	428	-7
7/6/2010	476	436	8
7/13/2010	428	420	2
7/20/2010	464	440	5
7/27/2010	424	448	-6
8/3/2010	456	432	5
8/10/2010	442	424	4
8/17/2010	472	430	9
8/24/2010	448	430	4
8/31/2010	428	422	1
9/7/2010	456	422	7
9/14/2010	416	410	1
9/21/2010	462	436	6
9/28/2010	448	422	6
10/5/2010	424	424	0
10/12/2010	432	448	-4
10/19/2010	458	436	5
10/26/2010	404	406	0
11/2/2010	482	426	12
11/9/2010	402	426	-6
11/16/2010	446	426	4
11/23/2010	420	422	0
11/30/2010	454	428	6
12/7/2010	446	440	1
12/14/2010	426	446	-5
12/21/2010	362	344	5
12/28/2010	442	440	0
1/4/2011	434	398	8
1/11/2011	438	412	6
1/18/2011	426	412	3
1/25/2011	412	408	1
2/1/2011	416	400	4
2/8/2011	526	396	25
2/15/2011	432	386	11

Table E-2
RP-4 Removal Efficiencies
Local Limits Study

Date Collected	TDS (cont.) Influent (mg/L)	Effluent (mg/L)	RE (%)
2/23/2011	394	400	-2
3/2/2011	418	394	6
3/9/2011	408	384	6
3/16/2011	380	386	-2
3/23/2011	394	390	1
3/30/2011	414	382	8
4/6/2011	386	396	-3
4/13/2011	408	381	7
4/20/2011	390	386	1
4/27/2011	384	394	-3
5/4/2011	414	412	0
5/11/2011	392	404	-3
5/18/2011	414	404	2
5/25/2011	446	408	9
6/1/2011	436	410	6
6/8/2011	462	404	13
6/15/2011	418	408	2
6/22/2011	418	414	1
6/29/2011	398	414	-4
7/6/2011	426	416	2
7/13/2011	390	392	-1
7/20/2011	396	394	1
7/27/2011	392	390	1
8/3/2011	424	400	6
8/10/2011	402	398	1
8/17/2011	386	400	-4
8/24/2011	424	416	2
8/31/2011	424	396	7
9/7/2011	446	404	9
9/14/2011	428	404	6
9/21/2011	410	398	3
9/28/2011	420	400	5
10/6/2011	382	392	-3
10/13/2011	445	413	7
10/20/2011	436	412	6
10/27/2011	386	406	-5
11/3/2011	468	398	15
11/10/2011	426	408	4
11/17/2011	384	390	-2
11/23/2011	370	386	-4
12/1/2011	368	372	-1
12/8/2011	454	400	12
12/15/2011	394	396	-1

Date Collected	TDS (cont.) Influent (mg/L)	Effluent (mg/L)	RE (%)
12/22/2011	410	398	3
12/29/2011	412	406	1
1/5/2012	412	404	2
1/12/2012	406	404	0
1/19/2012	410	408	0
1/26/2012	404	410	-1
2/2/2012	420	405	4
2/9/2012	421	426	-1
2/16/2012	424	414	2
2/23/2012	402	423	-5
3/1/2012	568	413	27
3/8/2012	474	451	5
3/15/2012	514	440	14
3/22/2012	449	423	6
3/29/2012	489	426	13
4/5/2012	476	422	11
4/12/2012	454	440	3
4/19/2012	490	428	13
5/3/2012	462	452	2
5/10/2012	468	470	0
5/17/2012	486	454	7
5/24/2012	496	442	11
5/31/2012	450	436	3
6/7/2012	452	438	3
6/14/2012	448	436	3
6/21/2012	450	460	-2
6/28/2012	442	432	2
7/5/2012	438	422	4
7/12/2012	432	420	3
7/19/2012	426	412	3
7/26/2012	494	426	14
7/30/2012	478	428	10
8/6/2012	490	444	9
8/13/2012	484	428	12
8/20/2012	426	424	0
8/27/2012	454	434	4
9/4/2012	530	418	21
9/10/2012	512	418	18
9/17/2012	508	426	16
9/24/2012	514	434	16
10/1/2012	482	428	11
10/8/2012	490	440	10
10/15/2012	480	440	8

Date Collected	TDS (cont.) Influent (mg/L)	Effluent (mg/L)	RE (%)
10/22/2012	508	454	11
10/29/2012	542	468	14
11/5/2012	508	452	11
11/12/2012	460	450	2
11/19/2012	502	440	12
11/26/2012	480	432	10
12/3/2012	484	438	10
12/10/2012	540	440	19
12/17/2012	526	440	16
12/24/2012	512	468	9
12/31/2012	480	450	6
1/7/2013	476	464	3
1/14/2013	456	446	2
1/21/2013	490	444	9
1/28/2013	500	456	9
2/4/2013	466	446	4
2/11/2013	448	416	7
2/21/2013	460	434	6
2/25/2013	456	416	9
3/4/2013	468	456	3
3/11/2013	508	478	6
3/18/2013	496	462	7
3/25/2013	512	462	10
4/1/2013	500	456	9
4/8/2013	558	452	19
4/15/2013	540	464	14
4/22/2013	482	456	5
4/29/2013	490	454	7
5/6/2013	514	448	13
5/13/2013	470	446	5
5/20/2013	536	452	16
5/30/2013	476	452	5
6/3/2013	512	456	11
6/10/2013	526	460	13
6/17/2013	584	498	15
6/24/2013	512	480	6
7/1/2013	492	460	7
7/8/2013	518	458	12
7/15/2013	470	444	6
7/22/2013	498	450	10
7/29/2013	474	436	8
8/5/2013	488	452	7
8/12/2013	468	440	6

Table E-2
RP-4 Removal Efficiencies
Local Limits Study

TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
8/19/2013	470	444	6
8/26/2013	442	442	0
9/5/2013	582	442	24
9/9/2013	506	460	9
9/16/2013	522	458	12
9/23/2013	490	472	4
9/30/2013	498	482	3
10/7/2013	536	448	16
10/14/2013	472	442	6
10/21/2013	488	464	5
10/28/2013	528	480	9
11/4/2013	522	482	8
11/11/2013	588	464	21
11/18/2013	514	486	5
11/25/2013	574	472	18
12/2/2013	566	488	14
12/9/2013	588	492	16
12/16/2013	570	452	21
12/23/2013	514	532	-4
12/30/2013	612	496	19
1/6/2014	504	490	3
1/13/2014	594	488	18
1/20/2014	632	476	25
1/27/2014	632	478	24
2/3/2014	518	492	5
2/10/2014	544	480	12
2/24/2014	530	482	9
3/3/2014	694	448	35
3/10/2014	506	456	10
3/17/2014	480	450	6
3/24/2014	528	448	15
3/31/2014	512	458	11
4/7/2014	516	486	6
4/14/2014	490	484	1
4/28/2014	576	476	17
9/9/2014	568	598	-5
9/10/2014	530	540	-2
9/11/2014	454	536	-18
9/13/2014	492	528	-7
9/14/2014	500	534	-7
9/15/2014	532	508	5
9/16/2014	508	508	0
9/17/2014	494	530	-7
MRE	467	435	7

Toluene			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/15/2014	0.005	0.0005	NC
9/16/2014	0.005	0.0005	NC
9/18/2014	0.005	0.0005	NC
MRE	NC	NC	NC

bis(2-ethylhexyl)phthalate			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/15/2014	0.023	0.001	96
9/16/2014	0.005	0.001	80
9/18/2014	0.005	0.001	80
MRE	0.011	0.001	91

Notes:
mg/L = milligrams per liter
RE = removal efficiency
MRE = mean removal efficiency
NC = not calculated
% = percent
Blue shaded cells represent non-detect results that were substituted with 1/2 the reporting limit

Table E-3
RP-5 Removal Efficiencies
Local Limits Study

Aluminum			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/9/2014	0.25	0.0125	95
9/10/2014	0.42	0.0125	97
9/11/2014	0.47	0.0125	97
9/12/2014	0.7	0.0125	98
9/13/2014	0.41	0.0125	97
9/15/2014	0.52	0.0125	98
9/16/2014	0.46	0.0125	97
9/17/2014	0.2	0.0125	94
9/18/2014	0.2	0.0125	94
MRE	0.40	0.0125	97

Arsenic			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/6/2009	0.005	0.001	NC
1/5/2010	0.005	0.001	NC
4/6/2010	0.005	0.001	NC
7/6/2010	0.005	0.001	NC
1/4/2011	0.005	0.001	NC
4/3/2011	0.005	0.001	NC
1/5/2012	0.005	0.001	NC
4/5/2012	0.005	0.001	NC
10/8/2012	0.005	0.001	NC
1/7/2013	0.005	0.001	NC
4/8/2013	0.005	0.001	NC
10/7/2013	0.005	0.001	NC
1/6/2014	0.005	0.001	NC
4/7/2014	0.005	0.001	NC
9/9/2014	0.005	0.001	NC
9/10/2014	0.005	0.001	NC
9/11/2014	0.005	0.001	NC
9/12/2014	0.005	0.001	NC
9/13/2014	0.005	0.001	NC
9/15/2014	0.005	0.001	NC
9/16/2014	0.005	0.001	NC
9/17/2014	0.005	0.001	NC
9/18/2014	0.005	0.001	NC
MRE	NC	NC	NC

Boron			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	0.3	0.2	33
10/6/2009	0.2	0.3	-50
11/3/2009	0.3	0.2	33
12/1/2009	0.2	0.3	-50

Boron (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/5/2010	0.2	0.3	-50
2/2/2010	0.3	0.3	0
3/2/2010	0.3	0.3	0
4/6/2010	0.2	0.3	-50
5/4/2010	0.2	0.3	-50
6/1/2010	0.3	0.3	0
7/6/2010	0.3	0.3	0
8/3/2010	0.3	0.3	0
11/2/2010	0.3	0.3	0
12/7/2010	0.3	0.3	0
1/4/2011	0.3	0.2	33
3/6/2011	0.3	0.3	0
4/3/2011	0.3	0.3	0
5/4/2011	0.2	0.2	0
6/8/2011	0.3	0.3	0
11/3/2011	0.2	0.2	0
12/8/2011	0.2	0.2	0
1/5/2012	0.2	0.3	-50
2/2/2012	0.2	0.2	0
4/5/2012	0.2	0.2	0
5/3/2012	0.3	0.3	0
10/8/2012	0.3	0.3	0
11/5/2012	0.3	0.2	33
12/3/2012	0.3	0.2	33
1/7/2013	0.3	0.3	0
2/4/2013	0.3	0.3	0
3/4/2013	0.3	0.3	0
4/8/2013	0.3	0.3	0
5/6/2013	0.3	0.3	0
8/5/2013	0.3	0.3	0
9/9/2013	0.2	0.3	-50
10/7/2013	0.3	0.2	33
11/4/2013	0.3	0.3	0
1/6/2014	0.3	0.05	83
3/3/2014	0.2	0.2	0
4/7/2014	0.3	0.3	0
9/9/2014	0.3	0.3	0
9/10/2014	0.3	0.3	0
9/11/2014	0.2	0.3	-50
9/12/2014	0.2	0.3	-50
9/13/2014	0.2	0.3	-50
9/15/2014	0.3	0.3	0
9/16/2014	0.3	0.3	0
9/17/2014	0.2	0.3	-50
9/18/2014	0.3	0.3	0
MRE	0.27	0.27	-2

Cadmium			
Date collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/6/2009	0.005	0.000125	NC
1/5/2010	0.005	0.000125	NC
4/6/2010	0.005	0.000125	NC
7/6/2010	0.005	0.000125	NC
1/4/2011	0.005	0.000125	NC
4/3/2011	0.005	0.000125	NC
1/5/2012	0.005	0.000125	NC
4/5/2012	0.005	0.000125	NC
10/8/2012	0.005	0.000125	NC
1/7/2013	0.005	0.000125	NC
4/8/2013	0.005	0.000125	NC
10/7/2013	0.005	0.000125	NC
1/6/2014	0.005	0.000125	NC
4/7/2014	0.005	0.000125	NC
9/9/2014	0.005	0.000125	NC
9/10/2014	0.005	0.000125	NC
9/11/2014	0.005	0.000125	NC
9/12/2014	0.005	0.000125	NC
9/13/2014	0.005	0.000125	NC
9/15/2014	0.005	0.000125	NC
9/16/2014	0.005	0.000125	NC
9/17/2014	0.005	0.000125	NC
9/18/2014	0.005	0.000125	NC
MRE	NC	NC	NC

Chromium			
Date collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/6/2009	0.005	0.0010	80
1/5/2010	0.005	0.0016	68
4/6/2010	0.005	0.0012	76
7/6/2010	0.005	0.0012	76
1/4/2011	0.005	0.0006	88
4/3/2011	0.005	0.0008	84
1/5/2012	0.005	0.0010	80
4/5/2012	0.005	0.0008	84
10/8/2012	0.005	0.0009	82
1/7/2013	0.005	0.0011	78
4/8/2013	0.005	0.0009	82
10/7/2013	0.005	0.0009	82
1/6/2014	0.005	0.0009	82
4/7/2014	0.005	0.0008	84
9/9/2014	0.005	0.0009	82
9/10/2014	0.005	0.0010	80
9/11/2014	0.005	0.0008	84
9/12/2014	0.005	0.0008	84
9/13/2014	0.005	0.0008	84

Table E-3
RP-5 Removal Efficiencies
Local Limits Study

Chromium (cont.)			
Date collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/15/2014	0.005	0.0007	86
9/16/2014	0.005	0.0008	84
9/17/2014	0.005	0.0007	86
9/18/2014	0.005	0.0007	86
MRE	0.005	0.0009	82

Copper			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/6/2009	0.06	0.0057	91
1/5/2010	0.08	0.0046	94
4/6/2010	0.05	0.0048	90
7/6/2010	0.05	0.004	92
1/4/2011	0.05	0.008	84
4/3/2011	0.09	0.0051	94
1/5/2012	0.04	0.0048	88
4/5/2012	0.07	0.0068	90
10/8/2012	0.05	0.007	86
1/7/2013	0.07	0.0072	90
4/8/2013	0.06	0.0072	88
10/7/2013	0.05	0.0085	83
1/6/2014	0.06	0.0072	88
4/7/2014	0.05	0.0056	89
9/9/2014	0.05	0.0055	89
9/10/2014	0.07	0.0054	92
9/11/2014	0.07	0.0042	94
9/12/2014	0.08	0.0044	95
9/13/2014	0.06	0.0049	92
9/15/2014	0.06	0.0049	92
9/16/2014	0.06	0.005	92
9/17/2014	0.05	0.0051	90
9/18/2014	0.04	0.0052	87
MRE	0.06	0.0057	90

Iron			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/9/2014	0.25	0.042	83
9/10/2014	0.42	0.038	91
9/11/2014	0.4	0.039	90
9/12/2014	0.62	0.052	92
9/13/2014	0.34	0.054	84
9/15/2014	0.4	0.047	88
9/16/2014	0.35	0.04	89
9/17/2014	0.2	0.039	81
9/18/2014	0.18	0.036	80
MRE	0.35	0.04	88

Lead			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/6/2009	0.01	0.00025	NC
4/6/2010	0.01	0.00025	NC
7/6/2010	0.01	0.00025	NC
1/4/2011	0.01	0.00025	NC
4/3/2011	0.01	0.00025	NC
1/5/2012	0.01	0.00025	NC
4/5/2012	0.01	0.00025	NC
10/8/2012	0.01	0.00025	NC
1/7/2013	0.01	0.00025	NC
4/8/2013	0.01	0.00025	NC
10/7/2013	0.01	0.00025	NC
1/6/2014	0.01	0.00025	NC
4/7/2014	0.01	0.00025	NC
9/9/2014	0.01	0.00025	NC
9/10/2014	0.01	0.00025	NC
9/11/2014	0.01	0.00025	NC
9/12/2014	0.01	0.00025	NC
9/13/2014	0.01	0.00025	NC
9/15/2014	0.01	0.00025	NC
9/16/2014	0.01	0.00025	NC
9/17/2014	0.01	0.00025	NC
9/18/2014	0.01	0.00025	NC
MRE	NC	NC	NC

Manganese			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/9/2014	0.02	0.024	-20
9/10/2014	0.02	0.033	-65
9/11/2014	0.03	0.032	-7
9/12/2014	0.04	0.029	28
9/13/2014	0.02	0.028	-40
9/15/2014	0.03	0.036	-20
9/16/2014	0.02	0.03	-50
9/17/2014	0.01	0.031	-210
9/18/2014	0.02	0.028	-40
MRE	0.02	0.030	-29

Mercury			
Date collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/6/2009	0.00025	0.000025	90
1/5/2010	0.00025	0.000025	90
4/6/2010	0.00025	0.000025	90
7/6/2010	0.00025	0.000025	90
1/4/2011	0.00025	0.000025	90
4/3/2011	0.00025	0.000025	90
1/5/2012	0.0005	0.000025	95

Mercury (cont.)			
Date collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
4/5/2012	0.00025	0.000025	90
10/8/2012	0.00025	0.000025	90
1/7/2013	0.00025	0.000025	90
4/8/2013	0.00025	0.000025	90
10/7/2013	0.00025	0.000025	90
1/6/2014	0.00025	0.000025	90
4/7/2014	0.00025	0.000025	90
9/9/2014	0.00025	0.000025	90
9/10/2014	0.00025	0.000025	90
9/11/2014	0.00025	0.000025	90
9/12/2014	0.00025	0.000025	90
9/13/2014	0.00025	0.000025	90
9/15/2014	0.00025	0.000025	90
9/16/2014	0.00025	0.000025	90
9/17/2014	0.00025	0.000025	90
9/18/2014	0.00025	0.000025	90
MRE	0.00026	0.000025	90

Molybdenum			
Date collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/9/2014	0.005	0.005	0
9/10/2014	0.005	0.004	20
9/11/2014	0.005	0.004	20
9/12/2014	0.005	0.003	40
9/13/2014	0.005	0.004	20
9/15/2014	0.005	0.003	40
9/16/2014	0.005	0.004	20
9/17/2014	0.005	0.004	20
9/18/2014	0.005	0.004	20
MRE	0.005	0.0039	22

Nickel			
Date collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/6/2009	0.005	0.003	40
1/5/2010	0.005	0.003	40
4/6/2010	0.005	0.003	40
7/6/2010	0.005	0.002	60
1/4/2011	0.005	0.003	40
4/3/2011	0.005	0.005	0
1/5/2012	0.005	0.003	40
4/5/2012	0.005	0.003	40
10/8/2012	0.005	0.003	40
1/7/2013	0.005	0.003	40
4/8/2013	0.005	0.003	40
10/7/2013	0.005	0.003	40
1/6/2014	0.005	0.002	60

Table E-3
RP-5 Removal Efficiencies
Local Limits Study

Nickel (cont.)			
Date collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
4/7/2014	0.005	0.003	40
9/9/2014	0.005	0.003	40
9/10/2014	0.005	0.003	40
9/11/2014	0.005	0.002	60
9/12/2014	0.005	0.003	40
9/13/2014	0.005	0.003	40
9/15/2014	0.005	0.003	40
9/16/2014	0.005	0.003	40
9/17/2014	0.005	0.003	40
9/18/2014	0.005	0.003	40
MRE	0.005	0.003	41

Selenium			
Date collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/6/2009	0.01	0.001	NC
1/5/2010	0.01	0.001	NC
4/6/2010	0.01	0.001	NC
7/6/2010	0.01	0.001	NC
1/4/2011	0.01	0.001	NC
4/3/2011	0.01	0.001	NC
1/5/2012	0.01	0.001	NC
4/5/2012	0.01	0.001	NC
10/8/2012	0.01	0.001	NC
1/7/2013	0.01	0.001	NC
4/8/2013	0.01	0.001	NC
10/7/2013	0.01	0.001	NC
1/6/2014	0.01	0.001	NC
4/7/2014	0.01	0.001	NC
9/9/2014	0.01	0.001	NC
9/10/2014	0.01	0.001	NC
9/11/2014	0.01	0.001	NC
9/12/2014	0.01	0.001	NC
9/13/2014	0.01	0.001	NC
9/15/2014	0.01	0.001	NC
9/16/2014	0.01	0.001	NC
9/17/2014	0.01	0.001	NC
9/18/2014	0.01	0.001	NC
MRE	NC	NC	NC

Silver			
Date collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/6/2009	0.005	0.000125	NC
1/5/2010	0.005	0.000125	NC
4/6/2010	0.005	0.000125	NC
7/6/2010	0.005	0.000125	NC

Silver (cont.)			
Date collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/4/2011	0.005	0.000125	NC
4/3/2011	0.005	0.000125	NC
1/5/2012	0.005	0.000125	NC
4/5/2012	0.005	0.000125	NC
10/8/2012	0.005	0.000125	NC
1/7/2013	0.005	0.000125	NC
4/8/2013	0.005	0.000125	NC
10/7/2013	0.005	0.000125	NC
1/6/2014	0.005	0.000125	NC
4/7/2014	0.005	0.000125	NC
9/9/2014	0.005	0.000125	NC
9/10/2014	0.005	0.000125	NC
9/11/2014	0.005	0.000125	NC
9/12/2014	0.005	0.000125	NC
9/13/2014	0.005	0.000125	NC
9/15/2014	0.005	0.000125	NC
9/16/2014	0.005	0.000125	NC
9/17/2014	0.005	0.000125	NC
9/18/2014	0.005	0.000125	NC
MRE	NC	NC	NC

Sodium			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	100	97	3
10/6/2009	112	114	-2
11/3/2009	78	99	-27
12/1/2009	76	102	-34
1/5/2010	81	97	-20
2/2/2010	85	104	-22
3/2/2010	80	96	-20
4/6/2010	84	101	-20
5/4/2010	91	98	-8
6/1/2010	85	100	-18
7/6/2010	85	102	-20
8/3/2010	84	108	-29
11/2/2010	80	98	-23
12/7/2010	86	111	-29
1/4/2011	85	99	-16
2/8/2011	86	101	-17
3/6/2011	82	103	-26
4/3/2011	90	98	-9
5/4/2011	79	91	-15
6/8/2011	77	90	-17
11/3/2011	79	93	-18
12/8/2011	82	91	-11
1/5/2012	153	111	27
2/2/2012	73	89	-22

Sodium (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
4/5/2012	82	90	-10
5/3/2012	82	101	-23
10/8/2012	86	110	-28
11/5/2012	90	103	-14
12/3/2012	84	92	-10
1/7/2013	78	97	-24
2/4/2013	81	103	-27
3/4/2013	87	99	-14
4/8/2013	87	111	-28
5/6/2013	95	109	-15
8/5/2013	91	117	-29
9/9/2013	96	110	-15
10/7/2013	81	107	-32
11/4/2013	90	111	-23
1/6/2014	88	27	69
3/3/2014	97	98	-1
4/7/2014	92	109	-18
9/9/2014	90	100	-11
9/10/2014	83	100	-20
9/11/2014	83	101	-22
9/12/2014	83	102	-23
9/13/2014	90	100	-11
9/15/2014	80	104	-30
9/16/2014	82	103	-26
9/17/2014	83	103	-24
9/18/2014	81	103	-27
MRE	87	100	-15

Zinc			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/6/2009	0.09	0.027	70
1/5/2010	0.22	0.02	91
4/6/2010	0.11	0.031	72
7/6/2010	0.11	0.029	74
1/4/2011	0.07	0.031	56
4/3/2011	0.18	0.029	84
1/5/2012	0.09	0.041	54
4/5/2012	0.18	0.036	80
10/8/2012	0.09	0.046	49
1/7/2013	0.15	0.054	64
4/8/2013	0.14	0.058	59
10/7/2013	0.12	0.046	62
1/6/2014	0.17	0.038	78
4/7/2014	0.14	0.031	78
9/9/2014	0.12	0.023	81
9/10/2014	0.18	0.024	87
9/11/2014	0.15	0.022	85

Table E-3
RP-5 Removal Efficiencies
Local Limits Study

Zinc (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/12/2014	0.20	0.024	88
9/13/2014	0.14	0.025	82
9/15/2014	0.15	0.025	83
9/16/2014	0.16	0.022	86
9/17/2014	0.08	0.023	71
9/18/2014	0.08	0.023	71
MRE	0.14	0.032	77

Chloride			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	161	135	16
10/6/2009	176	148	16
11/3/2009	100	134	-34
12/1/2009	120	153	-28
1/5/2010	126	151	-20
2/2/2010	108	146	-35
3/2/2010	121	141	-17
4/6/2010	100	116	-16
5/4/2010	145	119	18
6/1/2010	100	127	-27
7/6/2010	109	134	-23
8/3/2010	105	138	-31
11/2/2010	112	148	-32
12/7/2010	121	151	-25
1/4/2011	127	151	-19
2/8/2011	102	120	-18
3/6/2011	101	124	-23
4/3/2011	119	138	-16
5/4/2011	95	121	-27
6/8/2011	103	139	-35
11/3/2011	105	120	-14
12/8/2011	101	129	-28
1/5/2012	218	162	26
2/2/2012	103	126	-22
4/5/2012	114	144	-26
5/3/2012	119	138	-16
8/6/2012	97	134	-38
10/8/2012	109	142	-30
11/5/2012	124	142	-15
12/3/2012	123	135	-10
1/7/2013	114	134	-18
2/4/2013	105	133	-27
3/4/2013	106	124	-17
4/8/2013	112	136	-21
5/6/2013	110	132	-20
8/5/2013	132	142	-8
9/9/2013	153	142	7

Chloride (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/7/2013	114	147	-29
11/4/2013	111	141	-27
12/9/2013	119	142	-19
1/6/2014	107	125	-17
3/3/2014	112	123	-10
4/7/2014	116	154	-33
9/9/2014	130	151	-16
9/10/2014	114	154	-35
9/11/2014	113	152	-35
9/12/2014	110	151	-37
9/13/2014	118	148	-25
9/15/2014	107	151	-41
9/16/2014	109	154	-41
9/17/2014	105	147	-40
9/18/2014	107	157	-47
MRE	117	139	-19

Cyanide (aquatic free)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	0.001	0.001	0
10/6/2009	0.001	0.001	0
11/3/2009	0.001	0.001	0
12/1/2009	0.001	0.001	0
1/5/2010	0.001	0.003	-200
2/16/2010	0.003	0.004	-33
3/2/2010	0.001	0.001	0
4/6/2010	0.001	0.003	-200
5/4/2010	0.001	0.001	0
6/1/2010	0.001	0.002	-100
7/6/2010	0.003	0.002	33
8/3/2010	0.001	0.001	0
11/2/2010	0.001	0.001	0
12/7/2010	0.001	0.001	0
1/4/2011	0.001	0.001	0
2/10/2011	0.003	0.003	0
3/8/2011	0.001	0.001	0
4/5/2011	0.004	0.001	75
5/3/2011	0.004	0.003	25
6/7/2011	0.001	0.001	0
10/18/2011	0.001	0.001	0
11/1/2011	0.001	0.001	0
12/13/2011	0.001	0.001	0
1/10/2012	0.001	0.001	0
2/7/2012	0.001	0.001	0
3/6/2012	0.001	0.001	0
4/17/2012	0.001	0.001	0
5/8/2012	0.001	0.001	0

Cyanide (aquatic free) (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
7/10/2012	0.002	0.001	50
8/2/2012	0.003	0.001	67
10/2/2012	0.001	0.001	0
11/6/2012	0.004	0.001	75
12/4/2012	0.001	0.001	0
1/8/2013	0.001	0.001	0
2/5/2013	0.001	0.001	0
3/5/2013	0.001	0.001	0
4/2/2013	0.001	0.001	0
5/7/2013	0.001	0.001	0
6/4/2013	0.001	0.001	0
8/6/2013	0.001	0.001	0
9/3/2013	0.001	0.001	0
10/1/2013	0.001	0.001	0
11/5/2013	0.001	0.001	0
12/3/2013	0.001	0.001	0
1/14/2014	0.001	0.001	0
2/11/2014	0.001	0.001	0
3/25/2014	0.001	0.001	0
4/22/2014	0.001	0.001	0
9/9/2014	0.001	0.001	0
9/10/2014	0.001	0.001	0
9/11/2014	0.001	0.001	0
9/12/2014	0.001	0.001	0
9/13/2014	0.001	0.001	0
9/15/2014	0.002	0.001	50
9/16/2014	0.001	0.001	0
9/17/2014	0.001	0.001	0
9/18/2014	0.001	0.001	0
MRE	0.001	0.001	8

Cyanide			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/9/2014	0.0025	0.0025	0
9/10/2014	0.016	0.0025	84
9/11/2014	0.009	0.0025	72
9/12/2014	0.014	0.0025	82
9/13/2014	0.016	0.006	63
9/15/2014	0.010	0.0025	75
9/16/2014	0.007	0.0025	64
9/17/2014	0.0025	0.0025	0
9/18/2014	0.005	0.0025	50
MRE	0.0091	0.0029	68

Table E-3
RP-5 Removal Efficiencies
Local Limits Study

Fluoride			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	0.2	0.2	0
10/6/2009	0.2	0.1	50
11/3/2009	0.2	0.05	75
12/1/2009	0.2	0.1	50
1/5/2010	0.3	0.1	67
2/2/2010	0.2	0.1	50
3/2/2010	0.2	0.05	75
4/6/2010	0.2	0.9	-350
5/4/2010	0.2	0.05	75
6/1/2010	0.2	0.2	0
7/6/2010	0.2	0.05	75
8/3/2010	0.2	0.2	0
11/2/2010	0.2	0.1	50
12/7/2010	0.2	0.2	0
1/4/2011	0.2	0.1	50
2/8/2011	0.2	0.05	75
3/6/2011	0.2	0.1	50
4/3/2011	0.2	0.1	50
5/4/2011	0.2	0.2	0
6/8/2011	0.3	0.2	33
11/3/2011	0.2	0.1	50
12/8/2011	0.2	0.1	50
1/5/2012	0.4	0.2	50
2/2/2012	0.2	0.2	0
4/5/2012	0.2	0.2	0
5/3/2012	0.2	0.2	0
10/8/2012	0.2	0.2	0
11/5/2012	0.2	0.05	75
12/3/2012	0.2	0.2	0
1/7/2013	0.2	0.2	0
2/4/2013	0.3	0.2	33
3/4/2013	0.2	0.2	0
4/8/2013	0.2	0.2	0
5/6/2013	0.2	0.2	0
8/5/2013	0.2	0.1	50
9/9/2013	0.2	0.2	0
10/7/2013	0.2	0.2	0
11/4/2013	0.2	0.2	0
12/9/2013	0.2	0.3	-50
1/6/2014	0.2	0.1	50
4/7/2014	0.3	0.1	67
MRE	0.2	0.2	23

Hardness			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	222	171	23
10/6/2009	243	201	17
11/3/2009	191	186	3
12/1/2009	145	185	-28
1/5/2010	202	176	13
2/2/2010	210	201	4
3/2/2010	220	210	5
4/6/2010	194	185	5
5/4/2010	197	178	10
6/1/2010	189	178	6
7/6/2010	183	183	0
8/3/2010	180	184	-2
11/2/2010	202	177	12
12/7/2010	208	187	10
1/4/2011	221	209	5
2/8/2011	183	179	2
3/6/2011	202	201	0
4/3/2011	239	191	20
5/4/2011	212	179	16
6/8/2011	209	186	11
11/3/2011	191	193	-1
12/8/2011	219	196	11
1/5/2012	197	186	6
2/2/2012	198	186	6
4/5/2012	224	188	16
5/3/2012	231	225	3
10/8/2012	179	193	-8
11/5/2012	197	185	6
12/3/2012	198	183	8
1/7/2013	200	188	6
2/4/2013	213	201	6
3/4/2013	195	196	-1
4/8/2013	195	201	-3
5/6/2013	208	186	11
8/5/2013	235	199	15
9/9/2013	209	201	4
10/7/2013	178	194	-9
11/4/2013	205	196	4
1/6/2014	200	131	35
3/3/2014	202	179	11
4/7/2014	202	191	5
MRE	203	189	7

Sulfate			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	36	52	-44
10/6/2009	39	47	-21
10/20/2009	36	42	-17
11/3/2009	37	47	-27
12/1/2009	38	51	-34
1/5/2010	40	51	-28
2/2/2010	40	61	-53
3/2/2010	49	60	-22
4/6/2010	40	45	-13
5/4/2010	55	52	5
6/1/2010	42	53	-26
7/6/2010	43	55	-28
8/3/2010	38	56	-47
11/2/2010	34	47	-38
12/7/2010	36	53	-47
1/4/2011	48	62	-29
2/8/2011	40	54	-35
3/6/2011	38	56	-47
4/3/2011	56	64	-14
5/4/2011	44	57	-30
6/8/2011	41	57	-39
11/3/2011	41	48	-17
12/8/2011	41	52	-27
1/5/2012	48	59	-23
2/2/2012	44	54	-23
4/5/2012	52	67	-29
5/3/2012	55	66	-20
10/8/2012	32	55	-72
11/5/2012	34	52	-53
12/3/2012	32	48	-50
1/7/2013	114	52	54
2/4/2013	33	55	-67
3/4/2013	44	56	-27
4/8/2013	45	63	-40
5/6/2013	48	63	-31
8/5/2013	42	64	-52
9/9/2013	41	58	-41
10/7/2013	37	60	-62
11/4/2013	46	58	-26
12/9/2013	49	52	-6
1/6/2014	43	57	-33
3/3/2014	53	60	-13
4/7/2014	44	63	-43
9/9/2014	43	45	-5
9/10/2014	42	43	-2

Table E-3
RP-5 Removal Efficiencies
Local Limits Study

Sulfate			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/11/2014	43	43	0
9/12/2014	45	42	7
9/13/2014	38	43	-13
9/15/2014	40	40	0
9/16/2014	41	42	-2
9/17/2014	40	40	0
9/18/2014	42	42	0
MRE	44	53	-22

TDS			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/6/2009	489	508	-4
1/13/2009	508	521	-3
1/20/2009	452	484	-7
1/27/2009	480	490	-2
2/3/2009	468	492	-5
2/10/2009	506	474	6
2/17/2009	588	504	14
2/24/2009	494	494	0
3/3/2009	482	502	-4
3/10/2009	472	488	-3
3/17/2009	552	546	1
3/24/2009	542	472	13
3/31/2009	518	508	2
4/7/2009	492	518	-5
4/14/2009	534	510	4
4/26/2009	498	500	0
4/28/2009	500	484	3
5/5/2009	508	498	2
5/12/2009	510	530	-4
5/19/2009	534	496	7
5/26/2009	511	494	3
6/2/2009	527	499	5
6/9/2009	528	522	1
6/16/2009	506	508	0
6/23/2009	514	494	4
6/30/2009	496	498	0
7/14/2009	479	500	-4
7/21/2009	473	510	-8
7/28/2009	500	511	-2
8/4/2009	483	512	-6
8/11/2009	490	510	-4
8/18/2009	513	506	1
8/25/2009	507	509	0
9/1/2009	575	515	10

TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/8/2009	534	520	3
9/15/2009	524	486	7
9/22/2009	500	522	-4
9/29/2009	560	522	7
10/6/2009	606	542	11
10/13/2009	524	520	1
10/20/2009	510	526	-3
10/27/2009	516	528	-2
11/3/2009	466	504	-8
11/10/2009	466	496	-6
11/17/2009	466	500	-7
11/24/2009	450	508	-13
12/1/2009	482	530	-10
12/8/2009	496	510	-3
12/15/2009	482	492	-2
12/22/2009	508	518	-2
12/29/2009	468	502	-7
1/5/2010	502	518	-3
1/12/2010	500	504	-1
1/19/2010	472	498	-6
1/26/2010	518	536	-3
2/2/2010	530	538	-2
2/9/2010	514	544	-6
2/16/2010	536	566	-6
2/23/2010	516	552	-7
3/2/2010	532	536	-1
3/9/2010	504	566	-12
3/16/2010	502	566	-13
3/23/2010	494	538	-9
3/30/2010	492	534	-9
4/6/2010	506	528	-4
4/13/2010	502	522	-4
4/20/2010	484	524	-8
4/27/2010	504	502	0
5/4/2010	532	510	4
5/11/2010	524	514	2
5/18/2010	529	525	1
5/25/2010	504	521	-3
6/1/2010	532	525	1
6/8/2010	520	544	-5
6/22/2010	524	548	-5
6/29/2010	500	508	-2
7/6/2010	488	540	-11
7/13/2010	464	516	-11
7/20/2010	516	522	-1
7/27/2010	492	516	-5

TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
8/3/2010	492	528	-7
8/10/2010	496	528	-6
8/17/2010	496	512	-3
8/24/2010	496	510	-3
8/31/2010	462	504	-9
9/7/2010	512	524	-2
9/14/2010	480	510	-6
9/21/2010	492	502	-2
9/28/2010	488	506	-4
10/5/2010	494	516	-4
10/12/2010	480	520	-8
10/19/2010	578	508	12
10/26/2010	510	498	2
11/2/2010	490	512	-4
11/9/2010	452	516	-14
11/16/2010	478	524	-10
11/23/2010	484	506	-5
12/7/2010	464	496	-7
12/14/2010	488	546	-12
12/21/2010	478	500	-5
12/28/2010	644	554	14
1/4/2011	520	542	-4
1/11/2011	442	540	-22
1/18/2011	530	508	4
1/25/2011	500	508	-2
2/1/2011	444	500	-13
2/8/2011	492	502	-2
2/15/2011	466	494	-6
2/23/2011	460	504	-10
3/2/2011	472	506	-7
3/9/2011	464	530	-14
3/16/2011	480	512	-7
3/23/2011	492	516	-5
3/30/2011	528	536	-2
4/6/2011	500	532	-6
4/13/2011	500	514	-3
4/20/2011	486	506	-4
4/27/2011	484	514	-6
5/4/2011	510	524	-3
5/11/2011	468	520	-11
5/18/2011	550	522	5
5/25/2011	510	532	-4
6/1/2011	566	540	5
6/8/2011	538	550	-2
6/15/2011	478	530	-11
6/22/2011	484	526	-9

Table E-3
RP-5 Removal Efficiencies
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TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
6/29/2011	456	510	-12
7/6/2011	584	526	10
7/13/2011	480	530	-10
7/20/2011	598	524	12
7/27/2011	442	500	-13
8/17/2011	428	512	-20
8/24/2011	452	506	-12
8/31/2011	464	488	-5
9/7/2011	438	498	-14
9/14/2011	466	512	-10
9/21/2011	480	484	-1
9/28/2011	504	496	2
10/6/2011	436	474	-9
10/13/2011	507	504	1
10/20/2011	488	494	-1
10/27/2011	460	498	-8
11/3/2011	290	498	-72
11/10/2011	502	518	-3
11/17/2011	494	524	-6
11/21/2011	470	502	-7
12/1/2011	480	502	-5
12/8/2011	518	514	1
12/15/2011	490	488	0
12/23/2011	504	506	0
12/29/2011	554	500	10
1/5/2012	690	558	19
1/19/2012	470	516	-10
1/26/2012	488	486	0
2/2/2012	490	497	-1
2/9/2012	515	533	-3
2/16/2012	527	534	-1
2/23/2012	492	530	-8
3/1/2012	500	526	-5
3/15/2012	519	542	-4
3/22/2012	539	532	1
3/29/2012	543	534	2
4/5/2012	524	532	-2
4/12/2012	500	532	-6
4/26/2012	518	526	-2
5/3/2012	538	548	-2
5/10/2012	512	542	-6
5/17/2012	488	536	-10
5/24/2012	504	508	-1
5/31/2012	490	516	-5
6/7/2012	498	522	-5
6/14/2012	486	502	-3

TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
6/21/2012	498	530	-6
6/28/2012	474	546	-15
7/6/2012	498	526	-6
7/12/2012	506	534	-6
7/26/2012	554	510	8
7/30/2012	498	500	0
8/6/2012	520	534	-3
8/13/2012	526	496	6
8/20/2012	484	504	-4
8/27/2012	478	504	-5
9/4/2012	518	524	-1
9/10/2012	540	516	4
9/17/2012	468	484	-3
9/24/2012	518	524	-1
10/8/2012	508	540	-6
10/15/2012	502	522	-4
10/22/2012	534	526	1
10/29/2012	542	524	3
11/5/2012	520	530	-2
11/12/2012	484	516	-7
11/19/2012	504	500	1
11/26/2012	470	506	-8
12/3/2012	512	514	0
12/10/2012	526	522	1
12/24/2012	534	512	4
12/31/2012	494	492	0
1/7/2013	536	524	2
1/14/2013	478	520	-9
1/21/2013	500	510	-2
1/28/2013	500	514	-3
2/4/2013	500	526	-5
2/11/2013	498	524	-5
2/21/2013	490	516	-5
2/25/2013	476	524	-10
3/4/2013	480	524	-9
3/11/2013	508	532	-5
3/19/2013	496	524	-6
3/25/2013	490	534	-9
4/1/2013	518	528	-2
4/8/2013	506	510	-1
4/15/2013	498	546	-10
4/22/2013	502	536	-7
4/29/2013	504	550	-9
5/6/2013	530	530	0
5/13/2013	510	544	-7
5/20/2013	522	538	-3

TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
5/30/2013	500	546	-9
6/3/2013	846	518	39
6/10/2013	532	530	0
6/17/2013	508	566	-11
6/24/2013	488	498	-2
7/1/2013	488	500	-2
7/8/2013	496	526	-6
7/15/2013	510	518	-2
7/22/2013	514	566	-10
7/29/2013	504	544	-8
8/5/2013	524	560	-7
8/12/2013	496	558	-13
8/19/2013	504	552	-10
8/26/2013	620	624	-1
9/5/2013	492	534	-9
9/16/2013	456	532	-17
9/23/2013	608	556	9
9/30/2013	566	572	-1
10/7/2013	486	540	-11
10/14/2013	510	640	-25
10/21/2013	498	542	-9
10/28/2013	516	556	-8
11/4/2013	532	544	-2
11/11/2013	496	530	-7
11/18/2013	498	542	-9
11/25/2013	512	546	-7
12/2/2013	510	542	-6
12/9/2013	498	554	-11
12/16/2013	492	528	-7
12/23/2013	452	500	-11
12/30/2013	530	524	1
1/6/2014	500	532	-6
1/13/2014	530	526	1
1/20/2014	460	514	-12
1/27/2014	598	522	13
2/5/2014	496	512	-3
2/10/2014	474	496	-5
2/24/2014	512	508	1
3/3/2014	490	498	-2
3/10/2014	520	534	-3
3/17/2014	504	530	-5
3/31/2014	502	520	-4
4/7/2014	542	540	0
4/14/2014	464	550	-19
4/21/2014	502	544	-8
4/28/2014	500	530	-6

Table E-3
RP-5 Removal Efficiencies
Local Limits Study

TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/9/2014	566	560	1
9/10/2014	476	534	-12
9/11/2014	486	520	-7
9/13/2014	492	546	-11
9/15/2014	498	524	-5
9/16/2014	486	530	-9
9/17/2014	474	548	-16
9/18/2014	470	524	-11
MRE	504	521	-3

Toluene			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/21/2009	0.0025	0.0005	80
1/5/2010	0.0025	0.0005	80
4/6/2010	0.0025	0.0005	80
7/6/2010	0.008	0.0005	94
10/12/2010	0.0025	0.0005	80
1/4/2011	0.0025	0.0005	80
4/5/2011	0.0025	0.0005	80
1/24/2012	0.0025	0.0005	80
4/2/2013	0.005	0.0005	90
9/15/2014	0.005	0.0005	90
9/16/2014	0.005	0.0005	90
9/18/2014	0.005	0.0005	90
MRE	0.004	0.0005	87

bis(2-ethylhexyl)phthalate			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/5/2009	0.013	0.001	92
1/4/2010	0.011	0.001	91
7/5/2010	0.005	0.001	80
4/3/2011	0.011	0.001	91
1/24/2012	0.005	0.001	80
4/5/2012	0.013	0.001	92
10/2/2012	0.005	0.001	80
1/8/2013	0.005	0.001	80
4/2/2013	0.011	0.001	91
MRE	0.0088	0.0010	89

Notes:
mg/L = milligrams per liter
RE = removal efficiency
MRE = mean removal efficiency
NC = not calculated
% = percent
Blue shaded cells represent non-detect results that were substituted with 1/2 the reporting limit

Table E-4
CCWRF Removal Efficiencies
Local Limits Study

Aluminum			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE (%)
9/9/2014	0.64	0.033	95
9/10/2014	0.75	0.036	95
9/11/2014	0.73	0.039	95
9/12/2014	0.81	0.034	96
9/13/2014	0.84	0.033	96
9/15/2014	0.77	0.036	95
9/16/2014	0.78	0.044	94
9/17/2014	0.73	0.037	95
9/18/2014	0.71	0.043	94
MRE	0.75	0.037	95

Arsenic			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/5/2010	0.005	0.001	NC
4/6/2010	0.005	0.001	NC
7/6/2010	0.005	0.001	NC
10/5/2010	0.005	0.001	NC
1/4/2011	0.005	0.001	NC
4/3/2011	0.005	0.001	NC
10/3/2011	0.005	0.001	NC
1/5/2012	0.005	0.001	NC
4/5/2012	0.005	0.001	NC
7/2/2012	0.005	0.001	NC
10/8/2012	0.005	0.001	NC
4/2/2013	0.005	0.001	NC
7/8/2013	0.005	0.001	NC
1/6/2014	0.005	0.001	NC
9/9/2014	0.005	0.001	NC
9/10/2014	0.005	0.001	NC
9/11/2014	0.005	0.001	NC
9/12/2014	0.005	0.001	NC
9/13/2014	0.005	0.001	NC
9/15/2014	0.005	0.001	NC
9/16/2014	0.005	0.001	NC
9/17/2014	0.005	0.001	NC
9/18/2014	0.005	0.001	NC
MRE	NC	NC	NC

Boron			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	0.3	0.3	0
11/3/2009	0.3	0.3	0
12/1/2009	0.3	0.3	0
1/5/2010	0.3	0.3	0
2/2/2010	0.3	0.3	0
3/2/2010	0.3	0.3	0
5/4/2010	0.3	0.3	0
6/1/2010	0.3	0.3	0
7/6/2010	0.3	0.3	0
8/3/2010	0.3	0.3	0
9/7/2010	0.3	0.3	0
10/5/2010	0.2	0.3	-50
11/2/2010	0.3	0.3	0
12/7/2010	0.3	0.3	0
1/4/2011	0.3	0.3	0
2/8/2011	0.2	0.3	-50
3/6/2011	0.3	0.3	0
4/3/2011	0.2	0.2	0
5/4/2011	0.2	0.2	0
6/8/2011	0.2	0.3	-50
8/3/2011	0.3	0.3	0
9/7/2011	0.3	0.3	0
10/3/2011	0.3	0.3	0
11/3/2011	0.2	0.3	-50
12/8/2011	0.2	0.2	0
12/12/2011	0.2	0.2	0
1/5/2012	0.2	0.2	0
2/2/2012	0.2	0.2	0
3/8/2012	0.2	0.3	-50
4/5/2012	0.2	0.2	0
5/3/2012	0.3	0.3	0
6/7/2012	0.3	0.3	0
7/2/2012	0.3	0.3	0
8/6/2012	0.3	0.3	0
9/10/2012	0.3	0.2	33
10/8/2012	0.3	0.3	0
11/5/2012	0.3	0.2	33
12/3/2012	0.3	0.2	33
2/4/2013	0.3	0.3	0
3/4/2013	0.3	0.2	33
4/2/2013	0.4	0.3	25
5/6/2013	0.4	0.3	25
6/3/2013	0.3	0.3	0

Boron (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
7/8/2013	0.3	0.3	0
11/4/2013	0.3	0.2	33
12/9/2013	0.3	0.2	33
1/6/2014	0.3	0.3	0
2/5/2014	0.3	0.2	33
3/3/2014	0.3	0.2	33
9/9/2014	0.4	0.3	25
9/10/2014	0.4	0.3	25
9/11/2014	0.3	0.3	0
9/12/2014	0.3	0.3	0
9/13/2014	0.3	0.3	0
9/15/2014	0.3	0.3	0
9/16/2014	0.3	0.3	0
9/17/2014	0.3	0.3	0
9/18/2014	0.4	0.3	25
MRE	0.29	0.27	5

Cadmium			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/5/2010	0.005	0.000125	NC
4/6/2010	0.005	0.000125	NC
7/6/2010	0.005	0.000125	NC
10/5/2010	0.005	0.000125	NC
1/4/2011	0.005	0.000125	NC
4/3/2011	0.005	0.000125	NC
10/3/2011	0.005	0.000125	NC
1/5/2012	0.005	0.000125	NC
4/5/2012	0.005	0.000125	NC
7/2/2012	0.005	0.000125	NC
10/8/2012	0.005	0.000125	NC
4/2/2013	0.005	0.000125	NC
7/8/2013	0.005	0.000125	NC
1/6/2014	0.005	0.000125	NC
9/9/2014	0.005	0.000125	NC
9/10/2014	0.005	0.000125	NC
9/11/2014	0.005	0.000125	NC
9/12/2014	0.005	0.000125	NC
9/13/2014	0.005	0.000125	NC
9/15/2014	0.005	0.000125	NC
9/16/2014	0.005	0.000125	NC
9/17/2014	0.005	0.000125	NC
9/18/2014	0.005	0.000125	NC
MRE	NC	NC	NC

Table E-4
CCWRF Removal Efficiencies
Local Limits Study

Chromium			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/5/2010	0.005	0.0012	76
4/6/2010	0.005	0.0013	74
7/6/2010	0.005	0.0013	74
10/5/2010	0.005	0.001	80
1/4/2011	0.005	0.0007	86
4/3/2011	0.005	0.0009	82
10/3/2011	0.005	0.0011	78
1/5/2012	0.005	0.0013	74
4/5/2012	0.005	0.0008	84
7/2/2012	0.005	0.0011	78
10/8/2012	0.005	0.0009	82
4/2/2013	0.005	0.0008	84
7/8/2013	0.005	0.0009	82
1/6/2014	0.005	0.0009	82
9/9/2014	0.005	0.0012	76
9/10/2014	0.005	0.0016	68
9/11/2014	0.005	0.0017	66
9/12/2014	0.005	0.0015	70
9/13/2014	0.005	0.0016	68
9/15/2014	0.005	0.0015	70
9/16/2014	0.005	0.0022	56
9/17/2014	0.005	0.0024	52
9/18/2014	0.005	0.0021	58
MRE	0.005	0.0013	74

Copper			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/5/2010	0.07	0.0064	91
4/6/2010	0.07	0.0049	93
7/6/2010	0.06	0.0055	91
10/5/2010	0.06	0.0051	92
1/4/2011	0.13	0.0054	96
4/3/2011	0.04	0.0067	83
10/3/2011	0.08	0.0058	93
1/5/2012	0.04	0.0091	77
4/5/2012	0.08	0.0062	92
7/2/2012	0.06	0.0056	91
10/8/2012	0.07	0.0057	92
4/2/2013	0.08	0.0065	92
7/8/2013	0.07	0.0064	91
1/6/2014	0.05	0.0061	88
9/9/2014	0.06	0.0087	86

Copper (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/10/2014	0.06	0.0124	79
9/11/2014	0.05	0.0143	71
9/12/2014	0.06	0.0125	79
9/13/2014	0.06	0.0128	79
9/15/2014	0.06	0.0124	79
9/16/2014	0.08	0.0141	82
9/17/2014	0.06	0.0126	79
9/18/2014	0.06	0.012	80
MRE	0.066	0.0086	87

Iron			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/9/2014	0.79	0.039	95
9/10/2014	0.82	0.042	95
9/11/2014	0.71	0.040	94
9/12/2014	0.67	0.037	94
9/13/2014	0.69	0.035	95
9/15/2014	0.67	0.040	94
9/16/2014	0.85	0.042	95
9/17/2014	0.73	0.040	95
9/18/2014	0.67	0.044	93
MRE	0.73	0.040	95

Lead			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/5/2010	0.01	0.00025	NC
4/6/2010	0.01	0.00025	NC
7/6/2010	0.01	0.00025	NC
10/5/2010	0.01	0.00025	NC
1/4/2011	0.01	0.00025	NC
4/3/2011	0.01	0.00025	NC
10/3/2011	0.01	0.00025	NC
1/5/2012	0.01	0.00025	NC
4/5/2012	0.01	0.00025	NC
7/2/2012	0.01	0.00025	NC
10/8/2012	0.01	0.00025	NC
4/2/2013	0.01	0.00025	NC
7/8/2013	0.01	0.00025	NC
1/6/2014	0.01	0.00025	NC
9/9/2014	0.01	0.00025	NC
9/10/2014	0.01	0.00025	NC

Lead (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/11/2014	0.01	0.00025	NC
9/12/2014	0.01	0.00025	NC
9/13/2014	0.01	0.00025	NC
9/15/2014	0.01	0.00025	NC
9/16/2014	0.01	0.00025	NC
9/17/2014	0.01	0.00025	NC
9/18/2014	0.01	0.00025	NC
MRE	NC	NC	NC

Manganese			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/3/2011	0.20	0.027	87
9/9/2014	0.04	0.002	95
9/10/2014	0.04	0.002	95
9/11/2014	0.03	0.002	93
9/12/2014	0.03	0.002	93
9/13/2014	0.03	0.001	97
9/15/2014	0.03	0.002	93
9/16/2014	0.03	0.002	93
9/17/2014	0.03	0.001	97
9/18/2014	0.04	0.001	97
MRE	0.05	0.004	92

Mercury			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/5/2010	0.00025	0.000025	90
4/6/2010	0.0006	0.000025	96
7/6/2010	0.00025	0.000025	90
10/5/2010	0.00025	0.000025	90
1/4/2011	0.00025	0.000025	90
4/3/2011	0.00025	0.000025	90
10/3/2011	0.00025	0.000025	90
1/5/2012	0.00025	0.000025	90
4/5/2012	0.00025	0.000025	90
7/2/2012	0.00025	0.000025	90
10/8/2012	0.00025	0.000025	90
4/2/2013	0.00025	0.000025	90
7/9/2013	0.00025	0.000025	90
1/6/2014	0.00025	0.000025	90
9/9/2014	0.0008	0.000025	97
9/10/2014	0.00025	0.000025	90

Table E-4
CCWRF Removal Efficiencies
Local Limits Study

Mercury (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/11/2014	0.00025	0.000025	90
9/12/2014	0.00025	0.000025	90
9/13/2014	0.00025	0.000025	90
9/15/2014	0.00025	0.000025	90
9/16/2014	0.00025	0.000025	90
9/17/2014	0.00025	0.000025	90
9/18/2014	0.00025	0.000025	90
MRE	0.00029	0.000025	91

Molybdenum			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/9/2014	0.03	0.050	-67
9/10/2014	0.05	0.044	12
9/11/2014	0.005	0.040	-700
9/12/2014	0.005	0.020	-300
9/13/2014	0.04	0.014	65
9/15/2014	0.08	0.040	50
9/16/2014	0.06	0.058	3
9/17/2014	0.05	0.060	-20
9/18/2014	0.04	0.052	-30
MRE	0.04	0.042	-5

Nickel			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/5/2010	0.005	0.003	40
4/6/2010	0.005	0.003	40
7/6/2010	0.005	0.002	60
10/5/2010	0.005	0.002	60
1/4/2011	0.005	0.002	60
4/3/2011	0.005	0.004	20
10/3/2011	0.005	0.004	20
1/5/2012	0.005	0.003	40
4/5/2012	0.005	0.003	40
7/2/2012	0.005	0.002	60
10/8/2012	0.005	0.007	-40
4/2/2013	0.005	0.003	40
7/8/2013	0.005	0.003	40
1/6/2014	0.005	0.002	60
9/9/2014	0.005	0.003	40
9/10/2014	0.005	0.003	40

Nickel (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/11/2014	0.005	0.003	40
9/12/2014	0.005	0.003	40
9/13/2014	0.005	0.003	40
9/15/2014	0.005	0.003	40
9/16/2014	0.005	0.003	40
9/17/2014	0.005	0.003	40
9/18/2014	0.005	0.003	40
MRE	0.005	0.003	39

Selenium			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/5/2010	0.01	0.001	NC
4/6/2010	0.01	0.001	NC
7/6/2010	0.01	0.001	NC
10/5/2010	0.01	0.001	NC
1/4/2011	0.01	0.001	NC
4/3/2011	0.01	0.001	NC
10/3/2011	0.01	0.001	NC
12/12/2011	0.01	0.001	NC
1/5/2012	0.01	0.001	NC
4/5/2012	0.01	0.001	NC
7/2/2012	0.01	0.001	NC
10/8/2012	0.01	0.001	NC
4/2/2013	0.01	0.001	NC
7/8/2013	0.01	0.001	NC
1/6/2014	0.01	0.001	NC
9/9/2014	0.01	0.001	NC
9/10/2014	0.01	0.001	NC
9/11/2014	0.01	0.001	NC
9/12/2014	0.01	0.001	NC
9/13/2014	0.01	0.001	NC
9/15/2014	0.01	0.001	NC
9/16/2014	0.01	0.001	NC
9/17/2014	0.01	0.001	NC
9/18/2014	0.01	0.001	NC
MRE	NC	NC	NC

Silver			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/5/2010	0.005	0.000125	NC
4/6/2010	0.005	0.000125	NC
7/6/2010	0.005	0.000125	NC
10/5/2010	0.005	0.000125	NC
1/4/2011	0.005	0.000125	NC
4/3/2011	0.005	0.000125	NC
10/3/2011	0.005	0.000125	NC
1/5/2012	0.005	0.000125	NC
4/5/2012	0.005	0.000125	NC
7/2/2012	0.005	0.000125	NC
10/8/2012	0.005	0.000125	NC
4/2/2013	0.005	0.000125	NC
7/8/2013	0.005	0.000125	NC
1/6/2014	0.005	0.000125	NC
9/9/2014	0.005	0.000125	NC
9/10/2014	0.005	0.000125	NC
9/11/2014	0.005	0.000125	NC
9/12/2014	0.005	0.000125	NC
9/13/2014	0.005	0.000125	NC
9/15/2014	0.005	0.000125	NC
9/16/2014	0.005	0.000125	NC
9/17/2014	0.005	0.000125	NC
9/18/2014	0.005	0.000125	NC
MRE	NC	NC	NC

Sodium			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	88	120	-36
11/3/2009	88	106	-20
12/1/2009	84	106	-26
1/5/2010	89	105	-18
2/2/2010	91	105	-15
3/2/2010	88	97	-10
4/6/2010	86	105	-22
5/4/2010	89	98	-10
6/1/2010	92	105	-14
7/6/2010	95	106	-12
8/3/2010	88	110	-25
9/7/2010	93	105	-13
10/5/2010	94	111	-18
11/2/2010	99	109	-10

Table E-4
CCWRF Removal Efficiencies
Local Limits Study

Sodium (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
12/7/2010	92	101	-10
1/4/2011	98	103	-5
2/8/2011	90	105	-17
3/6/2011	84	99	-18
4/3/2011	82	89	-9
5/4/2011	86	102	-19
6/8/2011	103	94	9
8/3/2011	83	97	-17
9/7/2011	89	106	-19
10/3/2011	90	96	-7
11/3/2011	82	101	-23
12/8/2011	83	87	-5
1/5/2012	80	90	-13
2/2/2012	81	96	-19
3/8/2012	88	104	-18
4/5/2012	83	93	-12
5/3/2012	93	115	-24
6/7/2012	91	109	-20
7/2/2012	86	104	-21
8/6/2012	84	115	-37
9/10/2012	93	111	-19
10/8/2012	91	114	-25
11/5/2012	99	111	-12
12/3/2012	84	104	-24
2/4/2013	89	112	-26
3/4/2013	92	111	-21
4/2/2013	103	107	-4
5/6/2013	100	124	-24
6/3/2013	94	116	-23
7/8/2013	93	113	-22
11/4/2013	101	117	-16
12/9/2013	86	110	-28
1/6/2014	102	121	-19
3/3/2014	97	118	-22
9/9/2014	112	128	-14
9/10/2014	114	129	-13
9/11/2014	109	130	-19
9/12/2014	110	126	-15
9/13/2014	112	127	-13

Sodium (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/15/2014	107	126	-18
9/16/2014	111	126	-14
9/17/2014	110	127	-15
9/18/2014	112	133	-19
MRE	94	109	-17

Zinc			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/5/2010	0.20	0.028	86
4/6/2010	0.15	0.028	81
7/6/2010	0.16	0.043	73
10/5/2010	0.13	0.046	65
1/4/2011	0.24	0.029	88
4/3/2011	0.10	0.035	65
10/3/2011	0.62	0.050	92
1/5/2012	0.12	0.068	43
4/5/2012	0.28	0.041	85
7/2/2012	0.15	0.041	73
10/8/2012	0.23	0.037	84
4/2/2013	0.36	0.043	88
1/6/2014	0.17	0.026	85
9/9/2014	0.21	0.038	82
9/10/2014	0.24	0.036	85
9/11/2014	0.27	0.037	86
9/12/2014	0.21	0.037	82
9/13/2014	0.22	0.037	83
9/15/2014	0.24	0.038	84
9/16/2014	0.21	0.037	82
9/17/2014	0.19	0.034	82
9/18/2014	0.19	0.03	84
MRE	0.22	0.038	83

Chloride			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	120	145	-21
11/3/2009	115	140	-22
12/1/2009	123	158	-28

Chloride (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/5/2010	135	162	-20
2/2/2010	132	152	-15
3/2/2010	119	140	-18
4/6/2010	110	123	-12
5/4/2010	111	119	-7
6/1/2010	106	123	-16
7/6/2010	114	138	-21
8/3/2010	109	133	-22
9/7/2010	103	128	-24
10/5/2010	128	129	-1
11/2/2010	144	140	3
11/16/2010	121	132	-9
12/7/2010	153	116	24
1/4/2011	135	138	-2
2/8/2011	109	128	-17
3/6/2011	107	120	-12
4/3/2011	97	111	-14
5/4/2011	104	111	-7
6/8/2011	222	128	42
8/3/2011	118	127	-8
10/6/2011	102	135	-32
11/3/2011	88	114	-30
12/8/2011	100	123	-23
1/5/2012	106	121	-14
2/2/2012	102	124	-22
3/8/2012	132	153	-16
4/5/2012	108	146	-35
5/3/2012	125	146	-17
6/7/2012	117	143	-22
7/2/2012	105	128	-22
8/6/2012	100	137	-37
9/10/2012	126	136	-8
9/24/2012	109	141	-29
10/8/2012	113	144	-27
11/5/2012	132	155	-17
12/3/2012	132	144	-9
2/4/2013	101	136	-35
3/4/2013	99	129	-30
4/8/2013	114	152	-33

Table E-4
CCWRF Removal Efficiencies
Local Limits Study

Chloride (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
5/6/2013	114	144	-26
6/3/2013	106	143	-35
7/8/2013	112	150	-34
11/4/2013	130	148	-14
12/9/2013	111	151	-36
1/6/2014	114	133	-17
3/3/2014	104	146	-40
9/9/2014	138	157	-14
9/10/2014	128	160	-25
9/11/2014	131	159	-21
9/12/2014	147	158	-7
9/13/2014	132	155	-17
9/15/2014	128	152	-19
9/16/2014	145	155	-7
9/17/2014	122	150	-23
9/18/2014	130	157	-21
MRE	120	139	-16

Cyanide (aquatic free)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	0.001	0.001	0
10/6/2009	0.001	0.001	0
11/3/2009	0.001	0.001	0
12/1/2009	0.001	0.001	0
1/5/2010	0.001	0.005	-400
2/16/2010	0.003	0.003	0
3/2/2010	0.001	0.001	0
4/6/2010	0.001	0.001	0
5/4/2010	0.001	0.001	0
6/1/2010	0.002	0.004	-100
7/6/2010	0.001	0.002	-100
8/3/2010	0.001	0.001	0
9/7/2010	0.001	0.002	-100
10/5/2010	0.001	0.001	0
11/2/2010	0.003	0.001	67
12/7/2010	0.001	0.001	0
1/4/2011	0.001	0.002	-100
2/9/2011	0.001	0.002	-100
3/8/2011	0.001	0.001	0
4/5/2011	0.001	0.001	0
5/3/2011	0.004	0.001	75
6/7/2011	0.005	0.001	80

Cyanide (aquatic free) (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
7/12/2011	0.001	0.001	0
8/2/2011	0.001	0.001	0
9/13/2011	0.001	0.001	0
10/18/2011	0.001	0.001	0
11/1/2011	0.002	0.001	50
12/13/2011	0.001	0.001	0
1/10/2012	0.001	0.001	0
2/7/2012	0.003	0.001	67
3/6/2012	0.001	0.001	0
4/17/2012	0.004	0.001	75
5/8/2012	0.001	0.001	0
6/5/2012	0.001	0.001	0
7/10/2012	0.001	0.001	0
8/2/2012	0.001	0.001	0
9/11/2012	0.004	0.003	25
10/2/2012	0.001	0.001	0
11/6/2012	0.003	0.001	67
12/4/2012	0.001	0.001	0
1/8/2013	0.001	0.001	0
2/5/2013	0.001	0.001	0
3/5/2013	0.001	0.001	0
4/2/2013	0.001	0.001	0
5/7/2013	0.001	0.001	0
6/4/2013	0.001	0.001	0
7/9/2013	0.001	0.001	0
11/5/2013	0.001	0.001	0
12/3/2013	0.001	0.001	0
1/14/2014	0.001	0.001	0
2/11/2014	0.001	0.001	0
3/25/2014	0.001	0.001	0
9/9/2014	0.001	0.001	0
9/10/2014	0.001	0.001	0
9/11/2014	0.001	0.001	0
9/12/2014	0.001	0.001	0
9/13/2014	0.001	0.001	0
9/15/2014	0.001	0.001	0
9/16/2014	0.001	0.001	0
9/17/2014	0.001	0.001	0
9/18/2014	0.001	0.001	0
MRE	0.001	0.001	10

Cyanide (total)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/9/2014	0.0025	0.0025	0
9/10/2014	0.011	0.0025	77
9/11/2014	0.006	0.005	17
9/12/2014	0.011	0.0025	77
9/13/2014	0.01	0.0025	75
9/15/2014	0.011	0.006	45
9/16/2014	0.017	0.005	71
9/17/2014	0.01	0.0025	75
9/18/2014	0.005	0.0025	50
MRE	0.0093	0.0034	63

Fluoride			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	0.2	0.2	0
11/3/2009	0.2	0.05	75
12/1/2009	0.2	0.05	75
1/5/2010	0.2	0.1	50
2/2/2010	0.2	0.2	0
3/2/2010	0.2	0.1	50
4/6/2010	0.2	0.6	-200
5/4/2010	0.2	0.2	0
6/1/2010	0.3	0.2	33
7/6/2010	0.2	0.1	50
8/3/2010	0.3	0.1	67
9/7/2010	0.2	0.05	75
10/5/2010	0.2	0.1	50
11/2/2010	0.3	0.1	67
12/7/2010	0.2	0.1	50
1/4/2011	0.2	0.1	50
2/8/2011	0.2	0.1	50
3/6/2011	0.2	0.1	50
4/3/2011	0.2	0.2	0
5/4/2011	0.1	0.2	-100
6/8/2011	0.3	0.2	33
7/7/2011	0.2	0.1	50
8/3/2011	0.2	0.2	0
9/7/2011	0.2	0.1	50
10/6/2011	0.2	0.1	50
11/3/2011	0.2	0.1	50
12/8/2011	0.2	0.1	50
1/5/2012	0.2	0.2	0
2/2/2012	0.2	0.3	-50

Table E-4
CCWRF Removal Efficiencies
Local Limits Study

Fluoride (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
3/8/2012	0.2	0.1	50
4/5/2012	0.2	0.2	0
5/3/2012	0.3	0.2	33
6/7/2012	0.2	0.4	-100
7/2/2012	0.2	0.2	0
8/6/2012	0.3	0.2	33
9/10/2012	0.2	0.2	0
10/8/2012	0.2	0.2	0
11/5/2012	0.2	0.2	0
12/3/2012	0.2	0.1	50
2/4/2013	0.3	0.2	33
3/4/2013	0.2	0.2	0
4/8/2013	0.2	0.2	0
5/6/2013	0.2	0.2	0
6/3/2013	0.2	0.2	0
7/8/2013	0.2	0.2	0
11/4/2013	0.3	0.2	33
12/9/2013	0.2	0.2	0
1/6/2014	0.2	0.1	50
MRE	0.2	0.2	22

Hardness			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	194	172	11
11/3/2009	204	183	10
12/1/2009	185	174	6
1/5/2010	183	163	11
2/2/2010	209	182	13
3/2/2010	216	190	12
4/6/2010	206	185	10
5/4/2010	195	168	14
6/1/2010	195	177	9
7/6/2010	192	181	6
8/3/2010	190	172	9
9/7/2010	167	158	5
10/5/2010	186	164	12
11/2/2010	184	158	14
12/7/2010	193	160	17
1/4/2011	229	188	18
2/8/2011	190	177	7
3/6/2011	187	173	7

Hardness (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
4/3/2011	178	160	10
5/4/2011	228	185	19
6/8/2011	479	187	61
8/3/2011	203	189	7
9/7/2011	196	177	10
10/3/2011	214	168	21
11/3/2011	188	168	11
12/8/2011	225	185	18
1/5/2012	189	173	8
2/2/2012	213	184	14
3/8/2012	169	168	1
4/5/2012	233	162	30
5/3/2012	250	201	20
6/7/2012	192	178	7
7/2/2012	188	161	14
8/6/2012	197	172	13
9/10/2012	179	158	12
10/8/2012	186	164	12
11/5/2012	185	167	10
12/3/2012	200	176	12
2/4/2013	207	194	6
4/2/2013	212	188	11
5/6/2013	194	181	7
6/3/2013	189	178	6
7/8/2013	188	170	10
11/4/2013	207	185	11
12/9/2013	193	178	8
1/6/2014	186	175	6
3/3/2014	176	160	9
MRE	203	175	14

Sulfate			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	29	72	-148
11/3/2009	37	55	-49
12/1/2009	36	57	-58
1/5/2010	34	59	-74
2/2/2010	37	62	-68
3/2/2010	70	60	14
4/6/2010	37	54	-46
5/4/2010	49	60	-22

Sulfate (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
6/1/2010	49	68	-39
7/6/2010	46	71	-54
8/3/2010	45	69	-53
9/7/2010	38	60	-58
10/5/2010	42	56	-33
11/2/2010	38	57	-50
11/16/2010	41	62	-51
12/7/2010	39	61	-56
1/4/2011	44	62	-41
2/8/2011	46	59	-28
3/6/2011	44	56	-27
4/3/2011	48	63	-31
5/4/2011	52	92	-77
6/8/2011	43	68	-58
8/3/2011	49	66	-35
9/7/2011	41	63	-54
10/6/2011	49	66	-35
11/3/2011	44	62	-41
12/8/2011	48	66	-38
1/5/2012	49	65	-33
2/2/2012	49	63	-29
3/8/2012	53	71	-34
4/5/2012	50	69	-38
4/5/2012	50	69	-38
5/3/2012	50	73	-46
6/7/2012	48	67	-40
7/2/2012	49	68	-39
8/6/2012	40	75	-88
9/10/2012	36	60	-67
9/24/2012	38	64	-68
10/8/2012	36	62	-72
11/5/2012	40	55	-38
12/3/2012	35	51	-46
2/4/2013	48	62	-29
3/4/2013	49	64	-31
4/8/2013	59	71	-20
5/6/2013	62	73	-18
6/3/2013	58	71	-22
7/8/2013	50	65	-30
11/4/2013	46	60	-30
12/9/2013	64	57	11
1/6/2014	52	66	-27

Table E-4
CCWRF Removal Efficiencies
Local Limits Study

Sulfate (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
3/3/2014	51	68	-33
9/9/2014	68	102	-50
9/10/2014	66	104	-58
9/11/2014	67	104	-55
9/12/2014	69	103	-49
9/13/2014	62	101	-63
9/15/2014	184	91	51
9/16/2014	69	102	-48
9/17/2014	67	98	-46
9/18/2014	73	108	-48
MRE	51	70	-37

TDS			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
9/1/2009	558	543	3
9/8/2009	530	550	-4
9/15/2009	528	544	-3
9/22/2009	514	530	-3
9/29/2009	528	504	5
10/13/2009	512	498	3
10/20/2009	554	536	3
10/27/2009	538	528	2
11/3/2009	492	500	-2
11/10/2009	506	520	-3
11/17/2009	496	510	-3
11/24/2009	498	520	-4
12/1/2009	502	522	-4
12/8/2009	556	520	6
12/15/2009	534	504	6
12/22/2009	558	532	5
12/29/2009	522	512	2
1/5/2010	568	520	8
1/12/2010	578	516	11
1/19/2010	544	514	6
1/26/2010	532	528	1
2/2/2010	562	526	6
2/9/2010	556	542	3
2/16/2010	574	534	7
2/23/2010	578	530	8
3/2/2010	558	526	6
3/9/2010	538	530	1

TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
3/16/2010	566	526	7
3/23/2010	534	508	5
3/30/2010	544	510	6
4/6/2010	546	528	3
4/13/2010	652	502	23
4/20/2010	534	510	4
4/27/2010	526	506	4
5/4/2010	532	500	6
5/11/2010	538	528	2
5/18/2010	521	508	2
5/25/2010	532	521	2
6/1/2010	543	529	3
6/8/2010	512	518	-1
6/15/2010	544	516	5
6/22/2010	516	518	0
6/29/2010	516	534	-3
7/6/2010	524	526	0
7/13/2010	512	518	-1
7/20/2010	604	528	13
7/27/2010	518	486	6
8/3/2010	556	516	7
8/10/2010	522	500	4
8/17/2010	548	492	10
8/24/2010	548	500	9
8/31/2010	508	468	8
9/7/2010	548	494	10
9/21/2010	524	494	6
9/28/2010	524	508	3
10/5/2010	550	498	9
10/12/2010	522	562	-8
10/19/2010	534	510	4
10/26/2010	510	504	1
11/2/2010	564	496	12
11/9/2010	502	518	-3
11/16/2010	556	510	8
11/23/2010	474	516	-9
11/30/2010	558	506	9
12/7/2010	566	522	8
12/14/2010	496	514	-4
12/21/2010	472	468	1
12/28/2010	550	518	6
1/4/2011	592	522	12

TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
1/11/2011	576	528	8
1/18/2011	610	500	18
1/25/2011	522	504	3
2/1/2011	488	490	0
2/8/2011	492	498	-1
2/15/2011	576	482	16
2/23/2011	516	482	7
3/2/2011	552	496	10
3/16/2011	516	508	2
3/23/2011	478	484	-1
3/30/2011	514	504	2
4/6/2011	500	502	0
4/13/2011	514	484	6
4/20/2011	612	498	19
4/27/2011	506	496	2
5/4/2011	518	534	-3
5/11/2011	514	594	-16
5/18/2011	574	542	6
5/25/2011	588	542	8
6/1/2011	836	526	37
6/8/2011	934	532	43
6/15/2011	570	538	6
6/22/2011	526	540	-3
6/29/2011	612	548	10
7/20/2011	512	518	-1
7/27/2011	672	524	22
8/3/2011	628	520	17
8/10/2011	544	516	5
8/17/2011	532	528	1
8/24/2011	554	520	6
8/31/2011	580	494	15
9/7/2011	526	504	4
9/21/2011	526	516	2
9/28/2011	562	498	11
10/6/2011	502	512	-2
10/13/2011	524	503	4
10/20/2011	502	496	1
10/27/2011	486	472	3
11/3/2011	526	482	8
11/10/2011	514	470	9
11/17/2011	488	496	-2
11/23/2011	484	470	3

Table E-4
CCWRF Removal Efficiencies
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TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
12/1/2011	512	488	5
12/8/2011	556	508	9
12/15/2011	554	502	9
12/22/2011	554	488	12
12/29/2011	522	496	5
1/5/2012	550	508	8
1/12/2012	548	504	8
1/19/2012	556	510	8
1/26/2012	530	488	8
2/2/2012	524	520	1
2/9/2012	539	504	6
2/16/2012	498	499	0
2/23/2012	542	513	5
3/1/2012	527	509	3
3/8/2012	559	549	2
3/15/2012	562	529	6
3/22/2012	564	510	10
3/29/2012	550	516	6
4/5/2012	580	534	8
4/12/2012	542	512	6
4/19/2012	532	512	4
5/3/2012	544	540	1
5/10/2012	544	534	2
5/18/2012	602	512	15
5/24/2012	574	536	7
5/31/2012	526	498	5
6/7/2012	562	508	10
6/21/2012	524	516	2
6/28/2012	556	522	6
7/5/2012	500	518	-4
7/12/2012	572	528	8
7/19/2012	526	524	0
7/26/2012	624	540	13
7/30/2012	544	542	0
8/6/2012	506	530	-5
8/13/2012	512	498	3
8/20/2012	498	506	-2
8/27/2012	518	510	2
9/4/2012	554	518	6
9/10/2012	574	526	8
9/17/2012	512	530	-4
9/24/2012	532	516	3
10/1/2012	488	518	-6

TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/8/2012	506	520	-3
10/15/2012	490	528	-8
10/22/2012	552	540	2
10/29/2012	568	528	7
11/5/2012	542	546	-1
11/12/2012	524	534	-2
11/19/2012	532	516	3
11/26/2012	524	526	0
12/3/2012	490	528	-8
12/10/2012	538	552	-3
12/17/2012	500	522	-4
12/24/2012	558	526	6
12/31/2012	514	528	-3
1/10/2013	582	540	7
1/14/2013	482	546	-13
1/21/2013	582	548	6
1/28/2013	526	542	-3
2/4/2013	526	530	-1
2/11/2013	542	522	4
2/21/2013	588	532	10
2/25/2013	488	516	-6
3/4/2013	512	514	0
3/11/2013	538	524	3
3/18/2013	532	524	2
3/25/2013	548	530	3
4/1/2013	550	536	3
4/8/2013	554	578	-4
4/15/2013	548	544	1
4/22/2013	564	552	2
4/29/2013	540	540	0
5/6/2013	552	548	1
5/13/2013	552	548	1
5/20/2013	498	552	-11
5/30/2013	568	568	0
6/3/2013	522	544	-4
6/10/2013	544	548	-1
6/17/2013	538	562	-4
6/24/2013	502	532	-6
7/1/2013	554	544	2
7/8/2013	518	562	-8
7/15/2013	502	538	-7
7/22/2013	550	546	1
7/29/2013	530	532	0

TDS (cont.)			
Date Collected	Influent (mg/L)	Effluent (mg/L)	RE(%)
10/28/2013	530	532	0
11/4/2013	552	540	2
11/11/2013	526	530	-1
11/18/2013	544	546	0
11/25/2013	558	534	4
12/2/2013	516	548	-6
12/9/2013	534	538	-1
12/16/2013	520	534	-3
12/23/2013	552	528	4
12/30/2013	558	542	3
1/6/2014	544	540	1
1/13/2014	564	540	4
1/20/2014	512	542	-6
1/27/2014	642	542	16
2/10/2014	514	524	-2
3/3/2014	488	536	-10
3/10/2014	534	540	-1
3/24/2014	524	530	-1
3/31/2014	512	534	-4
9/9/2014	718	574	20
9/10/2014	632	626	1
9/11/2014	564	572	-1
9/13/2014	602	584	3
9/15/2014	566	562	1
9/16/2014	592	556	6
9/17/2014	644	586	9
MRE	543	523	4

Table E-4
CCWRF Removal Efficiencies
Local Limits Study

Toluene			
Date Collected	**Influent (mg/L)**	**Effluent (mg/L)**	**RE(%)**
10/21/2009	0.007	0.0005	93
1/5/2010	0.0025	0.0005	80
4/6/2010	0.0025	0.0005	80
7/6/2010	0.0025	0.0005	80
10/5/2010	0.0025	0.0005	80
1/4/2011	0.0025	0.0005	80
4/5/2011	0.0025	0.0005	80
7/5/2011	0.0025	0.0005	80
10/4/2011	0.0025	0.0005	80
1/3/2012	0.014	0.0005	96
4/2/2012	0.0025	0.0005	80
4/2/2013	0.005	0.0005	90
9/15/2014	0.005	0.0005	90
9/16/2014	0.005	0.0005	90
9/18/2014	0.005	0.0005	90
MRE	0.004	0.0005	88

bis(2-Ethylhexyl)phthalate			
Date Collected	**Influent (mg/L)**	**Effluent (mg/L)**	**RE(%)**
10/5/2009	0.012	0.001	92
1/4/2010	0.005	0.001	80
4/5/2010	0.005	0.001	80
7/5/2010	0.005	0.001	80
10/4/2010	0.005	0.001	80
1/3/2011	0.005	0.001	80
4/3/2011	0.005	0.006	-20
10/3/2011	0.005	0.001	80
1/3/2012	0.013	0.001	92
4/5/2012	0.012	0.002	83
7/2/2012	0.005	0.001	80
10/2/2012	0.005	0.001	80
9/15/2014	0.018	0.001	94
9/16/2014	0.005	0.001	80
9/18/2014	0.005	0.001	80
MRE	0.007	0.0014	81

Notes:
mg/L = milligrams per liter
RE = removal efficiency
MRE = mean removal efficiency
NC = not calculated
% = percent
Blue shaded cells represent non-detect results that were substituted with 1/2 the reporting limit

Table E-5
Removal Efficiency Summary
Local Limits Study

Parameters	Calculated MREs (%) RP-1	RP-4	RP-5	CCWRF	Literature REs (%)
Metals					
Aluminum	95	95	97	95	--
Arsenic	NC	NC	NC	NC	45 / 53
Boron	9	-5	-2	5	--
Cadmium	NC	NC	NC	NC	50 / 73
Chromium	81	80	82	74	72 / 89
Copper	96	88	90	87	85 / 98
Iron	96	91	88	95	--
Lead	NC	NC	NC	NC	52 / 77
Manganese	75	-1	-29	92	--
Mercury	91	NC	90	91	67 / 75
Molybdenum	-1	15	22	-5	--
Nickel	50	36	41	39	17 / 57
Selenium	NC	NC	NC	NC	50 / 67
Silver	97	NC	NC	NC	62 / 82
Sodium	-17	-7	-15	-17	--
Zinc	89	79	77	83	78 / 88
Conventional Pollutants					
Chloride	-35	-15	-19	-16	--
Cyanide (free)	13	NC	8	10	--
Cyanide (total)	72	59	68	63	66 / 83
Fluoride	38	33	23	22	--
Hardness	15	15	7	14	--
Sulfate	-4	-11	-22	-37	--
TDS	-1	7	-3	4	--
Organics					
Toluene	89	NC	87	88	94 / 97
Bis(2-Ethylhexyl)phthalate	92	91	89	81	76 / 94

Notes:
Site-specific MREs were calculated based on 2009 to 2014 data
MRE = mean removal efficiency; RE = removal efficiency; % = Percent
NC = not calculated due to non-detect data; "--" = not available
Literature values = median and eighth decile values from 2004 USEPA Guidance, Appendix R, priority pollutant removal efficiencies for activated sludge and tertiary treatment and are provided for reference purposes only

ARCADIS

Appendix F

Allowable Industrial Loadings (AILs), Uniform Concentration Limits (UCLs), and Contributory Flow Limits (CFLs)

Table F-1
AILs, UCLs, and CFLs for RP-1
Local Limits Study

Parameter	Avg Background Conc (mg/L)	RP-1 Background Loading (lb/day)	MAHL (lb/day)	SF (decimal)	SA (lb/day)	AIL (lb/day)	Q_{SIU} (mgd)	UCL (mg/L)	Q_{Cont} (mgd)	CFL (mg/L)
Metals										
Cadmium	0.005	1.11	0.398	0.1	0.040	-0.747	0.501	NA	--	NC
	0	0	0.398	0.1	0.040	0.358	0.501	0.09	--	NC
Chromium	0.005	1.11	61.7	0.1	6.17	54.4	0.501	13.0	--	NC
	0	0	61.7	0.1	6.17	55.5	0.501	13.3	--	NC
Copper	0.05	11.1	45.8	0.1	4.58	30.2	0.501	7.22	--	NC
Lead	0.01	2.21	0.961	0.1	0.096	-1.345	0.501	NA	--	NC
	0	0	0.961	0.1	0.096	0.865	0.501	0.21	--	NC
Manganese	0.02	4.42	46.9	0.1	4.69	37.8	0.501	9.04	--	NC
Nickel	0.005	1.11	24.6	0.1	2.46	21.0	0.501	5.03	0.074	33.9
	0	0	24.6	0.1	2.46	22.1	0.501	5.30	0.074	35.7
Selenium	0.01	2.21	0.961	0.1	0.096	-1.35	0.501	NA	0.0004	NA
	0	0	0.961	0.1	0.096	0.865	0.501	0.21	0.0004	227
Sodium	91	20,112	25,779	0.1	2578	3,089	0.501	739	--	NC
Zinc	0.15	33.2	92.2	0.1	9.22	49.8	0.501	11.9	--	NC
Conventional Pollutants										
Chloride	102	22,543	32,810	0.1	3,281	6,986	0.501	1,672	--	NC
Cyanide (available/free)*	0.001	0.22	1.13	0.1	0.11	0.797	0.501	0.19	--	NC
	0	0.00	1.13	0.1	0.11	1.02	0.501	0.24	--	NC
Hardness	179	39,561	13,786	0.1	1.379	-27,153	0.501	NA	--	NC
Sulfate	50	11,051	35,153	0.1	3,515	20,587	0.501	4,927	--	NC
TDS	503	111,168	128,895	0.1	12,890	4,837	0.501	1,158	0.293	1,746
Organics										
Bis(2-Ethylhexyl)phthalate	0.011	2.43	11.7	0.1	1.17	8.10	0.501	1.94	--	NC

Notes:

Avg = flow-weighted average of RP-4 and RP-5 from 2014; mg/L = milligrams per liter; lb/day = pounds per day; mgd = million gallons per day; NA = not applicable

NC = not calculated; CFLs were calculated for POCs were the UCL was near or below the SIU discharge concentration

MAHL = maximum allowable headworks loading; SF = safety factor; SA = safety allowance (safety factor * MAHL)

AIL = allowable industrial loading; Q_{SIU} = total industrial flow rate; UCL = uniform concentration limit; Q_{cont}= total flow of contributory industrial users; CFL = contributory flow limit

RP-1 Background Loading = average background concentration (from RP-4 and RP-5 influent) * RP-1 influent flow rate (with SIU flows subtracted out) * 8.34 (conversion factor)
Industrial flow data for Q_{SIU} and Q_{cont} are based on 2013 to 2014 data

* 2004 UCL and CFL limits are reported for Cyanide (available) but the 2014 UCL and CFL limits are calculated for cyanide (free)

Bolded POCs = Pollutants with 2004 local limits

Blue shaded cells = Avg Background Conc were all non-detects, UCL recalculated based on 0 contribution from background loading
UCL = AIL / (Q_{SIU} * 8.34)

CFL = (AIL - L_{back}) / (Q_{Cont} * 8.34); where Lback = background loading including loading from non-contributing SIUs

CFLs are only applicable if there are contributory SIUs discharging the pollutant; CFLs are listed as "NA" when there are no associated contributory SIU flows
In the case where the AIL is smaller than the calculated background loading, there is no capacity for SIU loadings (i.e., negative AIL values) and UCLs and CFLs are not applicable
SIUs discharging to RP-1 = Amphastar, Aquamar, Cliffstar, Coca-Cola, Discus Dental, Evolution Fresh, Inland Powder, Jewland-Freya, Nestle, Net Shapes, Nongshim, OW Lee, PAC Rancho, Parallel Products, Parco, Schlosser Forge, Sun Badge, and Western Metals

Table F-2
AILs, UCLs, CFLs for CCWRF
Local Limits Study

Parameter	Avg Background Conc (mg/L)	CCWRF Background Loading (lb/day)	MAHL (lb/day)	SF (decimal)	SA (lb/day)	AIL (lb/day)	Q_{SIU} (mgd)	UCL (mg/L)	Q_{Cont} (mgd)	CFL (mg/L)
Metals										
Cadmium	0.005	0.281	0.250	0.1	0.025	-0.056	0.466	NA	--	NC
	0	0	0.250	0.1	0.025	0.225	0.466	0.06	--	NC
Chromium	0.005	0.281	12.0	0.1	1.20	10.5	0.466	2.71	--	NC
	0	0	12.0	0.1	1.20	10.8	0.466	2.79	--	NC
Copper	0.05	2.81	13.0	0.1	1.30	8.89	0.466	2.29	--	NC
Lead	0.01	0.561	0.938	0.1	0.094	0.283	0.466	0.07	0.069	0.40
	0	0	0.938	0.1	0.094	0.844	0.466	0.22	0.069	1.38
Manganese	0.02	1.12	39.1	0.1	3.91	34.1	0.466	8.77	--	NC
Nickel	0.005	0.281	8.14	0.1	0.814	7.05	0.466	1.81	0.070	12.0
	0	0	8.14	0.1	0.814	7.33	0.466	1.89	0.070	12.5
Selenium	0.01	0.561	0.626	0.1	0.063	0.002	0.466	0.00	--	NC
	0	0	0.626	0.1	0.063	0.563	0.466	0.14	--	NC
Sodium	91	5,108	6,881	0.1	688	1,085	0.466	279	--	NC
Zinc	0.15	8.42	25.5	0.1	2.55	14.5	0.466	3.74	--	NC
Conventional Pollutants										
Chloride	102	5,725	8,757	0.1	876	2,156	0.466	555	--	NC
Cyanide (available/free)*	0.001	0.056	0.299	0.1	0.030	0.213	0.466	0.05	--	NC
	0	0	0.299	0.1	0.030	0.269	0.466	0.07	--	NC
Hardness	179	10,047	3,637	0.1	364	-6,774	0.466	NA	--	NC
Sulfate	50	2,806	9,383	0.1	938	5,638	0.466	1,451	--	NC
TDS	503	28,232	35,836	0.1	3,584	4,020	0.466	1,034	0.466	1,034
Organics										
Bis(2-Ethylhexyl)phthalate	0.011	0.617	1.32	0.1	0.132	0.571	0.466	0.15	--	NC

Notes:

Avg = average; mg/L = milligrams per liter; lb/day = pounds per day; mgd = million gallons per day; NA = not applicable

NC = not calculated; CFLs were calculated for POCs were the UCL was near or below the SIU discharge concentration

MAHL = maximum allowable headworks loading; SF = safety factor; SA = safety allowance (safety factor * MAHL)

AIL = allowable industrial loading; Q_{SIU} = total industrial flow rate; UCL = uniform concentration limit; Q_{Cont}= total flow of contributory industrial users; CFL = contributory flow limit

CCWRF Background Loading = average background concentration (from RP-4 and RP-5 influent) * CCWRF influent flow rate (with SIU flows subtracted out) * 8.34 (conversion factor)
Industrial flow data for Q_{SIU} and Q_{Cont} are based on 2013 to 2014 data

* 2004 UCL and CFL limits are reported for Cyanide (available) but the 2014 UCL and CFL limits are calculated for cyanide (free)

Bolded POCs = Pollutants with 2004 local limits

Blue shaded cells = Avg Background Conc were all non-detects, UCL recalculated based on 0 contribution from background loading
UCL = AIL / (Q_{SIU} * 8.34)

CFL = (AIL - L_{back}) / (Q_{Cont} * 8.34); where Lback = background loading including loading from non-contributing SIUs

CFLs are only applicable if there are contributory SIUs discharging the pollutant; CFLs are listed as "NA" when there are no associated contributory SIU flows
In the case where the AIL is smaller than the calculated background loading, there is no capacity for SIU loadings (i.e., negative AIL values) and UCLs and CFLs are not applicable
SIUs discharging to CCWRF = American Beef Packers, Envision Plastics, Jewlland-Freya, Scott Brothers Dairy, and Wing Lee Farma

Table F-3
Comparison of Local Limits
Local Limits Study

Parameter	2014 Local Limits				2004 Local Limits	
	RP-1 UCL (mg/L)	RP-1 CFL (mg/L)	CCWRF UCL (mg/L)	CCWRF CFL (mg/L)	UCL (mg/L)	CFL (mg/L)
Metals						
Cadmium	0.09	NA	0.06	NA	0.23	2.79
Chromium	13.3	NA	2.79	NA	4.47	61.1
Copper	7.22	NA	2.29	NA	5.25	46.84
Lead	0.21	NA	0.22	1.38	1.52	14.32
Manganese	9.04	NA	8.77	NA	–	–
Nickel	5.30	35.7	1.89	12.5	3.52	48.13
Selenium	0.21	227	0.14	NA	–	–
Sodium	739	NA	279	NA	–	–
Zinc	11.9	NA	3.74	NA	11.82	53.33
Conventional Pollutants						
Chloride	1,672	NA	555	NA	–	–
Cyanide (available/free)*	0.24	NA	0.07	NA	0.09	1.22
Hardness	NA	NA	NA	NA	–	–
Sulfate	4,927	NA	1,451	NA	–	–
TDS	1,158	1,746	1,034	1,034	-1,505	-1,732
Organics						
Bis(2-Ethylhexyl)phthalate	1.94	NA	0.15	NA	–	–

Notes:

mg/L = milligrams per liter; UCL = uniform concentration limit; CFL = contributory flow limit; NA = not applicable; "–" = no limit

2004 Local Limits from 2004 Point of Connection Standards and Local Limits Report (2004, HDR), Appendix C

2014 cadmium, chromium, lead, nickel, selenium, and cyanide (free) UCLs and CFLs are based on assumed background contribution of 0

Negative 2014 UCLs and CFLs reported as "NA"

* 2004 UCL and CFL limits are reported for Cyanide (available) but the 2014 UCL and CFL limits are calculated for cyanide (free)

2004 TDS local limits implemented were 550 mg/L (for new SIUs) and 800 mg/L (for existing SIUs)

2004 local limits were based on RP-1 data

INFORMATION
ITEM
3B

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: July 30, 2015

To: Regional Technical Committee

From: Inland Empire Utilities Agency

Subject: Odor Study

RECOMMENDATION

This is an information item for the Regional Technical Committee to review.

BACKGROUND

This item was presented at the IEUA Board of Directors meeting on May 20, 2015.

Odor Study

May 2015

Inland Empire Utilities Agency

A MUNICIPAL WATER DISTRICT

Sylvie Lee, P.E.,
Manager of Planning and Environmental Compliance

Jesse Pompa, P.E.,
Senior Associate Engineer

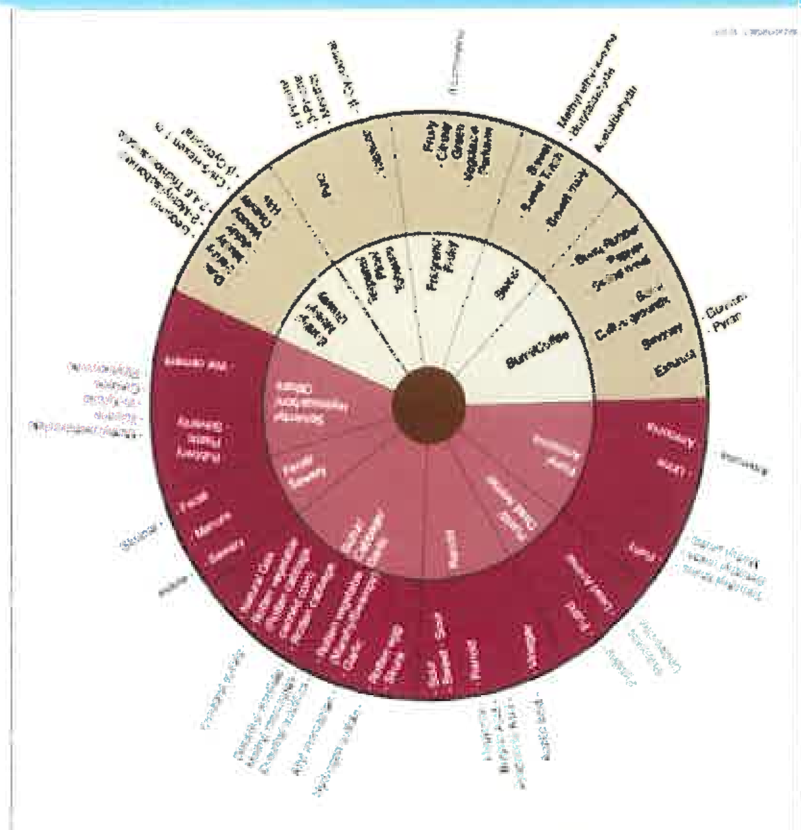
IEUA Odor Study

- Objective:
  - Be a good neighbor and address odor complaints

- Quarterly from Dec 2013 – Sep 2014
  - Sampling points at treatment plant fencelines to establish odor baselines and off-site exposure
  - Chemical samples provided for potential odor descriptors
  - Meteorological conditions recorded
  - Odor range and criteria developed

IEUA Odor Studies

- Panel Members
  - Chino – Environmental Coordinator
  - Ontario – Water/Wastewater Technician
  - CVWD – Inspector
  - IEUA – Sr. Operations Specialist
  - Advanced Environmental Compliance (AEC) – Emissions Testing and Monitoring



Inland Empire Utilities Agency
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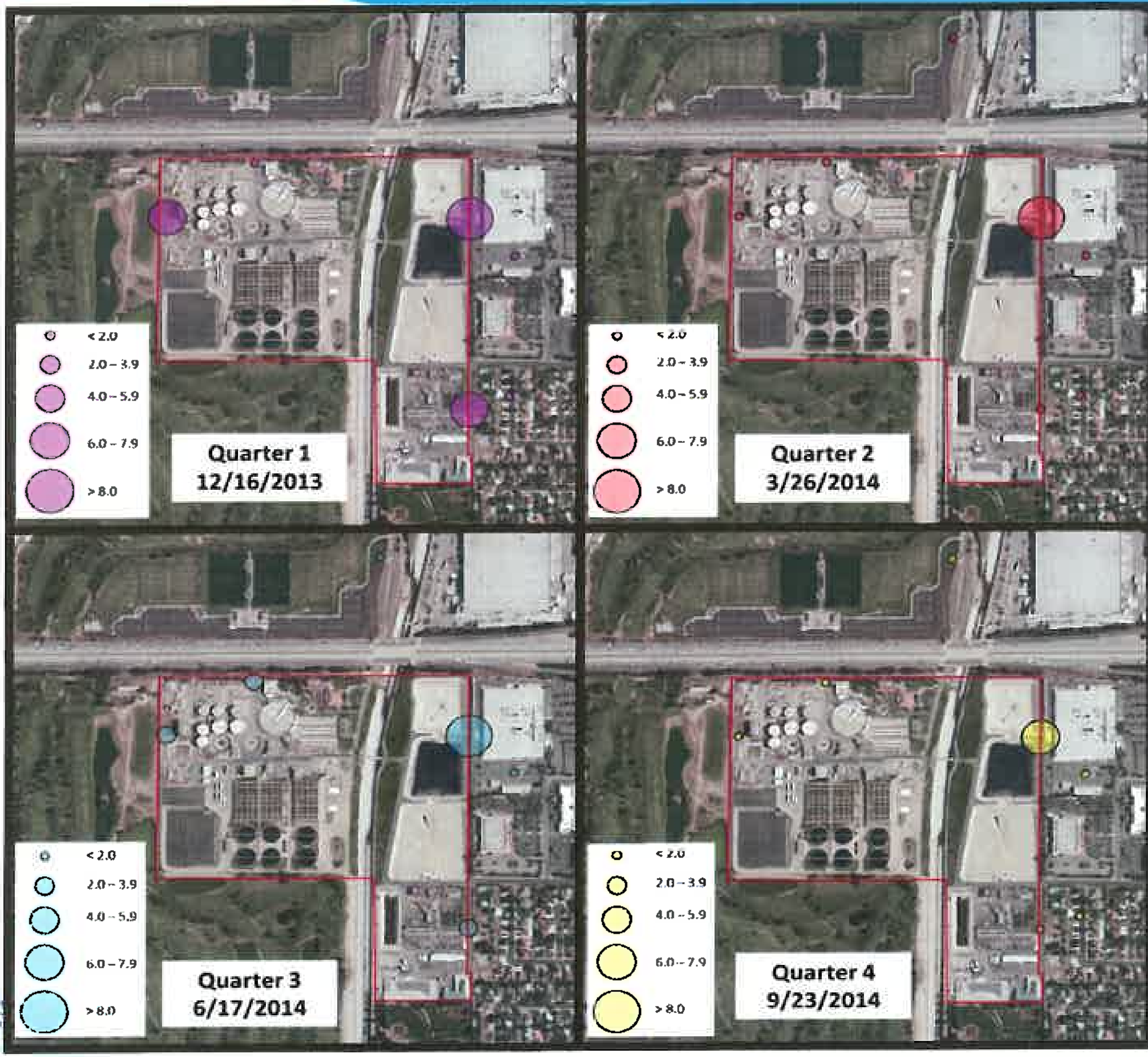
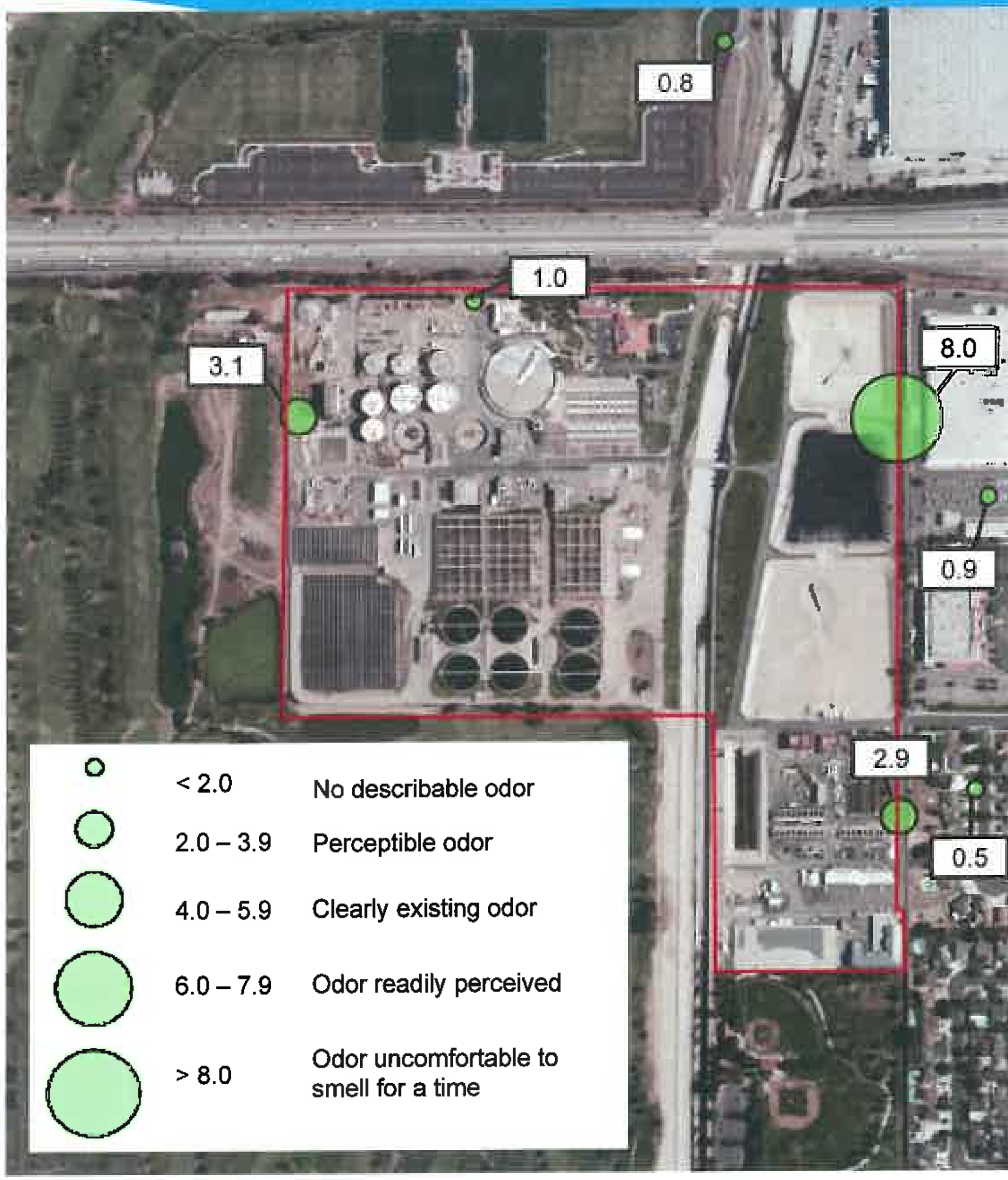
RP-1 Quarterly Results



RP-1 Annual Average



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Future Efforts

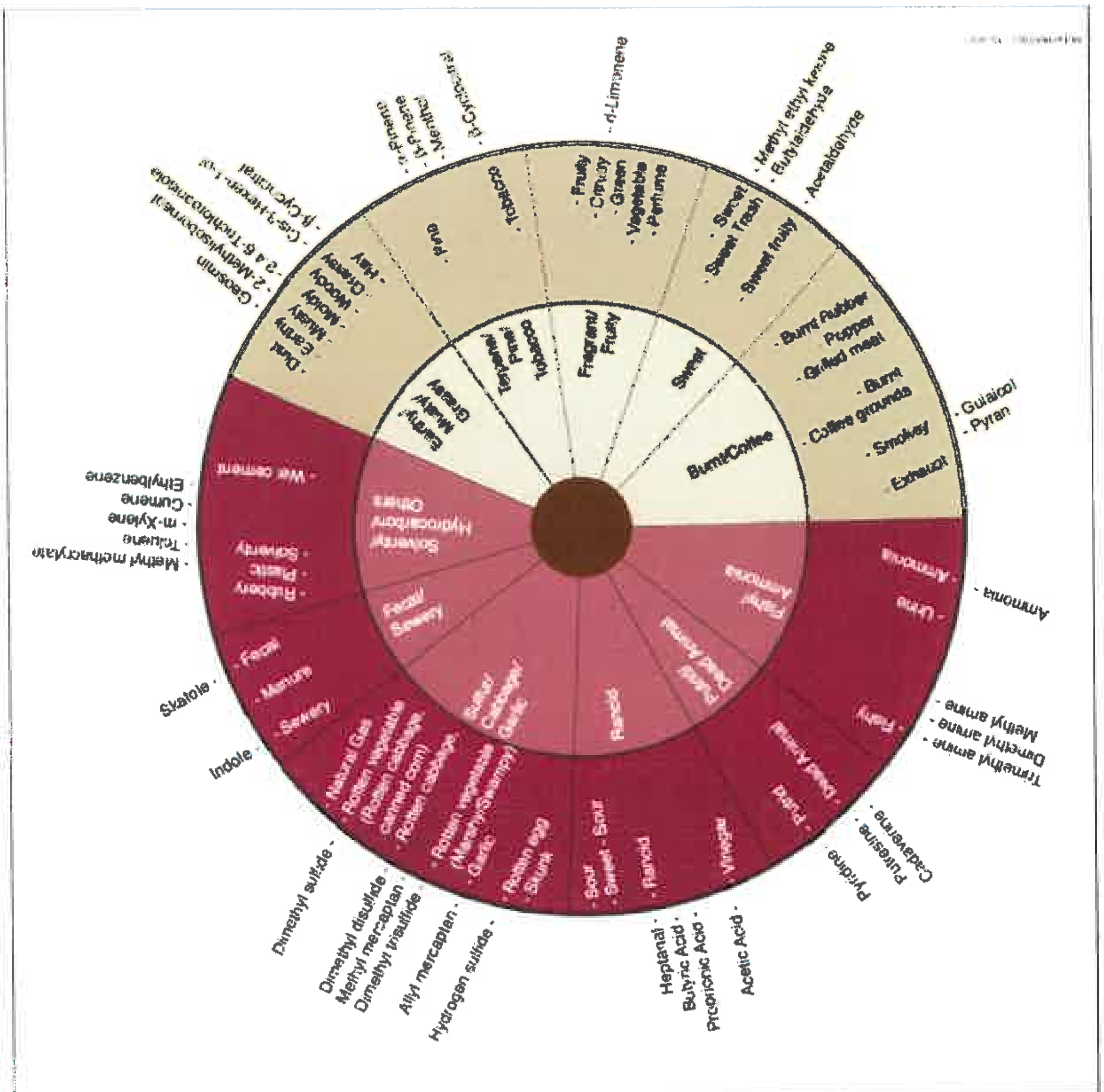
- TYCIP – Project EN19007 to eliminate primary effluent equalization
  - Kick-off expected in FY 23/24
- Report to be generated with all initial findings
- Quarterly sampling to continue

This project meets the Agency's Environmental Stewardship's Good Neighbor Business Goal in establishing odor baselines and being a good neighbor to the local community.

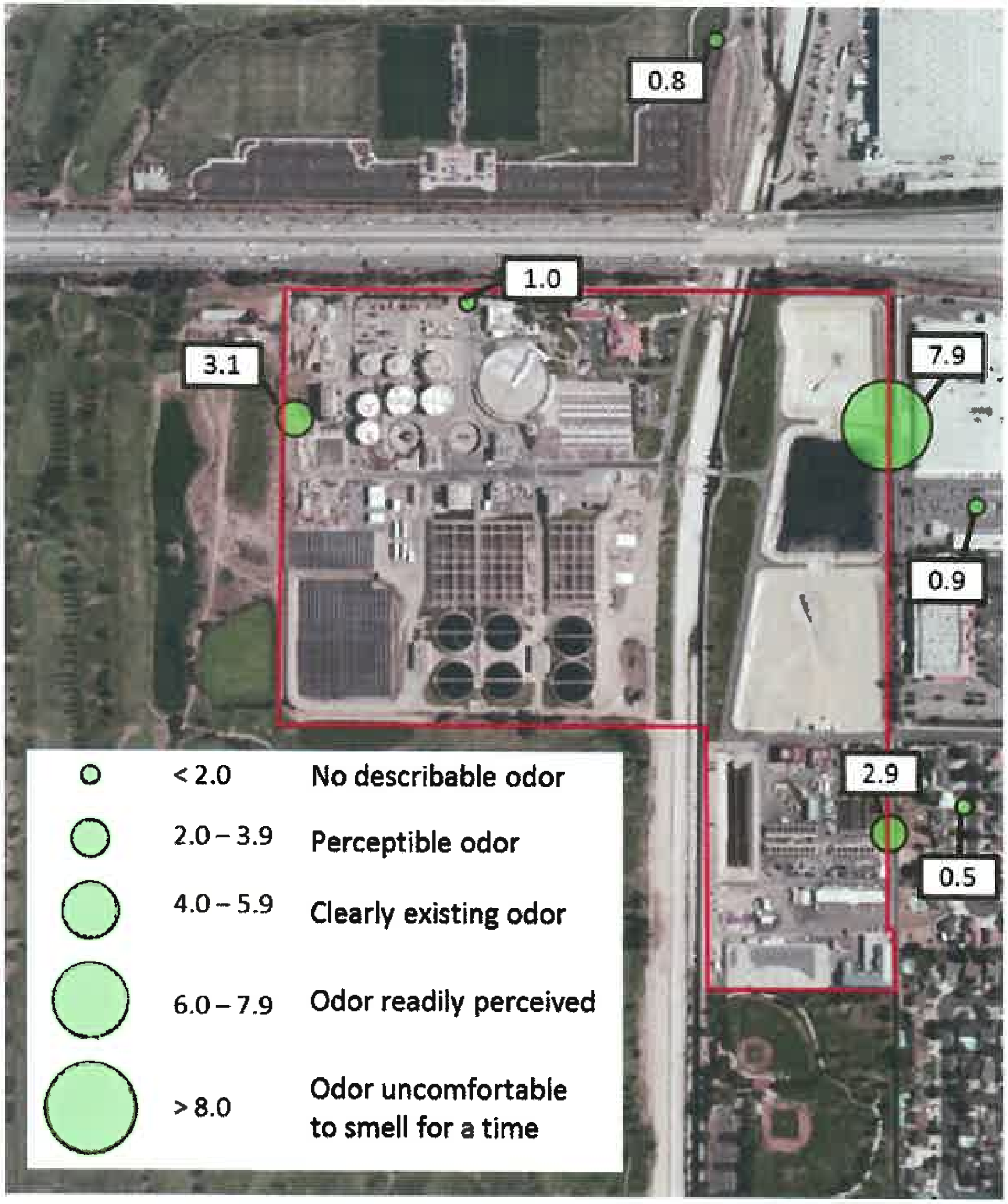
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Questions?

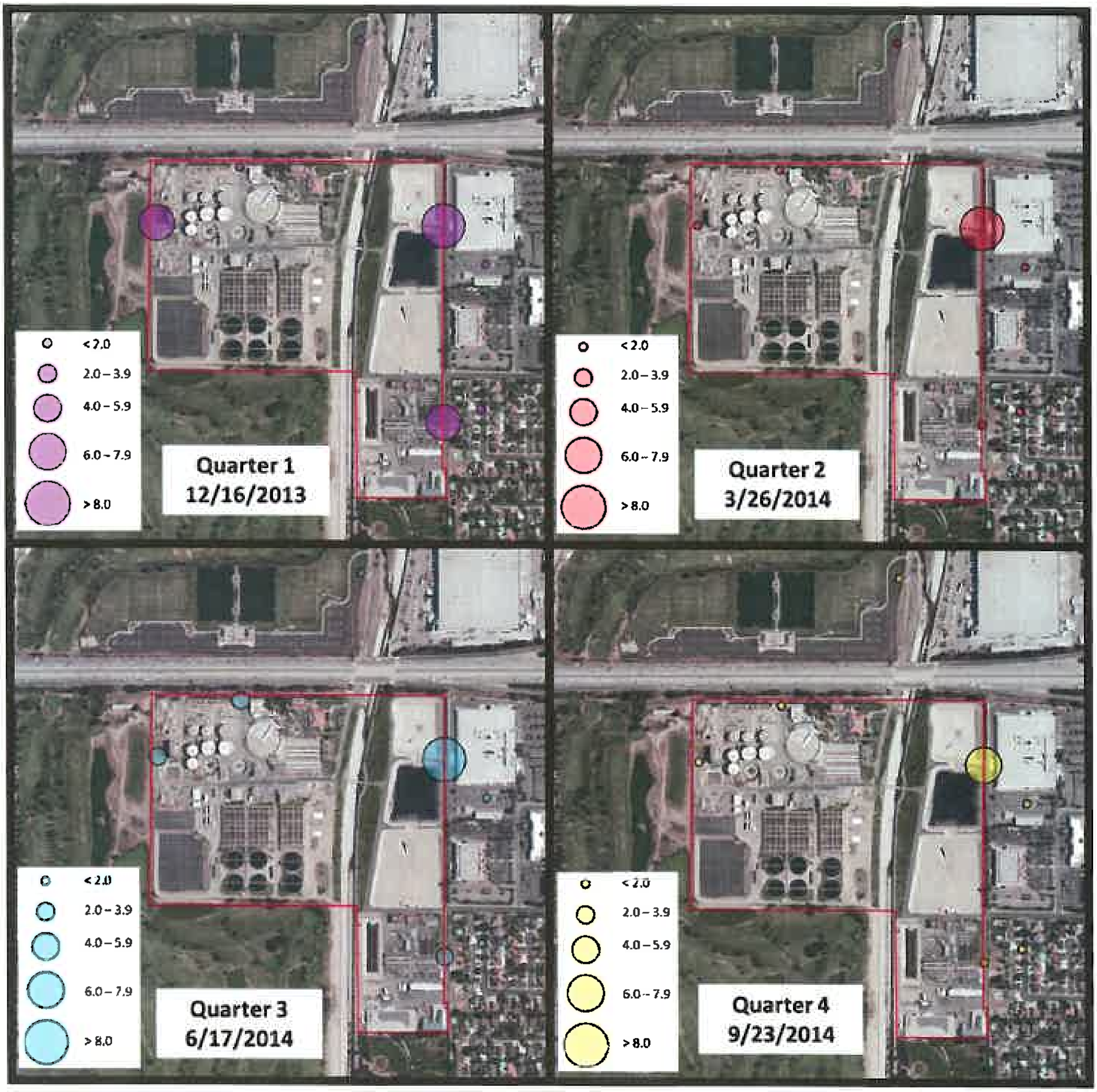
Landfill Odor Wheel



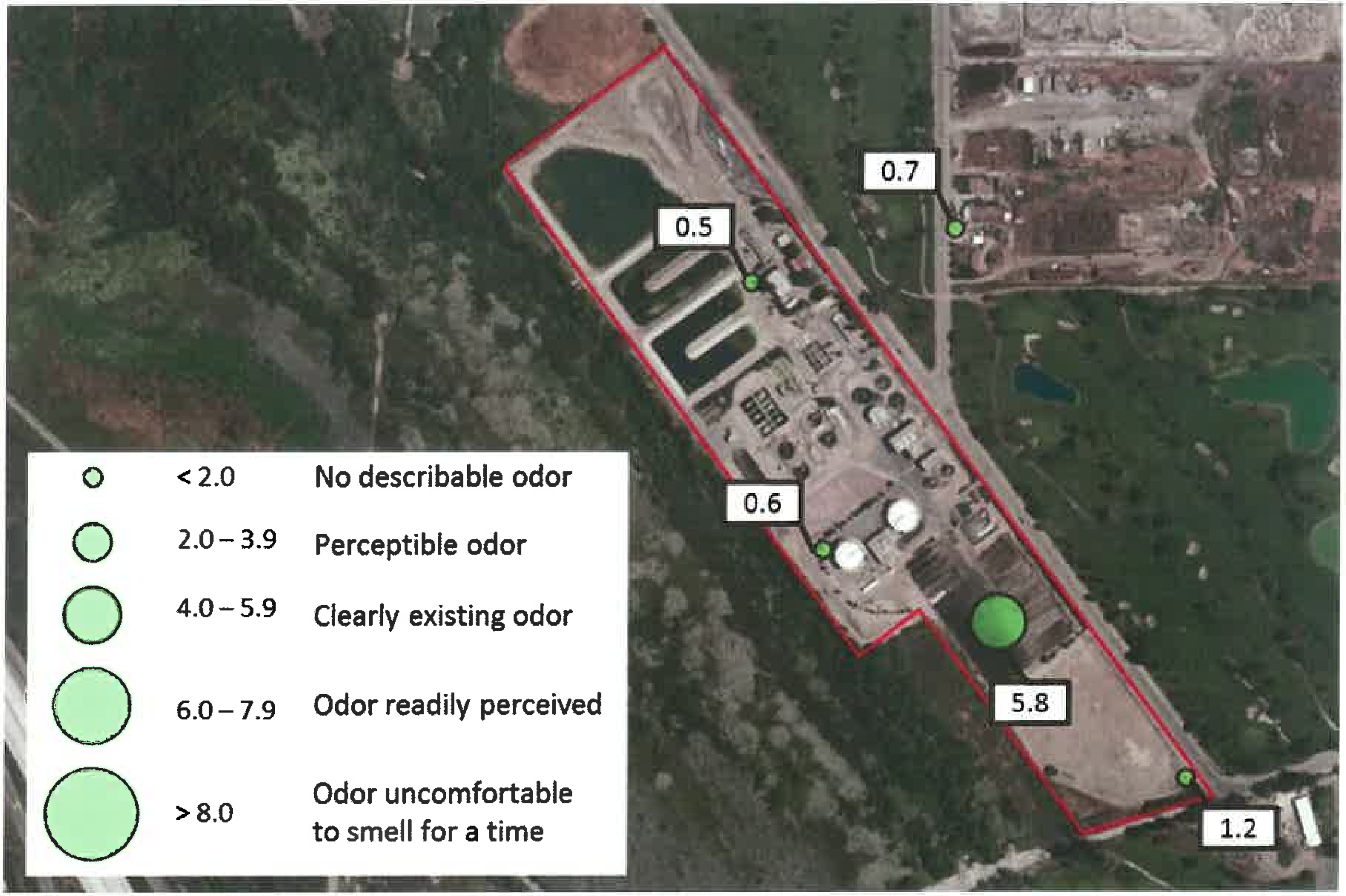
RP-1 Annual Average



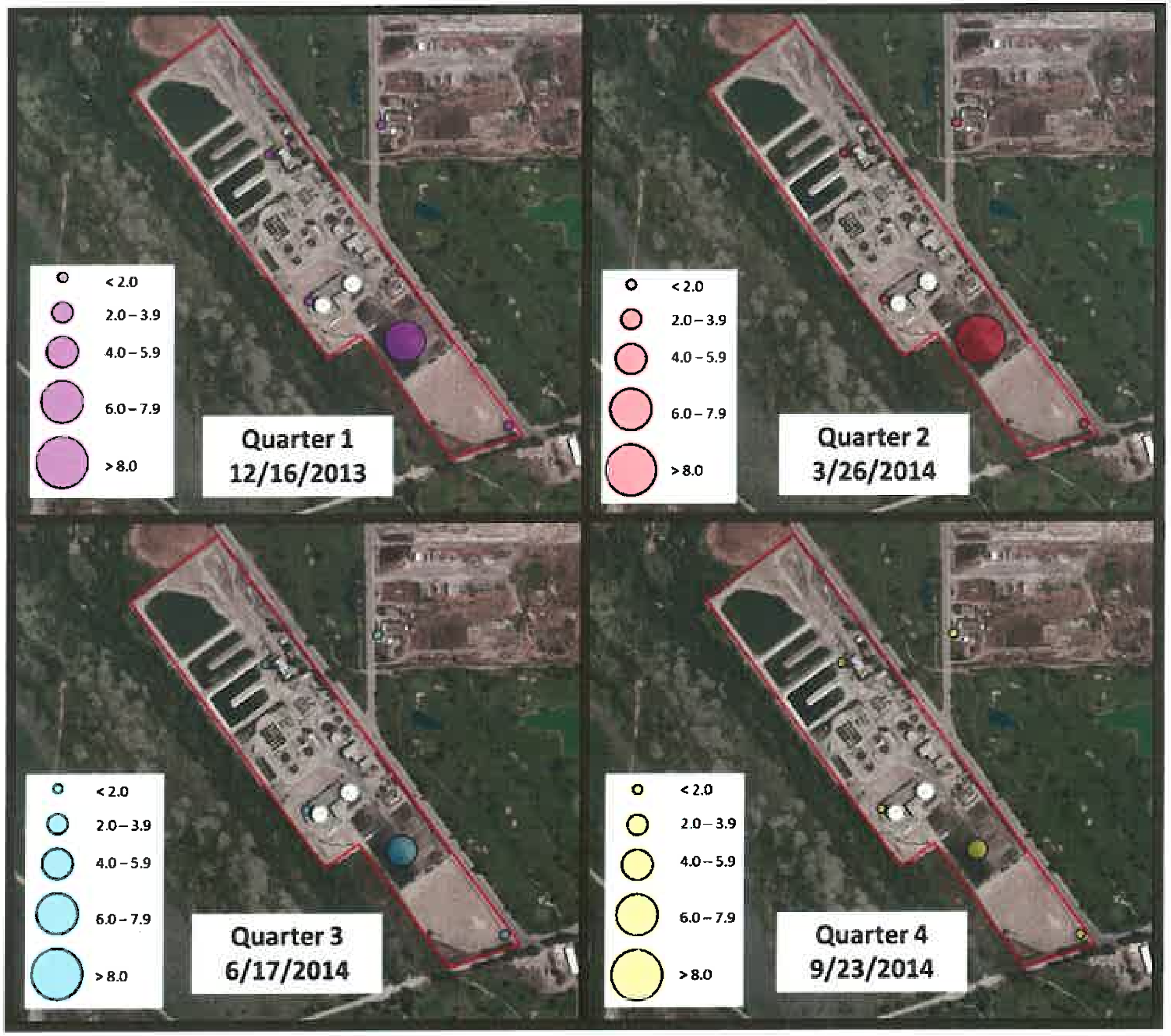
RP-1 Quarterly Results



RP-2 Annual Average



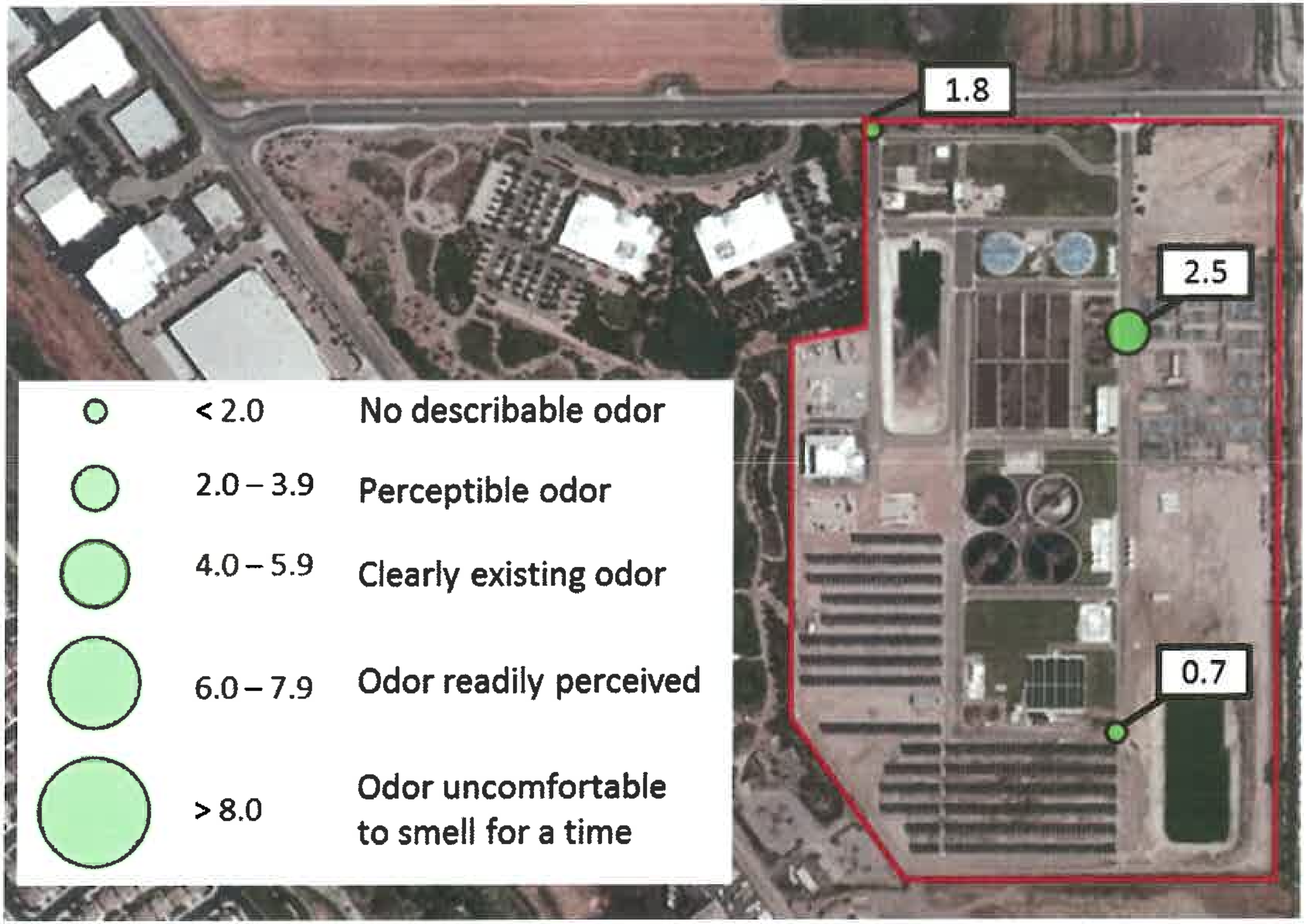
RP-2 Quarterly Results



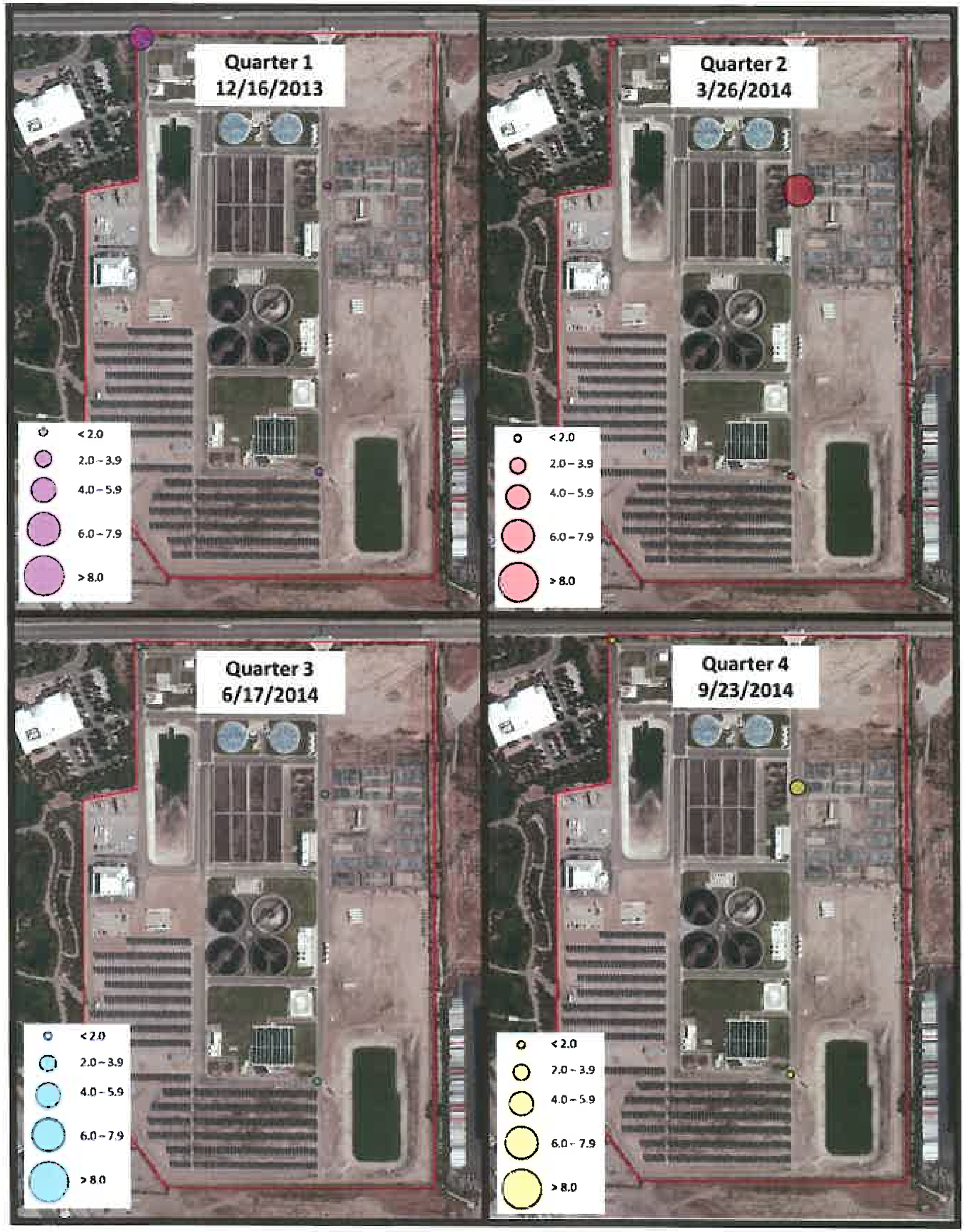
RP-4/IERCF Annual Average

RP-4/IERCF Quarterly Results

RP-5 Annual Average



RP-5 Quarterly Results



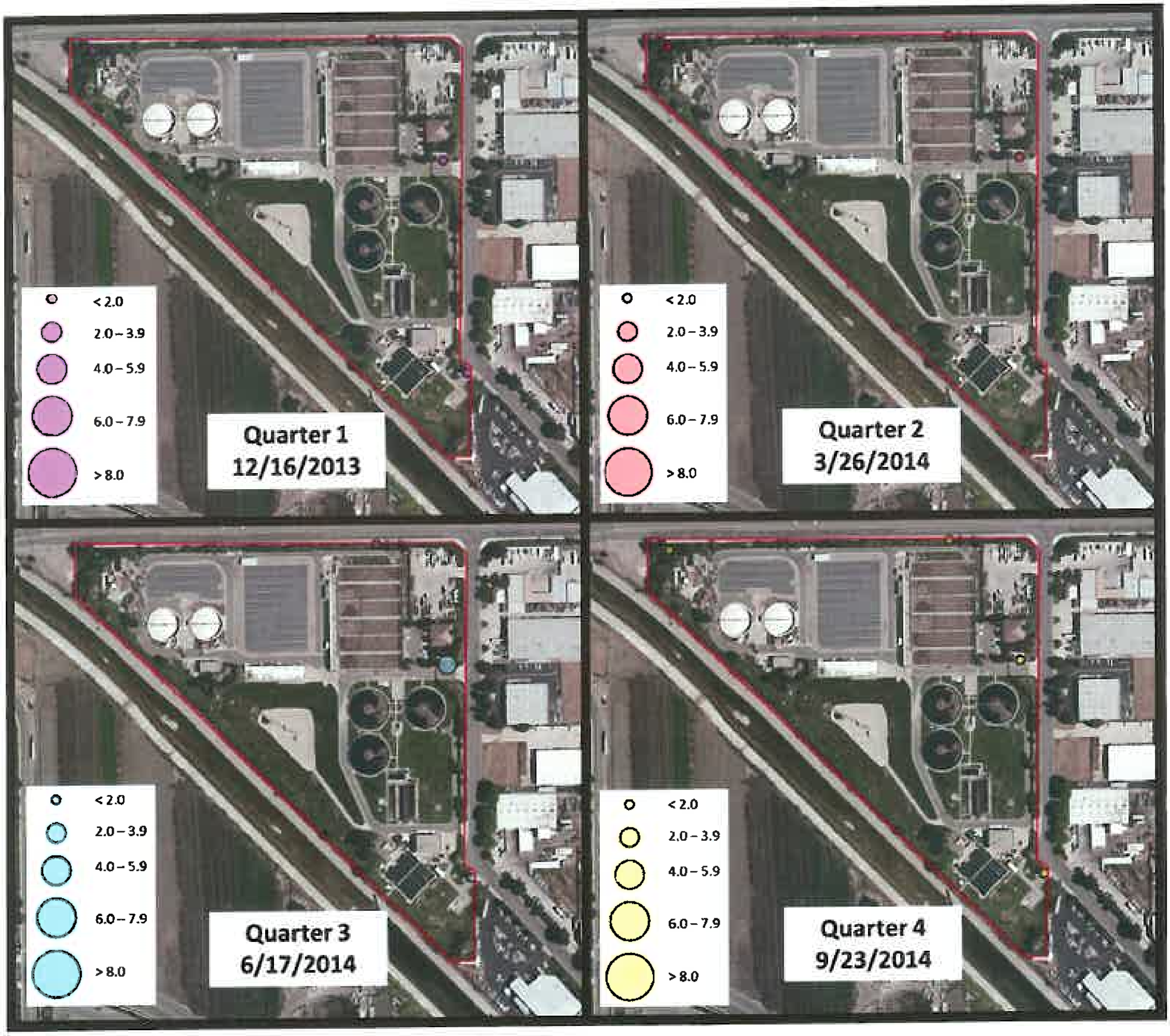
RP-5 SHF Annual Average

RP-5 SHF Quarterly Results

RP-5 SHF Quarterly Results

CCWRF Annual Average

CCWRF Quarterly Results



INFORMATION
ITEM
3C

Water Conservation Updates

July 2015

Inland Empire Utilities Agency

A MUNICIPAL WATER DISTRICT

California DROUGHT EMERGENCY

Water Conservation Programming

- MWD Turf Removal Programs
  - July 9, 2015 – All Turf Programs closed
  - MWD develops Waiting List – Cap $25 Million
- MWD Rebate Programs
  - All non-turf related rebates – Active
  - Rebate activity volume high – Budget may be exhausted by mid-year.
- IEUA Landscape Transformation Program
  - All funds committed – Contractor completing remaining sites in Chino, Fontana, Ontario, Rancho Cucamonga, and Upland

Water Conservation Programming, cont.

- Omni-Earth – Technology Based Software
  - Phase I – three member agencies (Chino Hills, Upland, MVWD)
  - Residential Conservation Targeting – Inefficient Users – GPCD
  - Assist with SWRCB Monthly Reporting

- Agricultural Drought Assistance
  - Identified UCR AG Specialist
  - Program contract specs under development & reviewed by Specialist
  - IEUA Staff meeting with Ag Reps to identify potential customers

Water Conservation Programming, cont.

- SAWPA Proposition 84 – Drought Emergency Grant
  - DWR-SAWPA Grant Contract executed on July 20, 2015
  - SAWPA issuing grant partnership agreements – week of 7/27/15
  - CII Turf Removal Customer List was submitted to SAWPA for match share obligation and invoicing for full grant reimbursement
  - Natural Resources Defense Council sues DWR on Water Conservation Compliance - AB 1420 & SBX 7-7.

INFORMATION ITEM

3D

Regional Contract Review

Montclair
Upland
Chino
Fontana
Cucamonga Valley Water District
Chino Hills
Ontario




Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Internal Audit Department
July 30, 2015

Purpose & Methodology

Audit Period:

- *From July 1, 2012 through December 31, 2013 and where possible events subsequent to that date.*
- *Earlier items tested if requested by IEUA Planning & Environmental Resources*
- *Earlier items tested if selected by physical observation of Community or from Business License listing*

Audit Sample Methodology:

- *Sampled items to identify those most likely to include errors.*

Sample items were selected from:

- *Business License reports*
- *Physical Observations*
- *Building Activity Reports (BAR)*
- *Businesses identified by IEUA*

Public Service Facilities

Hospitals

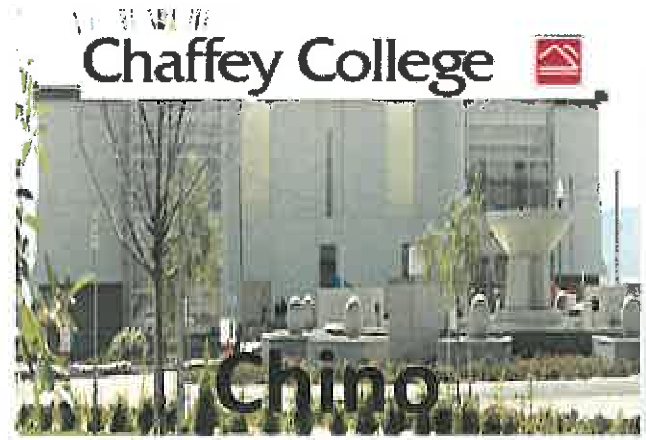
Contracting Agency	Hospital	Year	Connection Fees
Upland	San Antonio Community Hospital - Addition	2011	$ 1,370,197
Ontario	Kaiser Permanente – New Facility	2012	$ 1,409,106
Fontana	Kaiser Permanente – Hospital and Inpatient Tower	Replacement Hospital Opened: 2013	$ 0

Public Service Facilities

Colleges

Contracting Agency	College	New Buildings	Year Opened	Connection Fees
Chino	Chaffey College Chino Campus	3	2008	$ 0
Cucamonga Valley Water District	Chaffey College Rancho Cucamonga Campus	10 (Campus totals over 50 buildings)	2007 to 2011	$ 0
Fontana	Chaffey College Fontana Campus	1	2011	$ 52,845

NOTE: IEUA Planning & Environmental Compliance requested information about the Chaffey Chino Campus



Public Service Facilities

Public Schools (K-12)

Contracting Agency	School Name	School District	Type of construction	Year	Connection Fees
Chino	Howard Cattle Elementary School	Chino Valley Unified School District	New classroom wing with restrooms	Summer 2012	$ 0
Chino Hills	Chino Hills High School	Chino Valley Unified School District	Pool, showers and locker room	2012	$ 0
Cucamonga Valley Water District	Los Amigos Elementary School	Cucamonga School District	New 14 classroom building	2013	$ 0
Cucamonga Valley Water District	Bear Gulch Elementary School	Central School District	New 14 classroom and bathroom building	2010	$ 66,957
Cucamonga Valley Water District	Alta Loma High School	Chaffey Joint Union High School District	New classroom wing/building, gymnasium expansion, & athletic field complex	December 2014	$ 42,792
Cucamonga Valley Water District	Etiwanda High School	Chaffey Joint Union High School District	Classroom wing/building, food service building, performing arts auditorium & athletic field complex	Under Construction	$ 0
Cucamonga Valley Water District	Rancho Cucamonga High School	Chaffey Joint Union High School District	New auditorium building & athletic field complex	Under Construction	$ 0
Fontana	Jurupa Hills High School	Fontana Unified School District	New high school	2009	$ 272,182
Fontana	Citrus High School	Fontana Unified School District	New high school	2009	$ 149,228
Montclair	Howard Elementary School	Ontario Montclair School District	Multipurpose room with kitchen	2011	$ 102,388
Montclair	Moreno Elementary School	Ontario Montclair School District	Multipurpose room with restrooms	2013	$ 0
Montclair	Montclair High School	Chaffey Joint Union High School District	New 32 classroom building	2012	$ 0
Ontario	Richard Haynes Elementary School	Ontario Montclair School District	Multipurpose room with restrooms, warming kitchen, etc	Summer 2012	$ 0
Ontario	Ray Wiltsey Middle School	Ontario Montclair School District	13 classroom modular facility with multiple restrooms, outdoor areas, etc	Summer 2013	$ 0
Ontario	Ontario High School	Chaffey Joint Union High School District	New classroom building, restrooms, football stadium & pool	Under Construction	$ 0
Upland	Upland High School	Upland Unified School District	New gymnasium	2013	$ 22,506

Public Service Facilities

Categorization Differences

Contracting Agency	Description	Category Used	Fees Collected	Alternative Category	Possible Fees	Difference/ Shortage
Fontana	Caltrans Facility (SRL Building)	I: Retail, Office, Motel/Hotel, Fast Food, etc.	$ 46,343	VI: Public Facility	$ 65,756	$ 19,413
Fontana	Caltrans Facility (Independent Assurance Building)	I: Retail, Office, Motel/Hotel, Fast Food, etc.	$ 14,178	VI: Public Facility	$ 20,117	$ 5,939
Fontana	Police Department	I: Retail, Office, Motel/Hotel, Fast Food, etc.	$ 14,183	VI: Public Facility	$ 21,018	$ 6,835
Fontana	Police Department	I: Retail, Office, Motel/Hotel, Fast Food, etc.	$ 622	VI: Public Facility	$ 883	$ 261
Montclair	Community Center (Bathrooms)	I: Retail, Office, Motel/Hotel, Fast Food, etc.	$ 18,962	VI: Public Facility	$ 26,906	$ 7,944
Montclair	Splash Pad	I: Retail, Office, Motel/Hotel, Fast Food, etc.	$ 1,308	VI: Public Facility	$ 1,856	$ 548
Upland	Animal Shelter	I: Retail, Office, Motel/Hotel, Fast Food, etc.	$ 36,761	VI: Public Facility	$ 52,108	$ 15,347
Upland	Fire Station	I: Retail, Office, Motel/Hotel, Fast Food, etc.	$ 18,277	VI: Public Facility	$ 25,907	$ 7,630
TOTALS FOR ITEMS TESTED			**$ 150,634**		**$ 214,551**	**$ 63,917**

Exhibit J – Table 2

Category	Type of Commercial
I	Motel/Hotel, Recreation/Amusement, Restaurant (Fast Food), Retail Store, Office, Market (without Butcher Shop), and Bar/Tavern
II	Market (with Butcher Shop), Bakery, and Mortuary
III	Convalescent Home, Hospital, Health Spa with Pool, and Restaurant (Full Service)
IV	Laundry (Laundromat) and Dry Cleaner (Processor)
V	Car Wash (Coin Operated)
VI	Church, School, and Public Facility
VII	Health Spa without Pool and Laundromat

Commercial Enterprises
Categorization Differences

Contracting Agency	Category Used	Fees Collected	Alternative Category	Possible Fees	Difference/ Shortage
Residential Community Center					
Chino	I: Retail, Office, Motel/Hotel, Fast Food, etc.	$ 30,732	III: Hospital, Health Spa with Pool, full service restaurant	$ 123,206	$ 92,474
Chino	I: Retail, Office, Motel/Hotel, Fast Food, etc.	$ 16,129	III: Hospital, Health Spa with Pool, full service restaurant	$ 64,661	$ 48,532
Ontario	III: Hospital, Health Spa with Pool, full service restaurant	$112,297	-	-	-
Restaurant					
Montclair (Dragon 99 Restaurant)	I: Retail, Office, Motel/Hotel, Fast Food, etc.	$ 1,308	III: Hospital, Health Spa with Pool, full service restaurant	$ 5,243	$ 3,935
Veterinary Hospitals/Facilities					
Chino Hills (Pets N Vets Animal Hospital)	I: Retail, Office, Motel/Hotel, Fast Food, etc.	$ 2,539	III: Hospital, Health Spa with Pool, full service restaurant	$10,180	$ 7,641
Upland (Caremore Medical Enterprises)	I: Retail, Office, Motel/Hotel, Fast Food, etc.	$ 1,744	III: Hospital, Health Spa with Pool, full service restaurant	$ 6,990	$ 5,246

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Commercial Enterprises
Other Differences

Contracting Agency	Description	Fees Collected	Fees Per Audit Results	(Over)/Under Collected
Fixture Unit Value Differences				
Montclair	Fixture Unit Value Differences: 4 businesses identified with different values	$187,865	$180,403	($7,462)
Ontario	Fixture Unit Value Differences - 2013/14: 10 businesses tested with different values	$88,006	$104,556	$16,550
Unsupported Credit for Existing Fixture Units				
CVWD	Evolution Fresh	$561,643	$1,148,510	$586,687

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Regional Sewer Billing Formula

* Adopted by Regional Technical Committee in ***1997***
* Only available version is a "**Draft**" memo
* No evidence of IEUA Board approval
* Categories are inconsistent with those used in the Exhibit J for Connection Fees
* No guidance provided for "Master Meters"
* No minimum billing threshold established for commercial businesses (minimum1 EDU?)

Monthly Sewer Service Fees Observations Identified

Fontana:

- Monthly Sewer Service Fees assessed and collected based on Connection EDUs
- Collection of residential Sewer Service Fees through Property Tax Roll

Montclair:

- Reliance on the Water Usage/Flow report provided by Monte Vista Water District Report (MVWD)
- Commercial and Industrial businesses Monthly Sewer Service fees are assessed based on water consumption or assessed at least a minimum of one EDU per month, whichever is greater.
- Flow Information for the majority of the City of Montclair's civic facilities was not included in MVWD report; therefore, the EDUs were not reported and Monthly Sewer Service Fees not paid to IEUA.
- All businesses pay *at least* 1 EDU per month even if calculation from water consumption would be less.

CVWD:

- Report EDUs to IEUA based on Revenues Collected.
- All businesses pay *at least* 1 EDU per month even if calculation from water consumption would be less.

Monthly Sewer Service Fees Billing Classification Differences

Contracting Agency	Business	Monthly Category Used/Factor	Monthly Category Should Have Been/Factor	Estimated Monthly Amount Should Have Been	Monthly Amount Actually Billed	Estimated Amount (under-collected) and (underpaid) IEUA for 12 months
Chino	Canabru Coffee	Commercial: 0.0729	Restaurant: 0.1042	$ 41.02	$ 28.05	($ 155)
Chino	Min's Dumpling House	Commercial: 0.0729	Restaurant: 0.1042	$ 55.79	$ 48.78	($ 84)
Chino	McDonald's	Commercial: 0.0729	Restaurant: 0.1042	$ 78.75	$ 54.88	($ 286)
Chino	Subway	Commercial: 0.0729	Restaurant: 0.1042	$ 21.33	$ 14.63	($ 80)
Chino	Mountain Mike's Pizza	Commercial: 0.0729	Restaurant: 0.1042	$ 27.90	$ 19.51	($ 101)
Ontario	Fast 5 Pizza	Commercial: 0.0729	Restaurant: 0.1042	$ 23.72	$ 16.60	($ 86)
Ontario	Home Pie Bakery/Cafe	Commercial: 0.0729	Restaurant: 0.1042	$ 366.95	$ 256.69	($ 1,323)
Ontario	Miguel's Jr.	Commercial: 0.0729	Restaurant: 0.1042	$189.75	$132.69	($ 685)
Ontario	J & R Deli	Commercial: 0.0729	Restaurant: 0.1042	$ 62.79	$ 43.92	($ 226)
Ontario	Continental Funeral Home	Commercial: 0.0729	Mortuary: 0.1052	$ 107.06	$ 74.18	($ 395)
Ontario	Office/Medical Building	Commercial: 0.0729	Doctor/Dental: .0671	$ 115.87	$ 125.91	$ 121
Ontario	Camacho's Bakery	Laundry/Car Wash: .0626	Bakery: 0.1042	$ 189.75	$ 113.95	($ 910)
Upland	ARCO AM/PM	$0.00 – Not entered to billing system	Bimonthly commercial: 0.0364 Car Wash: 0.0626	$375.00	$0.00	($2,089)
Upland	Crossfit Saber	Used: 0.0073	Bimonthly commercial: 0.0364	$250.00	$50.11	($1,199)
Upland	Choice Market	Used: 0.0091	Bimonthly commercial: 0.0364	$253.00	$63.14	($1,139)
Upland	Body Rituals	Used: 0.0164	Bimonthly commercial: 0.0364	$147.00	$66.24	($ 485)

Challenges with Industrial Categories

<u>Contracting Agency comments:</u>

* Cost of Industrial Connection Fees "deter businesses"
* Cost and proximity of NRWS lines can impact costs to a business about deciding where to connect
* Connection Fees paid based on BOD and TSS are not related to Fixture Units and guidance about transferability is unclear and IEUA does not verify BOD and TSS reports
* Value of Capacity Rights is unclear if an SIU is declassified

Regional Contract Review
Audit Risk Matrix

IMPACT \ LIKELIHOOD	LOW	MEDIUM	HIGH
HIGH	Monthly Sewerage Fees • Not Collected from Governmental Facilities	Connection Fees • Not Collected from Hospitals	Connection Fees • Not Collected from Schools Connection Fees • Commercial Categorization Errors
MEDIUM	Residential Monthly Billing • Not Collected or Recorded	Commercial Monthly Sewerage • Missing Accounts Commercial Monthly Sewerage • Rate errors	Commercial Monthly Sewerage • Categorization Errors
LOW	Residential Connection Fees • Not collected		Connection Fees • Fixture Count Errors

CONCLUSION

IEUA and the Contracting Agencies are trapped in a spiral where the Contracting Agencies are not charging enough of the Connection and Monthly Fees that the Regional Contract requires leading to higher IEUA fees and an uneven playing field both from Contracting Agency to Contracting Agency and from Regional Business to Regional Business.

Regional Contract Review

NEXT STEPS:

1. Resolution of Audit Findings
   - IEUA has Fiduciary Collection Responsibility
   - Task Force of Contracting Agency - Finance Officers
   - Audit for 2014-2015 fiscal year results

2. Renegotiation of Contract
   - New Business Model
   - Review EDU Formula (270 gallons-per-day)
   - Region-wide Equity:
     - Initial Connections
     - Monthly Sewer Fees
   - On-going Workshops & Task Forces

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Comments & Discussion

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REGIONAL SEWERAGE PROGRAM
PRETREATMENT SUBCOMMITTEE

July 7, 2015
1:30 PM
IEUA HQ Building A, Rains Conference Room
6075 Kimball Avenue
Chino, CA 91710

Minutes

Members Present

Ruben Valdez.. City of Chino
Michael Birmelin.. City of Ontario
Nicole deMoet... City of Montclair
Robert Herbster... City of Upland
Craig Proctor.. IEUA

Absent

Shawn Perumean... Cucamonga Valley Water District
Andy Zummo.. City of Chino Hills

Others Present

Julio Im... IEUA
Ken Tam .... IEUA
Tony Mata.. City of Fontana (via conference call)

1. Introductions

   Introductions of those present were given. Tony Mata participated via conference call.

2. Informational Items & Updates

   a. Tech Meeting Report –

      The Regional Technical Committee meeting for June was cancelled due to lack of business.

   b. Treatment Plants –

RP-1/RP-4:

- RP-1/RP-4 met all the NPDES requirements during the month of May 2015.

RP-5:

- RP-5 met all the NPDES requirements during the month of May 2015.

CCWRF:

- CCWRF met all the NPDES requirements during the month of May 2015.

Agency-wide:

- The Agency-Wide 12-month running average TDS for the month of May 2015 was 533 mg/L, which did not exceed the 550 mg/L Agency-wide 12-month running average limit.

- The Agency-wide 12-month running average incremental increase between secondary effluent and water supply TDS for the month of April 2015 was 230 mg/L, which did not exceed the 250 mg/L Agency-wide 12-month running average limit.

Collections System:

- A Category 3 SSO occurred from a Non-Reclaimable Wastewater System manhole along Etiwanda Avenue on May 6, 2015. The SSO did not exceeded 1,000 gallons and did not reach a surface water. The Category 3 SSO report was submitted on the State Board's CIWQS website on May 28, 2015.

Recycled Water:

- No unauthorized discharges of more than 50,000 gallons of disinfected tertiary recycled water into the waters of the state occurred during the month of May 2015.

- No agricultural runoff events were reported to IEUA by member agencies during the month of May 2015.

c. <u>Pretreatment Programs</u>

Jewlland-Freya Health Sciences in the City of Montclair was issued a Notice of Violation and Order for Corrective Action in June for repeatedly exceeding their daily discharge limit for TDS-Fixed. Results of their investigation have been inconclusive. Resampling has indicated inconsistent compliance. A compliance meeting has been scheduled for July to discuss their corrective action plan to bring the facility back into consistent compliance.

Scott Brothers Dairy in the City of Chino was issued a Notice of Non-Compliance for exceeding their permitted discharge limit for TDS during the month of May. Industry conducted an investigation but results were inconclusive. Resampling has indicated inconsistent compliance.

3. Discussion Items

   a. Draft Local Limits Report

      Discussion ensued regarding the draft local limits report distributed to the committee members and the local limit proposed by Arcadis for TDS fixed. The consultant's initial recommendation was to update the TDS local limit to 1,034 mg/L from the current TDS local limits of 800 mg/L for existing industry and 550 mg/L for new industry using a uniform concentration limit and applying as a monthly average limit. Unfortunately, since the time of the study period IEUA has observed a rapid increase in both source water and treatment plant influent TDS. The flow weighted average source water TDS was 265 mg/L during the study period (2013-2014), while source water TDS as of May 2015 is ~340 mg/L. Data evaluated by IEUA from October 2014 through May 2015 shows that the flow weighted background TDS using RP-4 and RP-5 plant influent data is 553 mg/L compared to 503 mg/L during the study period. When the updated background loading is applied to the calculation for the TDS local limit along with the application of the safety factor, the Allowable Industrial Loading (AIL) becomes a negative number leaving no available TDS to allocate to the SIUs. As IEUA expects that TDS will continue to increase it does not think it would be in its best interest to make a recommendation to the Regional Water Quality Control Board to relax the local limit for TDS. Since IEUA cannot make a technically based recommendation for TDS at this time, IEUA will be proposing the local limit for TDS remain unchanged. IEUA will continue to watch TDS levels and if conditions warrant, IEUA will reevaluate the local limit for TDS.

   b. Future Discussion Topics

      None

The next Pretreatment Committee meeting will be held August 4, 2015 at 1:30 p.m. at IEUA. The meeting adjourned at 2:05 p.m.

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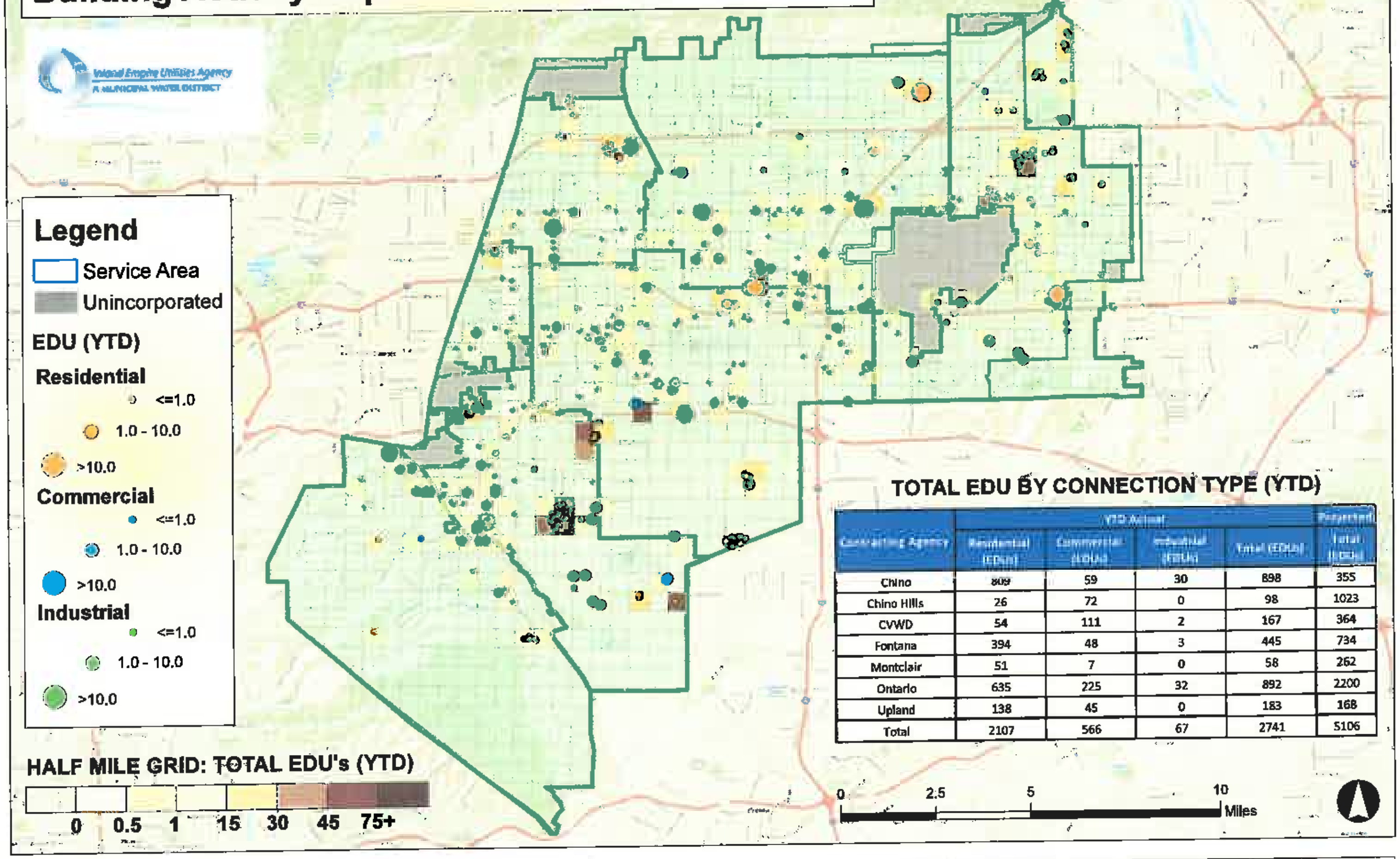
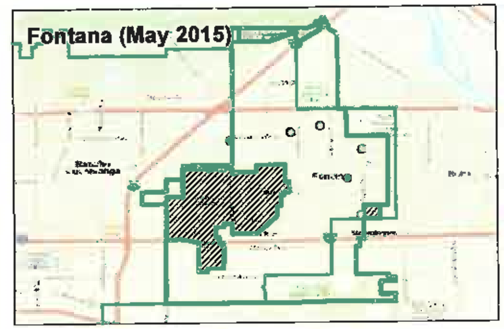
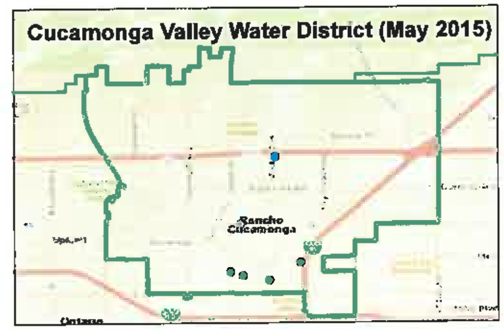
Building Activity Report - YTD Fiscal Year 2014/15

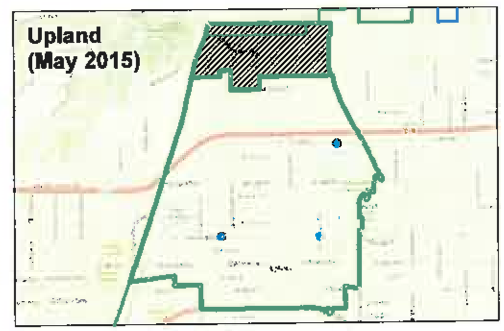


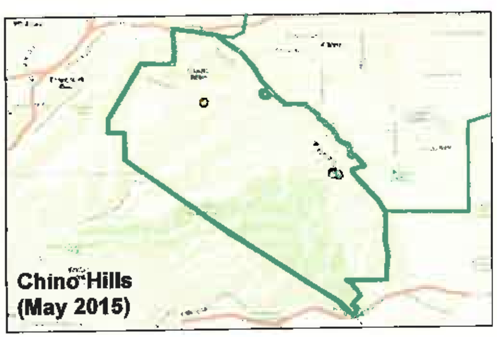
TOTAL EDU BY CONNECTION TYPE (YTD)

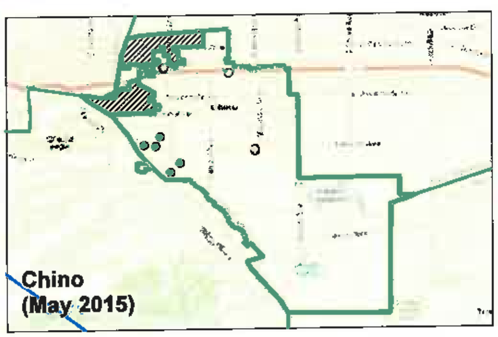
Contracting Agency	YTD Actual				Projected
	Residential (EDUs)	Commercial (EDUs)	Industrial (EDUs)	Total (EDUs)	Total (EDUs)
Chino	809	59	30	898	355
Chino Hills	26	72	0	98	1023
CVWD	54	111	2	167	364
Fontana	394	48	3	445	734
Montclair	51	7	0	58	262
Ontario	635	225	32	892	2200
Upland	138	45	0	183	168
Total	2107	566	67	2741	5106

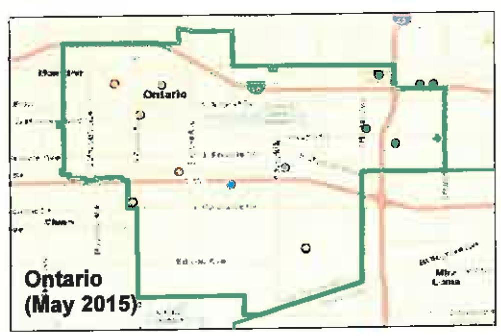


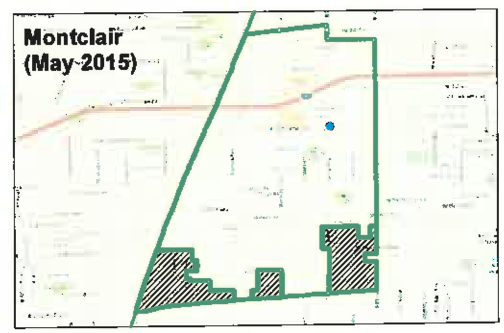












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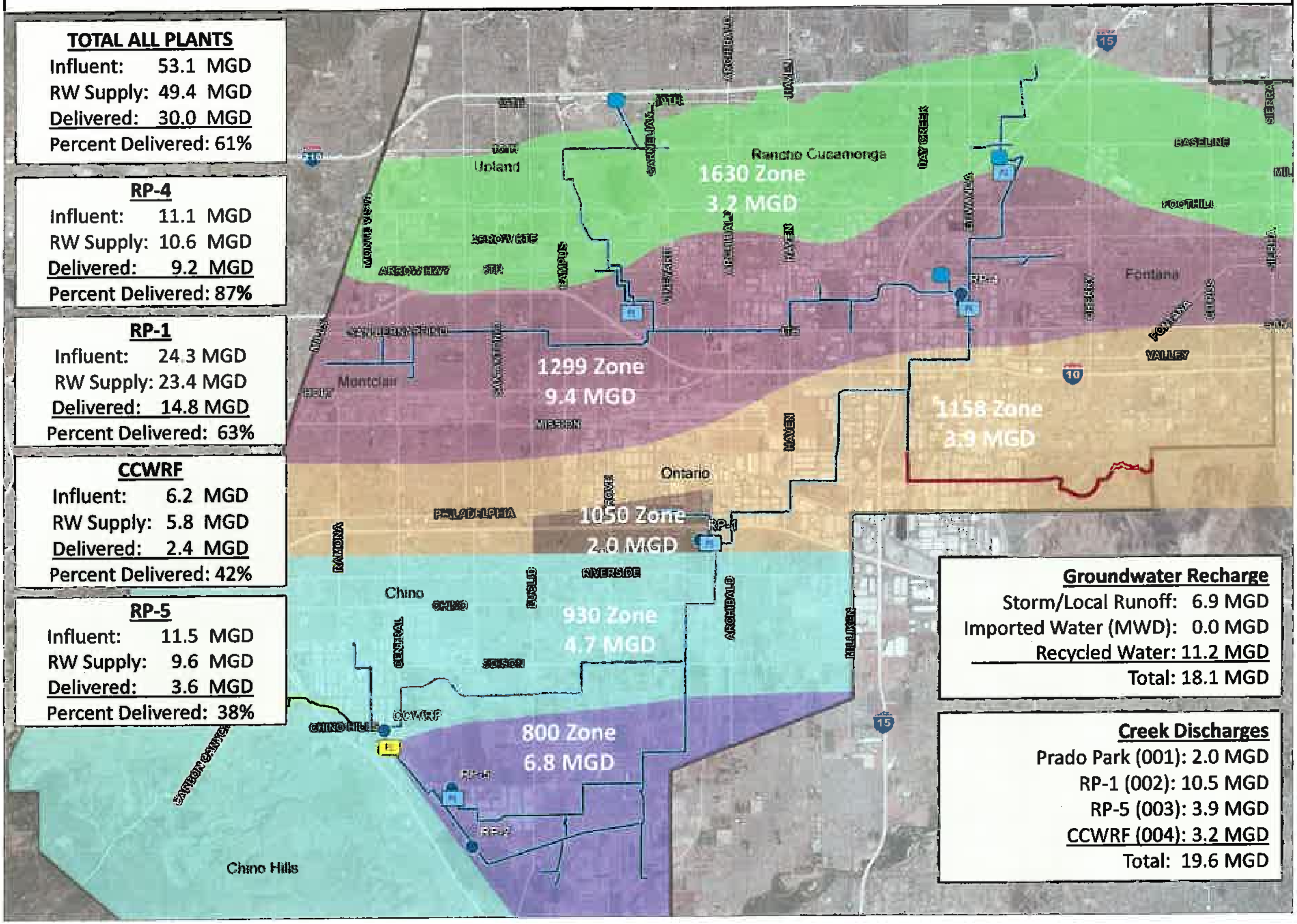
IEUA RECYCLED WATER DISTRIBUTION – MAY 2015



TOTAL ALL PLANTS
Influent: 53.1 MGD
RW Supply: 49.4 MGD
Delivered: 30.0 MGD
Percent Delivered: 61%

RP-4
Influent: 11.1 MGD
RW Supply: 10.6 MGD
Delivered: 9.2 MGD
Percent Delivered: 87%

RP-1
Influent: 24.3 MGD
RW Supply: 23.4 MGD
Delivered: 14.8 MGD
Percent Delivered: 63%

CCWRF
Influent: 6.2 MGD
RW Supply: 5.8 MGD
Delivered: 2.4 MGD
Percent Delivered: 42%

RP-5
Influent: 11.5 MGD
RW Supply: 9.6 MGD
Delivered: 3.6 MGD
Percent Delivered: 38%

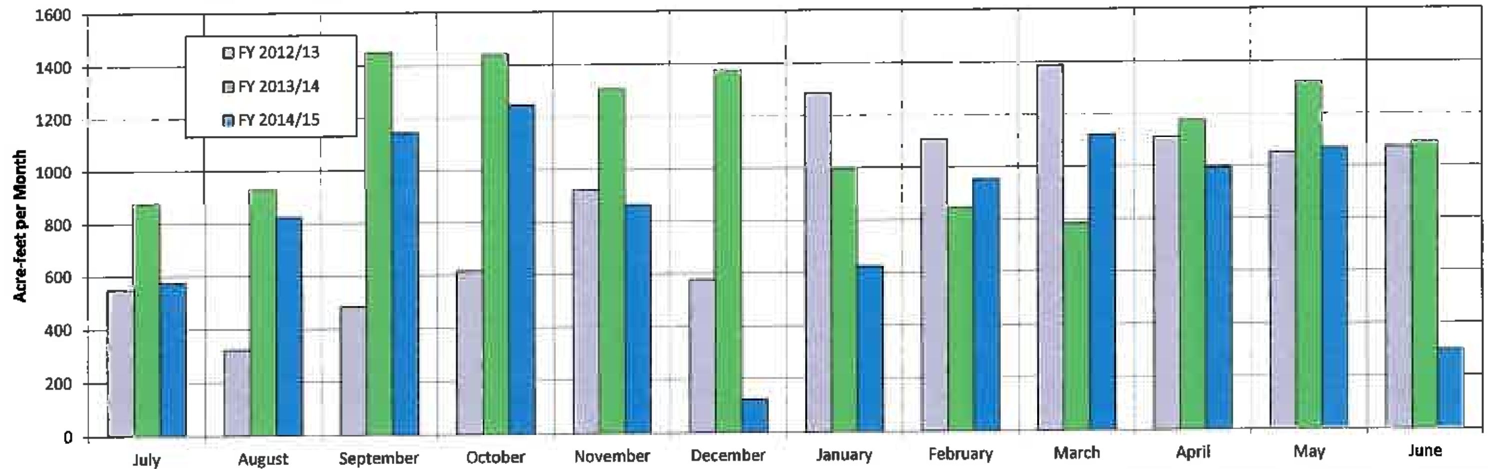
Groundwater Recharge
Storm/Local Runoff: 6.9 MGD
Imported Water (MWD): 0.0 MGD
Recycled Water: 11.2 MGD
Total: 18.1 MGD

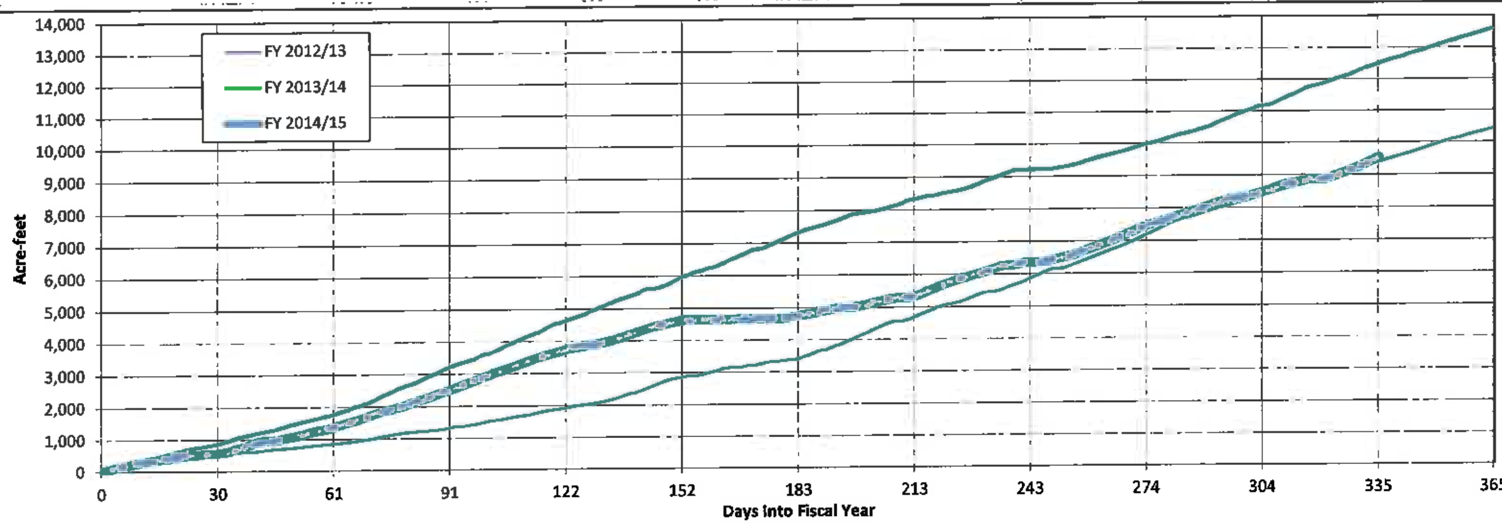
Creek Discharges
Prado Park (001): 2.0 MGD
RP-1 (002): 10.5 MGD
RP-5 (003): 3.9 MGD
CCWRF (004): 3.2 MGD
Total: 19.6 MGD

Recycled Water Recharge Deliveries / Plan - May 2015 (Acre-Feet)

Deliveries are draft until reported as final.

Basin	5/1-5/6	5/7-5/13	5/14-5/20	5/21-5/31	Month Actual	Month Plan	Year To Date Actual	General Status for May
Ely	18.6	26.4	20.2	95.2	160.3	200	1478	On Maintianing Basin Level (Basins 2&3, Basin 1 Off
Banana	44.9	38.8	0.0	76.9	160.6	30	1122	Limited deliveries
Hickory	44.9	38.8	25.3	29.9	139.0	50	1837	On Maintianing Basin Level
Turner 1 & 2	0.0	0.0	0.0	0.0	0.0	0	867	Off, drying out basin
Turner 3 & 4	0.0	0.0	0.0	0.0	0.0	0		Off, drying out basin
8th Street	0.0	0.0	0.0	0.0	0.0	280	48	Off, basin cleaning
Brooks	43.6	6.1	10.0	60.3	120.1	100	855	On Maintianing Basin Level
RP3	66.8	20.2	40.9	220.1	348.0	200	2437	On Maintianing Basin Level
Declez	0.0	0.0	0.0	0.0	0.0	0	0	No RW delivery mechanism
Victoria	30.5	29.8	15.1	65.2	140.6	100	899	On Maintianing Basin Level
San Sevaine	0.0	0.0	0.0	0.0	0.0	0	1	Off
Total	249.4	160.1	111.5	547.5	1068.6	960	9,544	12,503 AF, past FY End of Month Actual





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Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

AGENDA

SPECIAL JOINT WORKSHOP OF THE INLAND EMPIRE UTILITIES AGENCY BOARD OF DIRECTORS AND THE REGIONAL POLICY COMMITTEE

WEDNESDAY, AUGUST 5, 2015
10:00 A.M.

INLAND EMPIRE UTILITIES AGENCY*
AGENCY HEADQUARTERS
6075 KIMBALL AVENUE, BUILDING A
CHINO, CALIFORNIA 91708

CALL TO ORDER OF THE JOINT INLAND EMPIRE UTILITIES AGENCY BOARD OF DIRECTORS AND REGIONAL POLICY COMMITTEE MEETING

FLAG SALUTE

PUBLIC COMMENT

Members of the public may address the Board on any item that is within the jurisdiction of the Board; however, no action may be taken on any item not appearing on the agenda unless the action is otherwise authorized by Subdivision (b) of Section 54954.2 of the Government Code. Those persons wishing to address the Board on any matter, whether or not it appears on the agenda, are requested to complete and submit to the Board Secretary a "Request to Speak" form which are available on the table in the Board Room. Comments will be limited to five minutes per speaker. Thank you.

ADDITIONS TO THE AGENDA

In accordance with Section 54954.2 of the Government Code (Brown Act), additions to the agenda require two-thirds vote of the legislative body, or, if less than two-thirds of the members are present, a unanimous vote of those members present, that there is a need to take immediate action and that the need for action came to the attention of the local agency subsequent to the agenda being posted

1. WORKSHOP

A. INTEGRATED WATER RESOURCES PLAN (IRP)

2. ADJOURN

*A Municipal Water District

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Board Secretary (909) 993-1736, 48 hours prior to the scheduled meeting so that the Agency can make reasonable arrangements.

Proofed by: ________

Declaration of Posting

I, April Woodruff, Board Secretary of the Inland Empire Utilities Agency*, A Municipal Water District, hereby certify that a copy of this agenda has been posted by 5:30 p.m. at the Agency's main office, 6075 Kimball Avenue, Building A, Chino, CA on Thursday, July 30, 2015.

____

April Woodruff

DRAFT

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Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date:	July 30, 2015
To:	Regional Technical Committee
From:	Inland Empire Utilities Agency
Subject:	Recycled Water Program Strategy

RECOMMENDATION

This is an information item for the Regional Technical Committee to review.

BACKGROUND

The item was presented and discussed at several Joint Technical Committee and Water Managers' Meetings from March to September 2014, and at the IEUA Board of Directors meeting on June 17, 2015.

Inland Empire Utilities Agency
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Date:	June 17, 2015
To:	The Honorable Board of Directors
Through:	Engineering, Operations, and Biosolids Management Committee *(06/10/15)*
From:	P. Joseph Grindstaff General Manager
Submitted by:	Chris Berch Executive Manager of Engineering/Assistant General Manager Sylvie Lee Manager of Planning and Environmental Resources
Subject:	Recycled Water Program Strategy

RECOMMENDATION

It is recommended that the Board of Directors concur with the findings of the recycled water program as outlined in the Recycled Water Program Strategy.

BACKGROUND

The purpose of the Recycled Water Program Strategy (RWPS) is to update the 2005 Recycled Water Implementation Plan and the 2007 Recycled Water Three Year Business Plan. The primary objective of the RWPS is to update supply and demand forecasts and prioritize projects to maximize the beneficial use of recycled water throughout the year. This is necessary as changes in the region's water resource priorities occur and increased water efficient landscape measures are adopted.

The planning period of the RWPS is through 2035, with a focus on the first ten years. As part of the RWPS, hydraulic modeling was performed for a variety of demand conditions, including changes in direct use and groundwater recharge. The modeling scenarios objectives can be summarized as:

- Achieve maximum beneficial reuse of the recycled water: maximize groundwater recharge to utilize supply when available (off-peak months).
- Identify the capability to increase groundwater recharge if additional supplies are available and/or if direct use demand patterns change.

The proposed RWPS projects address improvements necessary to achieve the goal of maximizing beneficial use of recycled water throughout the year. The recommended RWPS projects focus on either increasing the ability for groundwater recharge, or relieving capacity constraints to meet the demand forecast. A comprehensive list of projects identified from the RWPS is provided as Attachments A and B. The RWPS prioritized projects by placing them into different implementation phases:

- The first and second phases of projects are included in the Agency's Capital Improvement Plan (CIP) through 2035, and are included in the Ten Year Capital Improvement Plant (TYCIP).

- The third and fourth phases of projects identified from the RWPS will be reevaluated as changes in demand occur, or if more recycled water supply is identified. This could either be from reduced direct use demands caused by changes in landscape irrigation or if an external RW supply is provided into the region.

As RWPS updates are performed, the proposed projects included in the Agency's TYCIP will be revised accordingly to reflect the approved RWPS. The RWPS projects were prioritized previously based on commitments received from the Region, such as the 2005 Implementation Plan, 2007 Three Year Business Plan, 2013 Recharge Master Plan Update (RMPU) and previously adopted Agency Ten Year CIP's (TYCIP). At this time, new projects and concepts since previous commitments include initial feasibility studies for evaluating an external RW intertie with Western Riverside County Regional Wastewater Authority and conducting a RW Injection pilot study.

Table 1 identifies the maximum beneficial use that can be achieved with the projects included in the Agency's CIP through 2035. A cost summary of the Agency's CIP through 2035 for the RW Program is presented in Table 2 below. Attachments C and D provide a map identifying the locations of the recommended RWPS projects, with emphasis on the purpose, such as GWR capacity improvements, or improvements to meet direct use demands.

Table 1: RWPS summary of RW Supply and Demands in Acre-Feet per Year

	2015	2020	2025	2030	2035
RW Supply (1, 2)	60,200	64,300	69,700	75,100	79,800
Direct Use (3)	24,655	28,730	30,640	33,650	35,825
Groundwater Recharge (4)	9,700-16,300	10,200-16,200	12,600-19,200	13,800-20,700	14,400-22,600
RW Injection (5)	-	-	-	5,000	5,000
Total Beneficial Reuse	**34,355-40,955**	**38,930 – 44,930**	**43,240 – 49,840**	**47,450 – 59,350**	**50,225 – 63,425**

Notes:

(1) Regional supply per Wastewater Facilities Master Plan TM 4 - Table 4-4, includes **3% loss due to treatment waste streams.**

(2) **Minimum discharge required by SAR Obligation is 16,850 AFY.**

(3) Represents approximately 90% of Member Agency direct use forecast. Planning assumption for increased water efficient landscapes.

(4) Range of **annual** deliveries to **GWR** based upon available reuse supply and basin availability. **Estimated at 6-10 months.**

(5) **Initial planning estimate, to be evaluated at a later time.**

Table 2: Cost summary of Agency's Recycled Water Program CIP through 2035

	Project Source	2015 to 2025 (TYCIP)	2025 to 2035
Direct Use Improvements	RWPS	$6,000,000	$35,800,000
Groundwater Recharge(1,2)	RWPS/RMPU	$8,615,000(2)	$47,800,000
Existing Projects(3)	TYCIP	$13,825,000	$0
Repair and Replacement (R&R)(4)	AMP(4)	$8,905,000	$15,625,000
Operational Needs(5)	TYCIP	$16,275,000	$775,000
Total CIP Cost		**$53,800,000**	**$100,000,000**

Notes:

(1) Includes distribution improvements, IEUA/CBWM cost share projects (Victoria, San Sevaine and RP-3 basin improvement projects).
(2) IEUA/CBWM cost share projects only include the portion of the project cost funded by IEUA; therefore, includes $181k for soft costs
(3) Includes projects from the 2005 RW Implementation Plan, 2007 Three Year Business Plan & FY 14/15 TYCIP carried forward.
(4) Agency's Asset Management Plan.
(5) Including: upgrades needed for reliability, planning, permitting and feasibility studies.

The RWPS will be reevaluated at a minimum once every five years. Additional studies are expected to be performed in the coming years to identify and present changes needed to accommodate the potential shift in recycled water use. A Programmatic Environmental Impact Report (PEIR) will be prepared for the ultimate conditions provided in the RWPS, along with the remainder of the Agency's planning documents such as the Wastewater Facilities Master Plan and the Integrated Resources Plan. When the PEIR is adopted for the Agency's planning documents, staff will bring this RWPS forward for the Board to consider formal adoption.

Development of the Recycled Water Program Strategy is consistent with the IEUA business goal of *Water Reliability*, namely development of new water supplies, recycled water and groundwater recharge.

PRIOR BOARD ACTION

On September 18, 2013, the Board of Directors awarded a Professional Engineering Services Master Contract for the Recycled Water Program Strategy to Stantec Consulting Inc.

IMPACT ON BUDGET

None.

Attachments:

- Attachment A: RWPS Project List
- Attachment B: CIP Forecast through 2035
- Attachment C: RWPS Project Map (2015 – 2025)
- Attachment D: RWPS Project Map (2025 – 2035)
- Recycled Water Program Strategy document can be found at: https://ieua.hostedftp.com/CxHCmCTTSxx5OwosZpImxf1sq

Recycled Water Program Strategy (RWPS)

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

June 2015

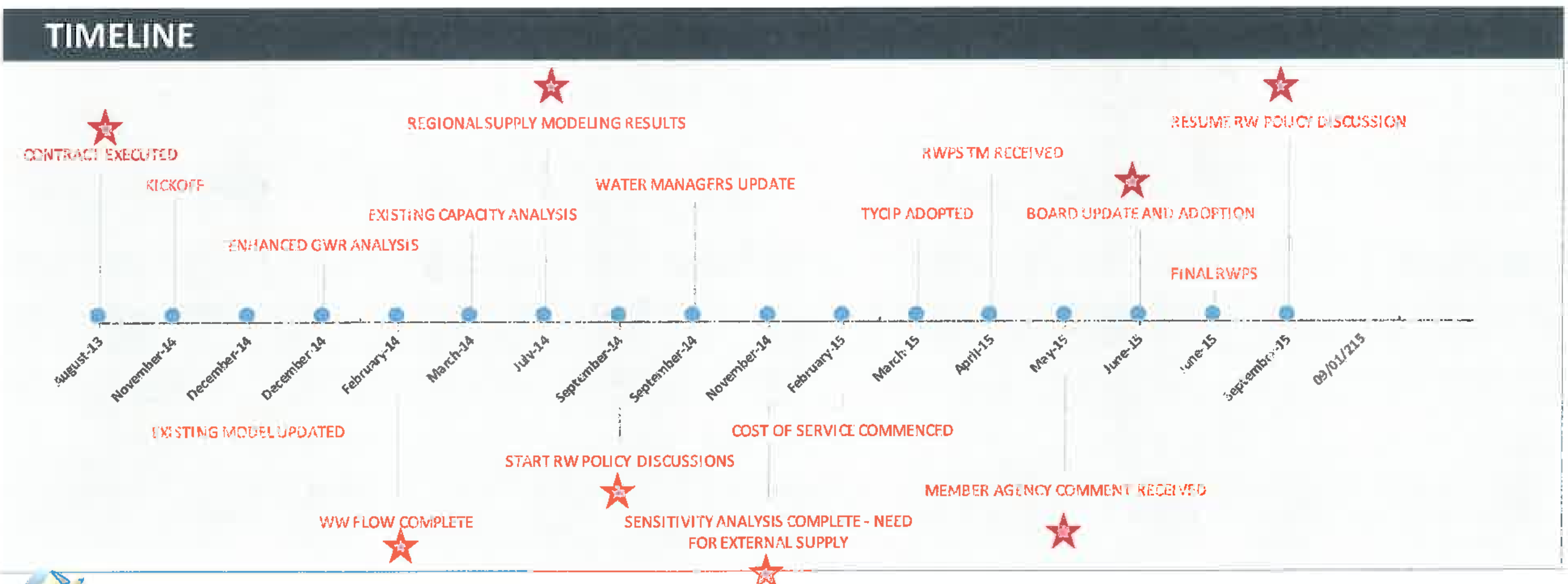
RWPS Overview

- Update 2007 Business Plan & 2005 RW Implementation Plan
- Goal to maximize reuse of RW throughout the year
  - Re-evaluate groundwater recharge system (GWR) system
  - Update recycled water (RW) direct demands
  - Supply vs. demand balance
  - 20-yr planning horizon
  - Identify capital improvement project (CIP) needs

Achieves the Agency's Business Goal Objective of Water Reliability

Timeline of Events

* Approximately 2 year process from Start to Final



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Achieves the Agency's Business Goal Objective of Water Reliability

RWPS Recommendations

- Address system limitations:
  - Pump Station upgrades
  - Pipeline capacity restrictions
- Construct facilities consistent with:
  - Recharge Master Plan Update
  - Projected member agency direct use demand
- Evaluate alternative reuse strategy after completion of Integrated Resources Plan

Achieves the Agency's Business Goal Objective of Water Reliability

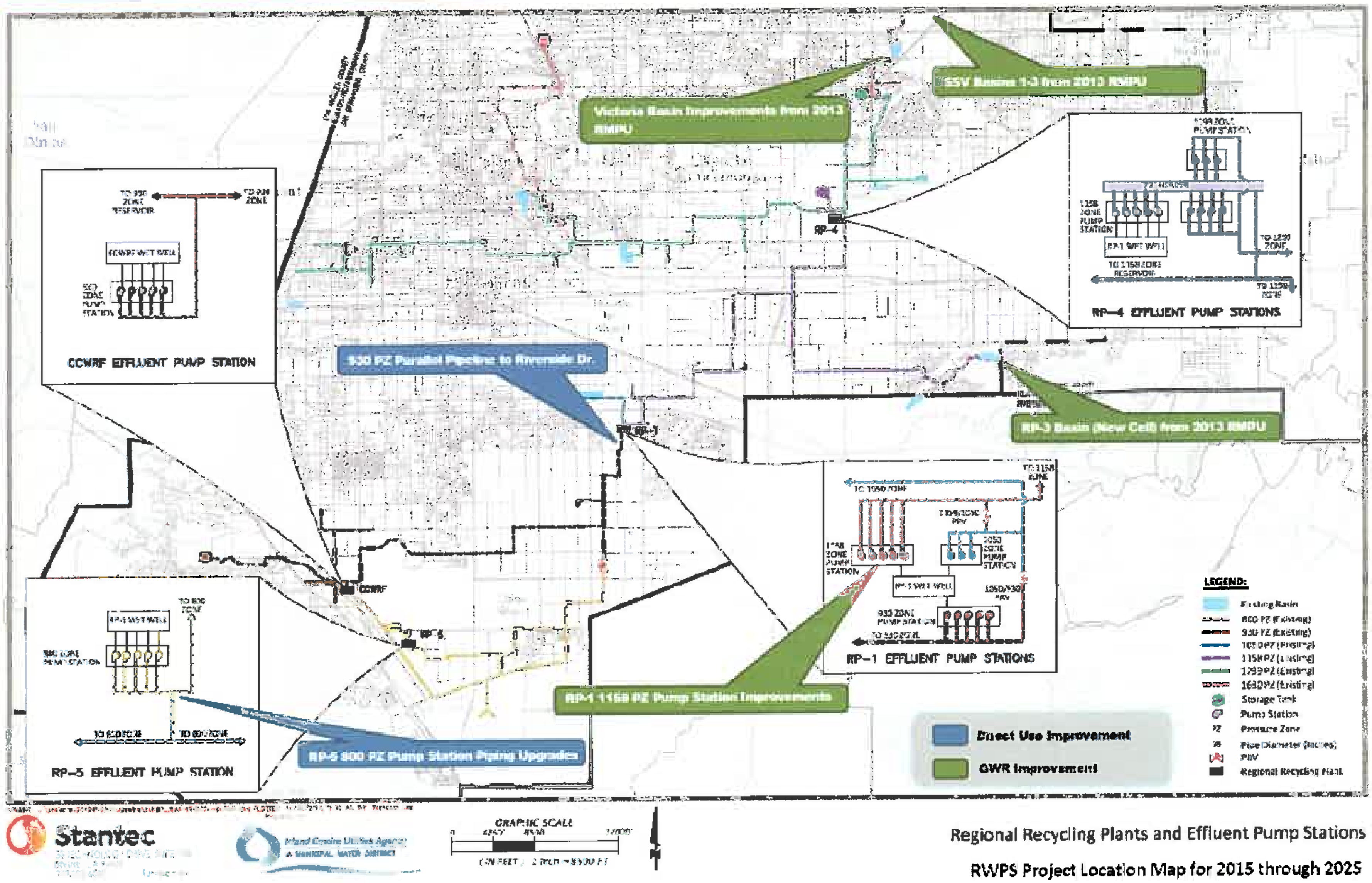
RWPS Results

- Project costs & demands dependent on:
  - Long-term strategy & amount of external supply secured
  - Project cost: $78M - $182 M
  - Beneficial reuse: 58,000 – 63,000 AFY (average)
- Ten Year Capital Improvement Projects (2025):
  - Subset of the RWPS recommendations
  - Direct Use: increase to 27,000 – 31,000 AFY
  - GWR: up to ~19,000+ AFY**
- Program EIR to be established at ultimate buildout

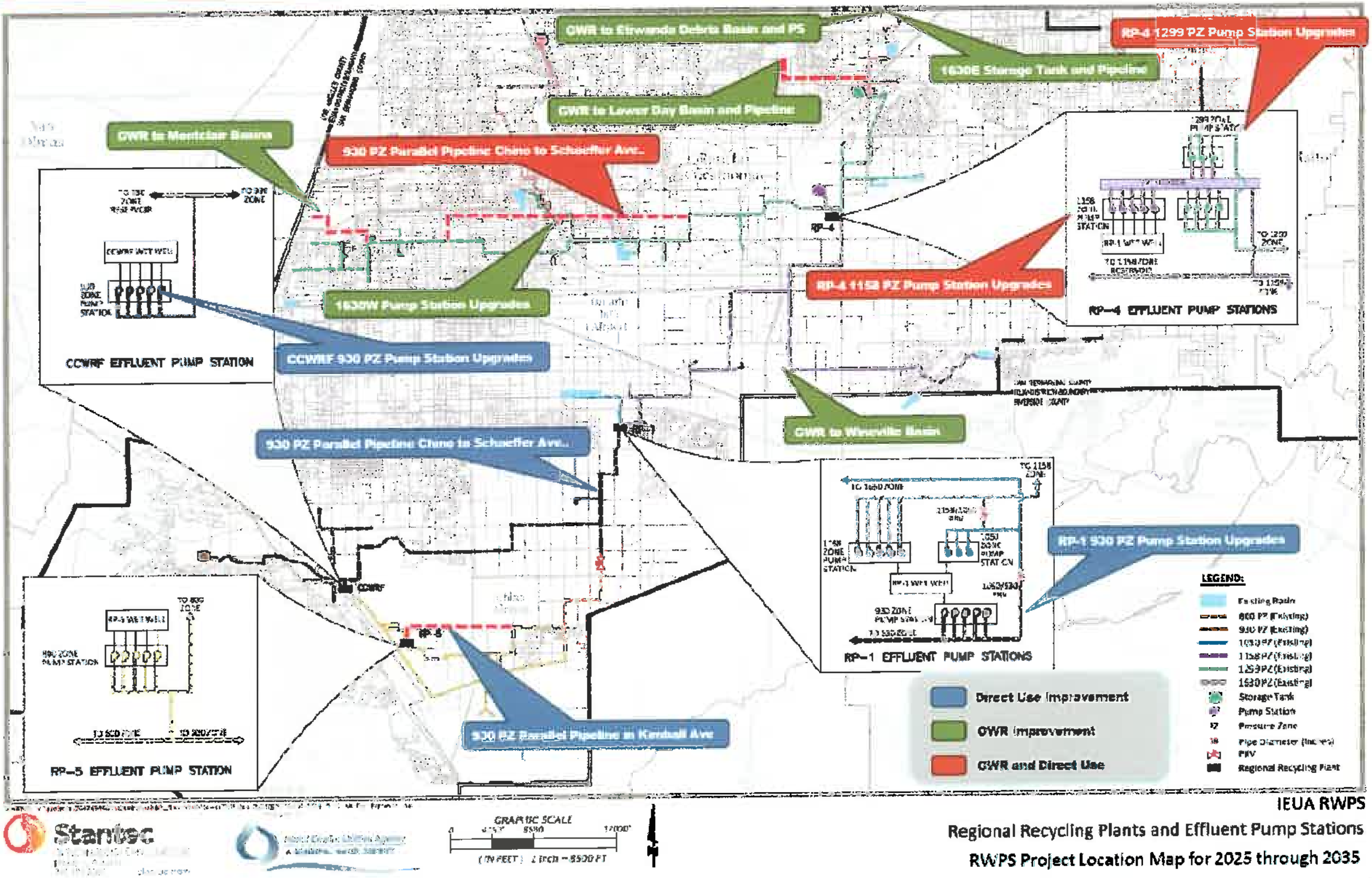
***Pending supply and basin availability*

Achieves the Agency's Business Goal Objective of Water Reliability

RWPS through 2025



RWPS through 2035



IEUA RWPS

Regional Recycling Plants and Effluent Pump Stations

RWPS Project Location Map for 2025 through 2035

Next Steps

- Implement TYCIP projects
- Complete RW policy discussions – Fall 2015
- Complete Integrated Resources Plan – Fall 2015
- Complete Programmatic EIR – Summer 2016
- Update the RWPS every five years – 2020

This project meets the Agency's Business Goal of Water Reliability by maximizing the beneficial reuse of recycled water to enhance reliability and reduce dependence on imported water.

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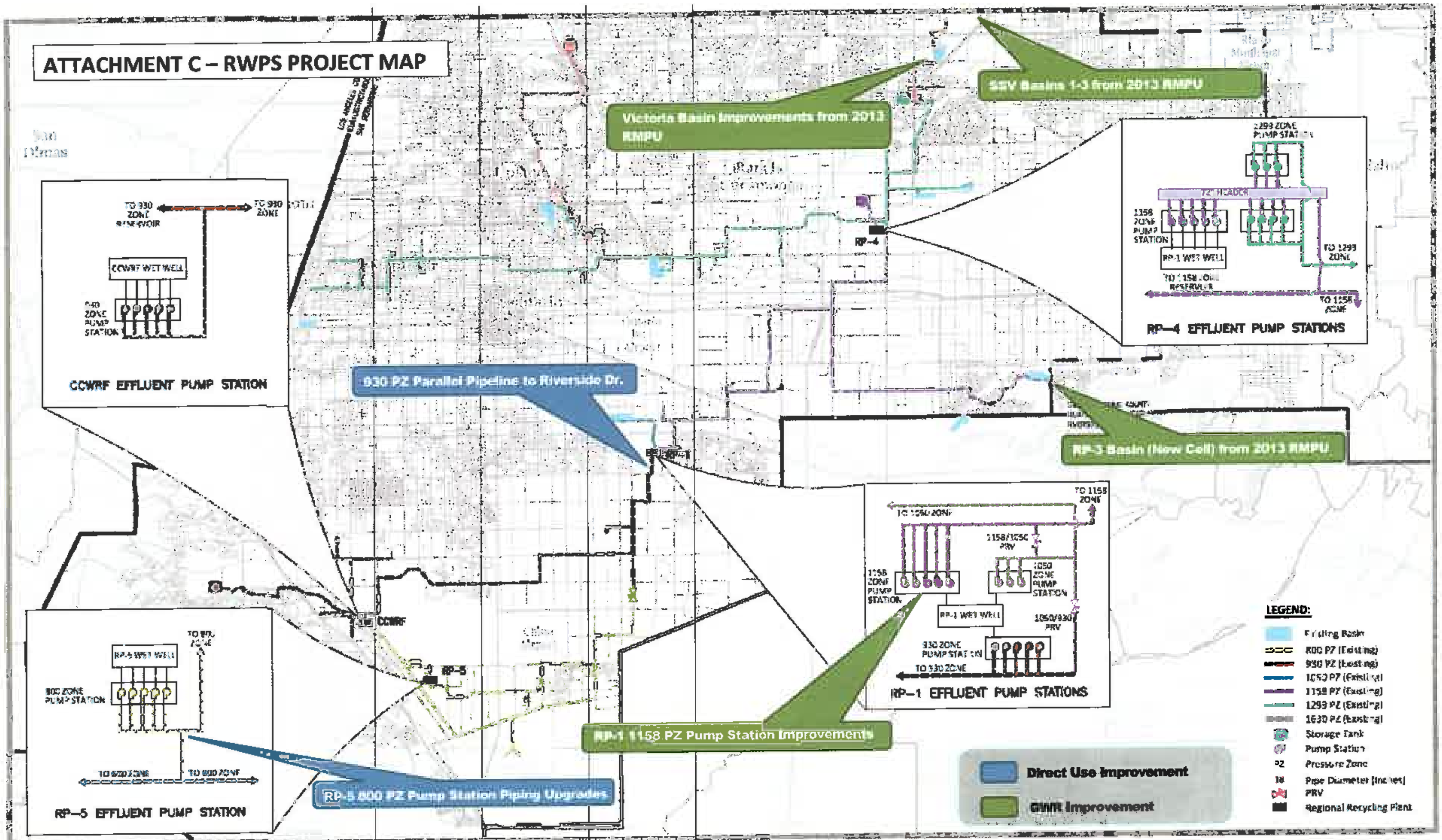
ATTACHMENT A - RWPS PROJECT LIST

Recycled Water Program - Capital Improvement Plan

Implementation Phase	Demand Trigger	Deficiency	Proposed Improvement	Total Estimated Project Cost	Cumulative CIP Costs	GWR Program Improvement	Direct Use Improvement
	Existing Conditions	None	None - Existing	$ -	$ -	$ -	$ -
		Initial Phase of Improvements - Total Cost		**$ -**	**$ -**	**$ -**	**$ -**
1	Velocity Deficiency for Direct Use	Increase flow from RP-5 RW Pump Station	Discharge header modifications	$ 1,000,000	$ 1,000,000	$ -	$ 1,000,000
1	GWR to SSV Basin 1-3	2013 Recharge Master Plan Update - Basin modifications	Basin improvements and pipeline extension	$ 3,000,000	$ 4,000,000	$ 3,000,000	$ -
1	Increase GWR to Victoria Basin	2013 Recharge Master Plan Update - Basin modifications	Victoria basin modifications	$ 65,000	$ 4,065,000	$ 65,000	$ -
1	GWR to RP-3 New Cell	2013 Recharge Master Plan Update - Basin modifications	RP-3 New Cell	$ 1,650,000	$ 5,715,000	$ 1,650,000	$ -
1	930 PZ Max Summer Direct Use	Existing 30-inch pipeline undersized from RP-1 to Riverside Dr.	42-inch 930 PZ Parallel Pipeline	$ 5,000,000	$ 10,715,000	$ -	$ 5,000,000
1	Op. Flexibility and Increased GWR	Insufficient capacity for 1630E PZ GWR flows	RP-1 1158 Pump Station Upgrades	$ 3,900,000	$ 14,615,000	$ 3,900,000	$ -
		Phase 1 Improvements (2015 thru 2025) - Total Cost		**$ 14,615,000**	**$ 14,615,000**	**$ 8,615,000**	**$ 6,000,000**
2	930 PZ Max Summer Direct Use	Existing pipeline undersized from Chino to Schaeffer Ave.	New 930 PZ Parallel Pipeline	$ 10,000,000	$ 24,615,000	$ -	$ 10,000,000
2	GWR to Etiwanda Debris Basin	System expansion to serve GWR Basin	16-inch 1630E Pipeline and Booster PS	$ 4,000,000	$ 28,615,000	$ 4,000,000	$ -
2	Max Summer Direct Use & GWR	Deficient 1299 PZ transmission mains	Parallel 1299 PZ Pipeline and Extension	$ 9,000,000	$ 37,615,000	$ 4,500,000	$ 4,500,000
2	GWR to Wineville Basin	System Expansion to serve Wineville Basin	Wineville Basin Pipeline	$ 1,000,000	$ 38,615,000	$ 1,000,000	$ -
2	Increase Op. Storage	System optimization for GWR flows, system expansion to serve GWR	36-inch 1630E Pipeline to 1630E Tank	$ 5,000,000	$ 43,615,000	$ 5,000,000	$ -
2	Increase Op. Storage	System optimization for GWR flows, system expansion to serve GWR	Conversion of 1630E Storage Tank and Pipeline	$ 9,000,000	$ 52,615,000	$ 9,000,000	$ -
2	GWR to 1630W PZ	System expansion to serve GWR Basins	1630W Booster Pump Station Capacity Upgrades	$ 3,000,000	$ 55,615,000	$ 3,000,000	$ -
2	GWR to LowerDay	System expansion to serve Lower Day Basin	24-inch Pipeline to Lower Day	$ 9,000,000	$ 64,615,000	$ 9,000,000	$ -
2	GWR to LowerDay	Potential GWR Expansion - Basin modificaiton	Lower Basin (RMPU)	$ 2,500,000	$ 67,115,000	$ 2,500,000	$ -
2	Velocity Deficiency for Direct Use	Existing pipeline undersized in Bickmore and Kimball parallel	24-inch 800 PZ Pipeline in Kimball Ave	$ 9,500,000	$ 76,615,000	$ -	$ 9,500,000
2	GWR to Montclair Basins	System expansion to serve Montclair Basin	30-inch 1299 PZ Pipeline to Montclair Basins	$ 5,500,000	$ 82,115,000	$ 5,500,000	$ -
2	GWR Improvements	Upsize existing basin turnouts	Increase flow control valve capacity	$ 1,500,000	$ 83,615,000	$ 1,500,000	$ -
2	Max Summer Direct Use & GWR	Pump capacity exceeded to serve peak direct use and future GWR	RP-4 1158 and 1299 PZ Pump Station Capacity Upgrades	$ 5,600,000	$ 89,215,000	$ 2,800,000	$ 2,800,000
2	Max Summer Direct Use	Pump capacity exceeded to serve peak direct use demand periods	RP-1 930 PZ Pump Station Capacity Upgrades	$ 5,500,000	$ 94,715,000	$ -	$ 5,500,000
2	Max Summer Direct Use	Pump capacity exceeded to serve peak direct use demand periods	CCWRF Pump Station Capacity Upgrades	$ 3,500,000	$ 98,215,000	$ -	$ 3,500,000
		Phase 2 Improvements (2025 thru 2035) - Total Cost		**$ 83,600,000**	**$ 98,215,000**	**$ 47,800,000**	**$ 35,800,000**
3	Future Basin	System expansion to serve College Heights Basin	36-inch 1630W Pipeline in Foothill Blvd	$ 14,070,000	$ 112,285,000	$ 14,070,000	$ -
3	Future Basin	System expansion to serve College Heights Basin	College Hts East	$ 500,000	$ 112,785,000	$ 500,000	$ -
3	Future Basin	System expansion to serve College Heights Basin	College Hts West	$ 500,000	$ 113,285,000	$ 500,000	$ -
3	Max Summer Direct Use	Capacity in the 1158 PZ and 1299 PZ	New 1158 to 1299 Booster Pump Station	$ 3,800,000	$ 117,085,000	$ 1,900,000	$ 1,900,000
3	Max Summer Direct Use	Capacity in the 1158 PZ and 1299 PZ	24-inch 1158 PZ Pipeline	$ 16,000,000	$ 133,085,000	$ 8,000,000	$ 8,000,000
3	Max Summer Direct Use	Capacity in the 1158 PZ and 1299 PZ	4.0 MG 1158 PZ Storage Tank	$ 9,000,000	$ 142,085,000	$ 4,500,000	$ 4,500,000
3	Max Summer Direct Use	Capacity in the 1158 PZ and 1299 PZ	16-inch 1299 PZ Pipeline	$ 3,600,000	$ 145,685,000	$ -	$ 3,600,000
		Phase 3 Improvements - Total Cost		**$ 47,470,000**	**$ 145,685,000**	**$ 29,470,000**	**$ 18,000,000**
4	Future Basin	System expansion to serve Grove Basin	12-inch to Grove Basin	$ 270,000	$ 145,955,000	$ 270,000	$ -
4	GWR to Jurupa (1158 PZ)	System expansion to serve GWR Basin	36-inch Pipeline in 1158 PZ	$ 11,940,000	$ 157,895,000	$ 11,940,000	$ -
4	GWR to Jurupa (1158 PZ)	System expansion to serve GWR Basin	30-inch Pipeline in Jurupa Street to Jurupa Basin	$ 3,290,000	$ 161,185,000	$ 3,290,000	$ -
4	GWR to Jurupa (1158 PZ)	System expansion to serve GWR Basin	20-inch Pipeline in Jurupa Street	$ 530,000	$ 161,715,000	$ 530,000	$ -
4	Future Basin	Potential GWR Expansion	Upland Basin demand	$ 750,000	$ 162,465,000	$ 750,000	$ -
4	Max Summer Direct Use	Pipeline undersized for demands condition	24-inch 1050 PZ Parallel Pipeline	$ 990,000	$ 163,455,000	$ -	$ 990,000
4	Max Summer Direct Use	Pump capacity exceeded to serve peak direct use demand periods	RP-1 930 Pump Station Capacity Upgrades	$ 1,160,000	$ 164,615,000	$ -	$ 1,160,000
4	Max Summer Direct Use	Pump capacity exceeded to serve peak direct use demand periods	RP-1 1050 Pump Station Capacity Upgrades	$ 1,020,000	$ 165,635,000	$ -	$ 1,020,000
		Phase 4 Improvements - Total Cost		**$ 19,950,000**	**$ 165,635,000**	**$ 16,780,000**	**$ 3,170,000**
				$ 165,635,000		**$ 102,665,000**	**$ 62,970,000**

ATTACHMENT B - CIP FORECAST THROUGH 2035

Project No.	ID	Fund	Project Description	Total Project Cost	2015-2025 RWPS	2015-2025 Direct Use	2015-2025 GWR + RMPU Cost Share	2015-2025 RMPU	2015-2025 Existing	2015-2025 R&R	2015-2025 Operational Needs	2025-2035 RWPS	2025-2035 RMPU	2025-2035 Existing	2025-2035 R&R	2025-2035 Operational Needs
RW15004	1	RW	Lower Day RMPU Project (100% cbwm)	$ -	$ -											
TBD-17	2	RW	RMPU Construction Costs (100% cbwm)	$ -	$ -											
TBD	3	RW	Agencywide GWR Environmental Permits (50% cbwm)	$ 50,000	$ -				$ 50,000							
TBD	4	RW	Ely Basin Turnout Remote Control Upgrades	$ 600,000	$ -				$ 600,000							
TBD	5	RW	Prado Basin Adaptive Management Plan Monitoring & Report (95% cbwm)	$ 300,000	$ -						$ 300,000					
TBD	6	RW	RW Asset Management (50% cbwm)	$ 1,250,000	$ -					$ 625,000					$ 625,000	
RW15003	7	RW	RMPU Soft Costs (95% cbwm)	$ 181,000	$ -			$ 181,000								
EN13040	8	WC	Prado Dechlor Communication System	$ 181,735	$ -				$ 181,735							
EN06025	9	WC	Wineville Extension Pipeline Segment A	$ 2,150,000	$ -				$ 2,150,000							
EN12016	10	WC	North CIM Lateral	$ 210,000	$ -				$ 210,000							
EN13001	11	WC	San Sevaine Improvements (50% cbwm)	$ 3,000,000	$ 3,000,000		$ 3,000,000									
EN13022	12	WC	930 RW Reservoir	$ 50,000	$ -				$ 50,000							
EN13023	13	WC	930 Pressure Zone Pipeline	$ 50,000	$ -				$ 50,000							
EN13041	14	WC	RP-5 RW PS Process Control Sys Migration	$ 280,000	$ -					$ 280,000						
EN13045	15	WC	Wineville Extension Pipeline Segment B	$ 1,650,000	$ -				$ 1,650,000							
EN13048	16	WC	Second 12kV Feeder to TP-1	$ 1,500,000	$ -						$ 1,500,000					
EN14042	17	WC	RP-1 1158 Pump Station Improvements	$ 3,900,000	$ 3,900,000		$ 3,900,000									
EN14043	18	WC	800 Zone Capacity Implementation (RP-5 Pump Station Piping Upgrades)	$ 1,000,000	$ 1,000,000	$ 1,000,000										
EN15002	19	WC	1158 Reservoir Site Cleanup Project	$ 500,000	$ -					$ 500,000						
EN15050	20	WC	1630 W PS Improvements (Surge Protection & VFD Replacement)	$ 1,400,000	$ -				$ 1,400,000							
EN19003	21	WC	RP-1 Parallel Outfall Pipeline from RP-1 to Riverside Dr	$ 5,000,000	$ 5,000,000	$ 5,000,000										
TBD-21	22	WC	RP-1 Utility Water Flow Meter	$ 300,000	$ -						$ 300,000					
TBD	23	WC	930 to 800 West CCWRF PRV	$ 600,000	$ -						$ 600,000					
TBD-26	24	WC	1299 pressure zone pipeline surge tank	$ 400,000	$ -				$ 400,000							
TBD	26	WC	RW Pressure Sustaining Valve	$ 850,000	$ -				$ 850,000							
TBD	27	WC	1299 Pressure Zone Pipeline Capacity Upgrades	$ 9,000,000	$ -							$ 9,000,000				
TBD-28	28	WC	Recycled Water Pump Station Emergency Generation Upgrade	$ 6,000,000	$ -						$ 6,000,000					
TBD	29	WC	Wineville Basin Pipeline	$ 1,000,000	$ -							$ 1,000,000				
WR15019	30	WC	RP-3 Basin Improvements (50% cbwm)	$ 1,650,000	$ 1,650,000		$ 1,650,000									
WR15020	31	WC	Victoria Basin Improvements (50% cbwm)	$ 65,000	$ 65,000		$ 65,000									
WR15021	32	WC	Napa Lateral/SB Speedway	$ 6,000,000	$ -				$ 6,000,000							
EN09007	34	WC	1630 East Reservoir & Segment B Pipeline	$ 14,000,000								$ 14,000,000				
TBD	35	WC	RP-4 1158 and 1299 Pump Station Upgrades	$ 5,600,000								$ 5,600,000				
EN20002	36	WC	Etiwanda Debris Basin Pipeline and Pump Station	$ 4,000,000								$ 4,000,000				
TBD	37	WC	RP-1 Parallel Outfall Line (Chino to Schaeffer)	$ 10,000,000								$ 10,000,000				
TBD	38	WC	2025-2030 Recycled Water Projects	$ 20,000,000								$ 20,000,000				
TBD	39	WC	2030-2035 Recycled Water Projects	$ 20,000,000								$ 20,000,000				
EN12019	41	WC	GWR & RW SCADA Communication System Upgrades (50% cbwm)	$ 232,500	$ -				$ 232,500							
TBD-08	42	WC	WC Emergency O&M Projects	$ 10,000,000	$ -					$ 5,000,000					$ 5,000,000	
TBD-07	43	WC	WC OE Projects	$ 1,000,000	$ -						$ 500,000					$ 500,000
EN14044	44	WC	RW Hydraulic Modeling for FY 14/15	$ 50,000	$ -						$ 50,000					
TBD-109	45	WC	RW Hydraulic Modeling	$ 550,000	$ -						$ 275,000					$ 275,000
TBD	46	WC	RW Program Strategy	$ 500,000	$ -						$ 500,000					
TBD	47	WC	WC Planning Documents	$ 1,000,000	$ -						$ 1,000,000					
TBD	48	WC	WC Asset Management	$ 12,500,000	$ -					$ 2,500,000					$ 10,000,000	
TBD	49	WC	RW Injection Pilot Study	$ 500,000	$ -						$ 500,000					
TBD	50	WC	WRCWRA Planning Study	$ 1,000,000	$ -						$ 1,000,000					
TBD	51	WC	WRCWRA (purchase costs)	$ 3,750,000	$ -						$ 3,750,000					
			Total CIP Costs	$ 153,800,000	$ 14,615,000	$ 6,000,000	$ 8,615,000	$ 181,000	$ 13,824,235	$ 8,905,000	$ 16,275,000	$ 83,600,000	$ -	$ -	$ 15,625,000	$ 775,000
								53,800,235						$100,000,000		



Stantec

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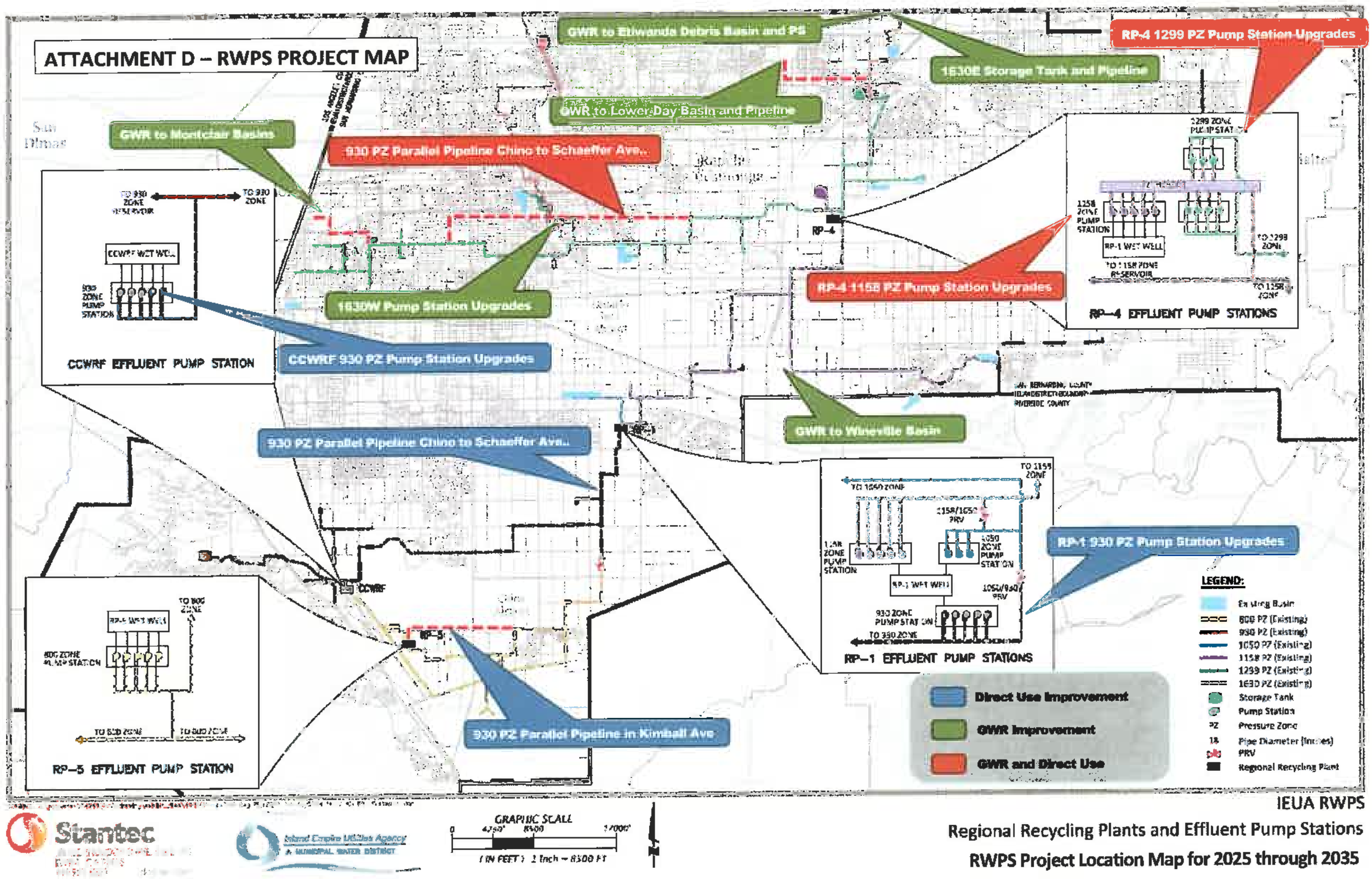
Regional Recycling Plants and Effluent Pump Stations

RWPS Project Location Map for 2015 through 2025


ATTACHMENT D – RWPS PROJECT MAP
GWR to Etiwanda Debris Basin and PS
RP-4 1299 PZ Pump Station Upgrades
1630E Storage Tank and Pipeline
GWR to Lower Day Basin and Pipeline
GWR to Montclair Basins
930 PZ Parallel Pipeline Chino to Schaeffer Ave.
1630W Pump Station Upgrades
RP-4 1158 PZ Pump Station Upgrades
CCWRF 930 PZ Pump Station Upgrades
GWR to Wineville Basin
930 PZ Parallel Pipeline Chino to Schaeffer Ave.
RP-1 930 PZ Pump Station Upgrades
930 PZ Parallel Pipeline in Kimball Ave
CCWRF EFFLUENT PUMP STATION
RP-4 EFFLUENT PUMP STATIONS
RP-1 EFFLUENT PUMP STATIONS
RP-5 EFFLUENT PUMP STATION
RP-4
RP-5
CCWRF
LEGEND:
Existing Basin
800 PZ (Existing)
930 PZ (Existing)
1050 PZ (Existing)
1158 PZ (Existing)
1299 PZ (Existing)
1630 PZ (Existing)
Storage Tank
Pump Station
Pressure Zone
Pipe Diameter (inches)
PRV
Regional Recycling Plant
Direct Use Improvement
GWR Improvement
GWR and Direct Use
GRAPHIC SCALE
(IN FEET) 1 inch = 8500 FT
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IEUA RWPS
Regional Recycling Plants and Effluent Pump Stations
RWPS Project Location Map for 2025 through 2035

RECEIVE AND FILE

4F

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: July 30, 2015

To: Regional Technical Committee

From: Inland Empire Utilities Agency

Subject: Wastewater Facilities Master Plan

RECOMMENDATION

This is an information item for the Regional Technical Committee to review.

BACKGROUND

This item was presented, as part of a more extensive presentation, at the Inland Empire Utilities Agency Joint Technical Committee & Water Managers' meeting on October 22, 2014. The item was presented as an informational item to the Regional Technical Committee on October 30, 2014, and was presented at the IEUA Board of Directors meeting on July 15, 2015.

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date:	July 15, 2015
To:	The Honorable Board of Directors
Through:	Engineering, Operations & Biosolids Committee *(07/08/15)*
From:	P. Joseph Grindstaff General Manager
Submitted by:	Chris Berch CB Executive Manager of Engineering/Assistant General Manager
	Sylvie Lee Manager of Planning and Environmental Resources
Subject:	Wastewater Facilities Master Plan

RECOMMENDATION

It is recommended that the Board of Directors concur with the findings of the Wastewater Facilities Master Plan.

BACKGROUND

The purpose of the Wastewater Facilities Master Plan (WFMP) was to update the previous WFMP prepared in 2002 and updated in 2007 where the ultimate influent flow was estimated at 202 million gallons per day (mgd) and 110 mgd, respectively. Due to changes in economic conditions, water use efficiency practices, discharge permit requirements, and population growth projections, the influent wastewater flow and loading assumptions were re-evaluated to determine future facilities expansion needs. Based on the growth projections in the service area as identified in the Integrated Resources Plan (IRP), the revised ultimate influent flow was projected to be 88 mgd. Although the new influent flow was much less than previously reported, the wastewater strength had increased since 2002. In addition, the WFMP analyzed flow diversion alternatives in order to maximize recycled water supply in correlation with the Recycled Water Program Strategy program.

The planning period of the WFMP was for year 2035 and the ultimate year 2060. Capital projects were developed based on the expansion needs for each RWRP for the next 20 years. Table 1 identified the major capital projects required to meet projected capacities.

Table 1 – Major Capital Projects for next 20 Years

Project	Purpose	Estimated Cost ($million)
Whispering Lakes Pump Station Expansion	Increase pumping capacity for future wastewater flows to RP-1	$6.1
RP-1 Solids Treatment Expansion	Increase solids treatment capacity for existing and future flows	$24.9
RP-1 Liquid Treatment Expansion and Primary Effluent Equalization Elimination	Increase liquid treatment capacity for future flows; eliminate primary flow equalization for other uses	$122.4
RP-4 Liquid Treatment Expansion	Increase liquid treatment capacity for future flows	$6.6
RP-5 Solids Handling Facilities	Relocate RP-2 solids handling to RP-5; increase solids treatment capacity for existing and future flows; demolish RP-2 facilities	$157.3
RP-5 Liquid Treatment Expansion	Increase liquid treatment capacity for future flows	$125.5
Montclair Interceptor Upgrades	Upsize four segments to mitigate deficiencies	$25.4

Preliminary design efforts for the expansion of RP-1 and RP-5 will begin in FY 2015/16 to identify treatment options consistent with the ultimate facility layouts provided within the WWFMP.

The WWFMP will be reevaluated once every ten years, or as major changes are identified. A Programmatic Environmental Impact Report (PEIR) will be prepared for the ultimate conditions provided in the WWFMP, along with the remainder of the Agency's planning documents such as the Recycled Water Program Strategy, Energy Management Plan and the Integrated Resources Plan. When the PEIR is adopted for the Agency's planning documents, staff will bring this WWFMP forward for the Board to formally adopt.

Development of the Wastewater Facilities Master Plan is consistent with the IEUA business goal of *Wastewater Management* where systems and facilities will be maintained to meet essential service demands and to protect public health and the environment.

PRIOR BOARD ACTION

On September 18, 2013, the IEUA Board of Directors awarded a Professional Engineering Services Master Contract for the Wastewater Facilities Master Plan to CH2M Hill.

IMPACT ON BUDGET

There is no impact on budget.

Attachments:

- Attachment A: CIP Forecast through 2035
- Wastewater Facilities Master Plan document can be found at: http://www.ieua.org/category/reports/other-reports/

Wastewater Facilities Master Plan (WFMP)

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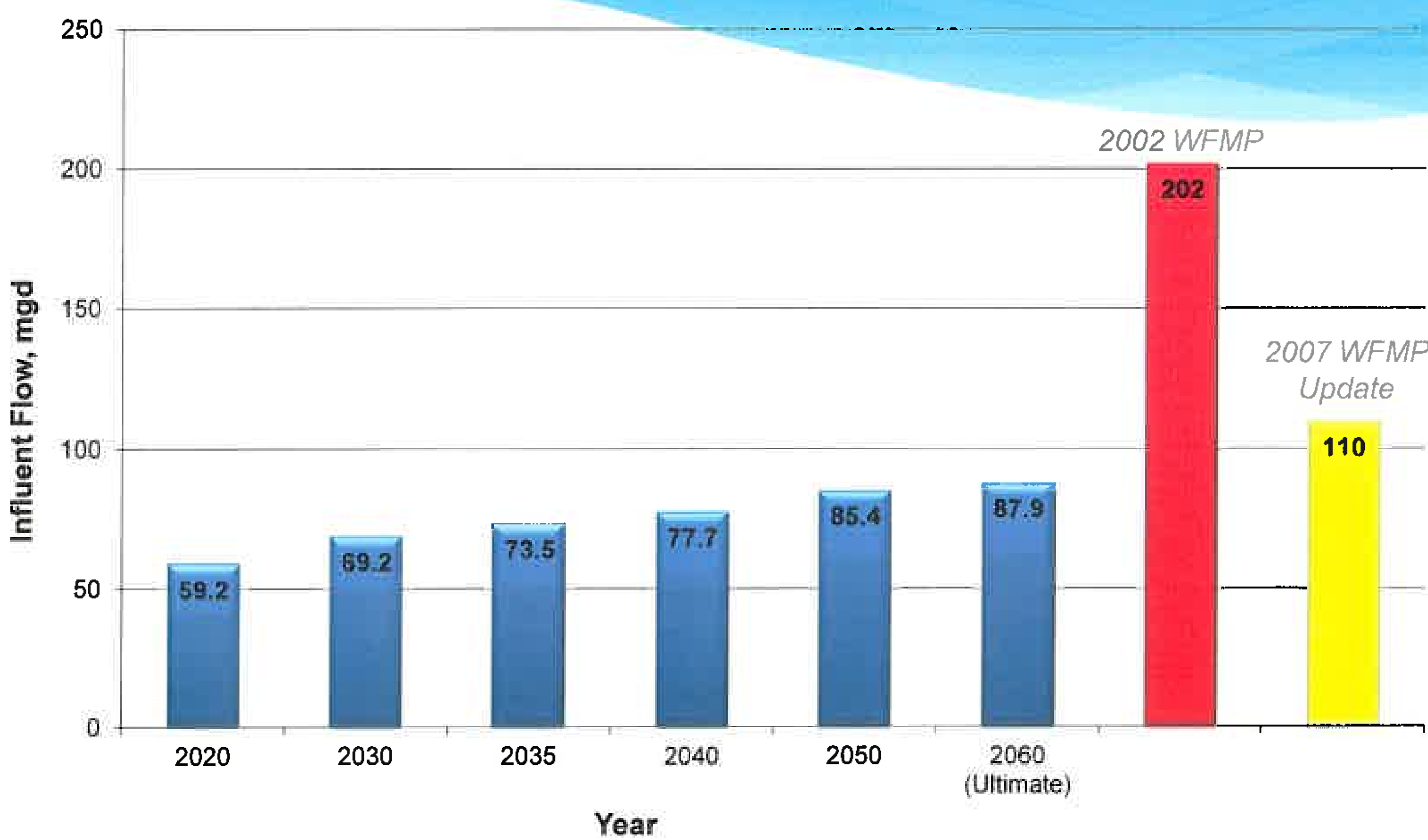
June 2015

WFMP Overview

- Update 2002 WFMP
- Re-evaluate sewer flow and loading projections
- Analyze Regional Water Recycling Plant (RWRP) capacities
- Develop loading factors in treatment capacity
- Investigate flow diversion alternatives to maximize recycled water supply
- Identify capital improvement project (CIP) needs

Projected Influent Flows



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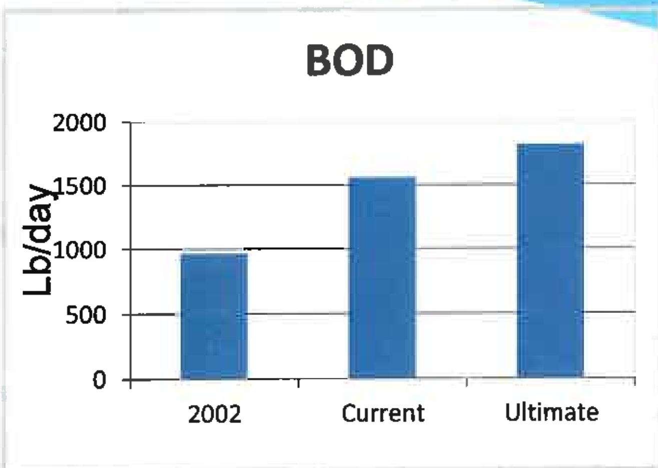
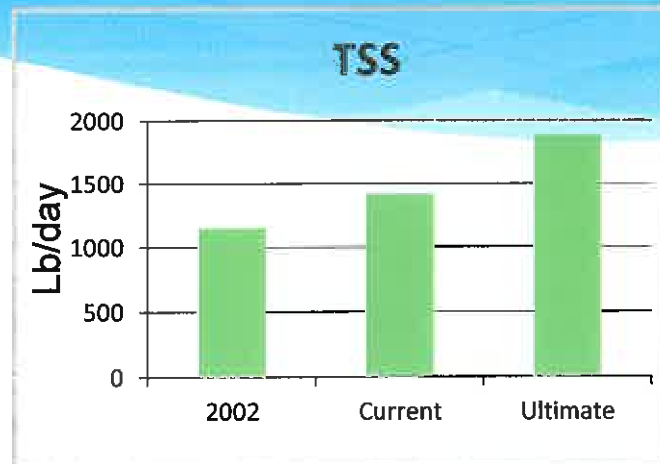
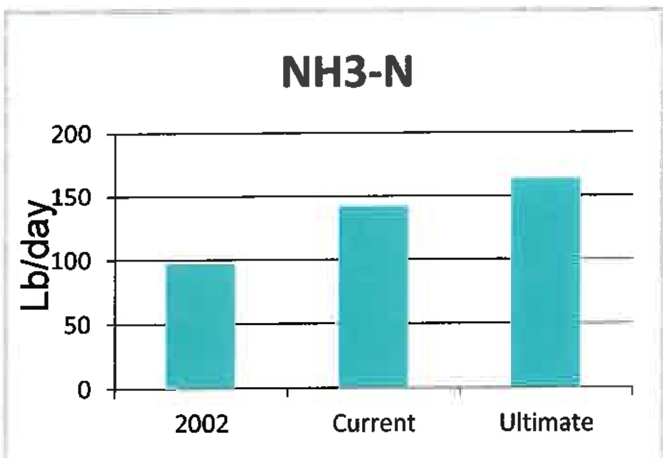
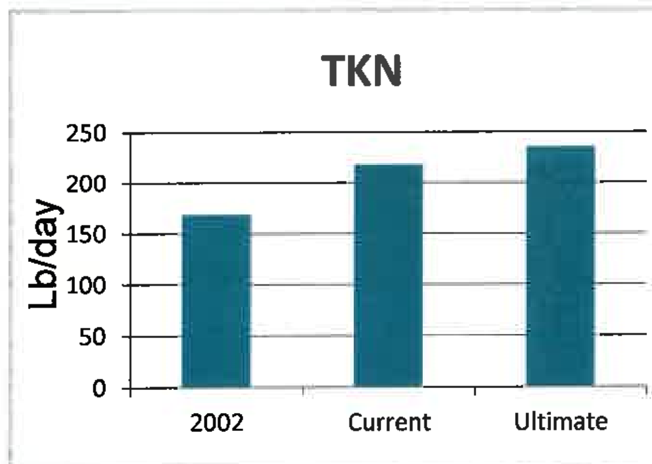
Influent Wastewater Loadings





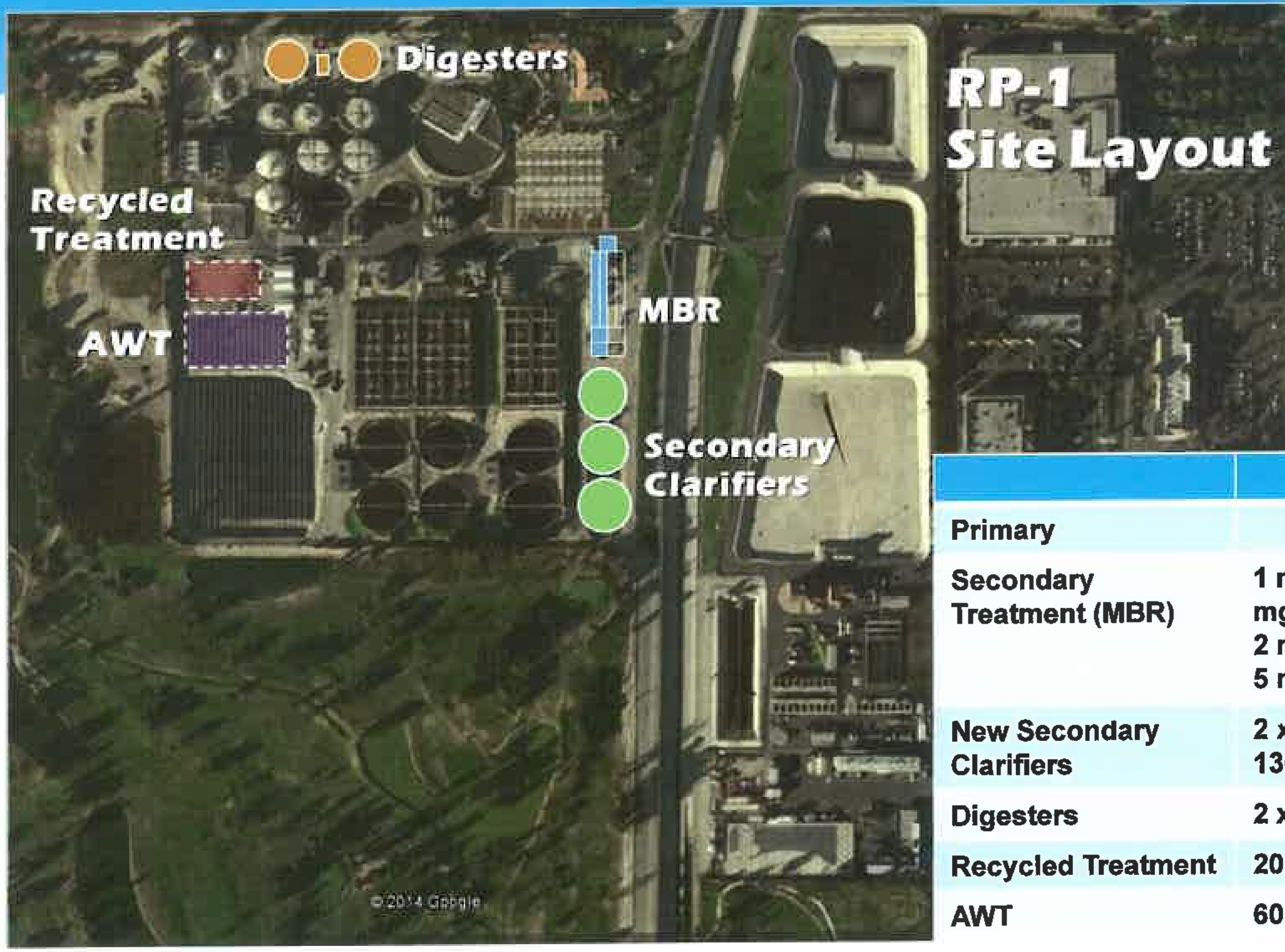




WFMP Results

- Major capital projects to meet future influent flow
  - RP-1 solids and liquids treatment expansions - $147 M
  - RP-5 solids and liquids treatment expansions - $283 M
  - RP-4 liquid treatment expansion - $7 M
  - Montclair Interceptor pipeline upsizing - $25 M
  - Whispering Lakes Pump Station expansion - $6 M

RP-1 Ultimate Site



	Size
Primary	---
Secondary Treatment (MBR)	1 module (TIN = 8 mg/L) 2 modules (TIN = 5 mg/L)
New Secondary Clarifiers	2 x 120 ft & 1 x 130 ft
Digesters	2 x 110 ft
Recycled Treatment	20,000 sf
AWT	60,000 sf

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RP-5 Ultimate Site

Solids Handling	Size
Gravity Thickener	45' Diam
DAFT	40' Diam
Digesters	5 x 90 ft
High Pressure Gas Storage	35' Diam
Dewatering	100' x 150'
Biofilter	60' x 80'

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Achieves the Agency's Business Goal Objective of Wastewater Management

WFMP Next Steps

- Implement TYCIP projects
  - RP-1 & RP-5 Expansion Pre-Design — FY 15/16
  - RP-5 Solids Treatment Facility — FY 16/17
  - RP-5 Liquid Treatment Expansion — FY 17/18
  - Whispering Lakes PS Improvements — FY 22/23
  - RP-1 Treatment Expansion — FY 23/24
- Complete Programmatic EIR — Summer 2016

This project meets the Agency's Business Goal of Wastewater Management by maintaining systems and facilities to meet essential service demands and to protect public health and the environment.

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