Standard Operating Procedure for Local Limits Submittal Evaluation

PG Environmental
Created on behalf of the California State Water Resources Control Board

April 2019

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Appendices

1. Introduction

To protect its operations and to ensure that its discharges comply with State and Federal requirements, a publicly-owned treatment works (POTW) will design its local limits based on site-specific conditions. Among the factors a POTW should consider in developing local limits are the following: the POTW's efficiency in treating wastes; its history of compliance with its NPDES permit limits; the condition of the water body that receives its treated effluent; any water quality standards that are applicable to the water body receiving its effluent; the POTW's retention, use, and disposal of sewage sludge; and worker health and safety concerns. The General Pretreatment Regulations require the following:

- POTWs that are developing pretreatment programs must develop and enforce specific limits on prohibited discharges or demonstrate that the limits are not necessary [40 Code of Federal Regulations (CFR) 403.8(f)(4)].
- POTWs that have approved pretreatment programs must continue to develop and revise local limits as necessary [40 CFR 403.5(c)(1)].
- POTWs that do not have approved pretreatment programs must develop specific local limits if pollutants from non-domestic sources result in interference or pass through and such occurrence is likely to recur [40 CFR 403.5(c)(2)].

U.S. EPA and the States have approved more than 1,400 POTW pretreatment programs. Each program must develop, implement, and enforce technically based local limits. Because most of the POTWs that require pretreatment programs now have local limits, only a few new programs are approved each year. Work on local limits continues, however, because POTWs with approved programs must periodically review these local limits. U.S. EPA regulations require that POTWs with approved programs must "provide a written technical evaluation of the need to revise local limits under 40 CFR 403.5(c)(1), following permit issuance or reissuance" [40 CFR 122.44(j)(2)(ii)]. Additionally, U. S. EPA recommends that Control Authorities review the adequacy of local limits if current wastewater treatment plant performance fails or will fail to attain applicable NPDES, State, or local permit requirements or other operational objectives, including water quality objectives of receiving waters; and if the performance shortcomings may be reasonably attributed to pass through or interference caused by a pollutant of concern (POC). Finally, Control Authorities may find it beneficial to reevaluate their local limits when a change in POTW operations results in a significant change in operational objectives; when the POTW experiences a significantly different influent flow or pollutant characteristics; or when a significant alteration of key environmental criteria occurs.

This document outlines the process for evaluating a local limits submittal from a (POTW) pretreatment program. California State Water Resources Control Board (Water Board) staff should review the submittal to ensure that it contains all the information necessary to justify the calculations and allocations proposed by the POTW. Detailed information on how to calculate local limits may be found in U.S. EPA's *Local Limits Development Guidance* (2004)[1]. Example evaluation reports are included as Appendices C and D to this standard operation procedure (SOP). A local limits review checklist is also provided to assist the review process as Appendix A. Water Board staff should consult the *Standard Operating Procedure for Approval of New*

[1] See www3.epa.gov/npdes/pubs/final_local_limits_guidance.pdf.

Program Submittals and Program Modification Standard Operating Procedure (April 2019) for more information on approval procedures once it has been determined that a local limits submittal meets all regulatory requirements.

2. Identifying Pollutants of Concern (POC)

The POTW's local limits submittal should be reviewed to ensure that it identifies all potential pollutants of concern. At a minimum, the following parameters should be considered potential pollutants of concern:

- 15 national pollutants of concern, as identified in U.S. EPA's *Local Limits Development Guidance* (2004).
- Parameters with established effluent limits in the POTW's National Pollutant Discharge Elimination System (NPDES) permit.
- Parameters that have a "monitoring only" requirement in the NPDES permit.
- Pollutants that have caused operational problems at the POTW or in the collection system.
- Pollutants that can be linked to POTW failure of a whole effluent toxicity (WET) test.
- Pollutants regulated by 40 CFR Part 503 standards for the use or disposal of sewage sludge.
- Pollutants that may have the potential to exceed water quality criteria, including any California Toxic Rule parameters.
- Any additional site-specific pollutants of concern, including any pollutants that may be present in industrial user discharges that are not included in one of the categories above.

While the POTW is not required to develop a local limit for each of these parameters, the POTW should consider the need to develop a local limit for each of these parameters. The local limits submittal should document the POTW's rationale for not calculating a local limit for each potential pollutant of concern that was excluded from the calculations.

3. Monitoring Data

The submittal should include a description of the monitoring plan used to gather the analytical data used in the local limit calculations. The reviewer should evaluate the monitoring plan to ensure that an adequate number of samples have been collected at appropriate locations throughout the POTW and collection system. The monitoring plan should ensure collection of samples that are representative of weather conditions that affect the POTW, and should account for hydraulic detention [retention] times. In addition, the monitoring plan should include sampling that is random and representative of different days, months, and industrial discharger production schedules. If the POTW has a previously approved monitoring plan, the reviewer should verify that the monitoring plan was followed.

The POTW's submittal should include analytical results for all samples taken in support of local limits development. Any outliers in the data should be noted in the POTW's submittal along with a brief explanation or justification for the exclusion of all outliers. The reviewer should verify that outliers were excluded from use in the POTW's local limits calculations. Additionally, the reviewer should verify that the submittal contains a sound rationale for any outliers excluded from the calculations.

Analytical results in the POTW's submittal should be based on appropriate analytical methods specified in 40 CFR Part 136. The reviewer should verify that approved analytical methods were used for all samples.

4. Removal Efficiencies

The POTW's submittal should include appropriate removal efficiencies for each parameter that is included in the local limits' calculations. The reviewer should verify that the removal efficiency calculations are consistent with one of the methodologies specified in U.S. EPA's *Local Limits Development Guidance* (2004). The three methodologies listed in in U.S. EPA's *Local Limits Development Guidance* (2004) are the average daily removal efficiency, mean removal efficiency, and the decile method.

U.S. EPA's *Local Limits Development Guidance* (2004) provides recommendations for situations where a few or most of the sampling results are below the minimum level. For example, where the POTW is unable to obtain adequate sample data to calculate a removal efficiency, book values may be used. The reviewer should ensure that the submittal specifies the source(s) of all book values. Additionally, the reviewer should verify that the most stringent book values are used in the calculations. Appendix R of U.S. EPA's *Local Limits Development Guidance* (2004) contains removal efficiency data for several parameters.

5. Maximum Allowable Headworks Loading (MAHL) Calculations

The reviewer should verify that the submittal includes an allowable headworks loading (AHL) calculation for all appropriate criteria for the POTW. These criteria should be protective of all pollutants of concern identified in Section 2 of this SOP and typically include water quality-based limits, inhibition for both primary and secondary treatment, land application of biosolids, and worker health and safety issues. The reviewer should verify that the most stringent AHL is selected as the MAHL.

The reviewer should utilize the U.S. EPA Region 5 spreadsheet (Spreadsheet to Determine Local Limits)[2] to check the POTW's MAHL calculation. The reviewer should compare the MAHL calculated with the spreadsheet with the MAHL calculated by the POTW. If the two MAHLs are substantially different, the reviewer should note the potential reason(s) for the differences in the MAHL.

6. Maximum Allowable Industrial Loading (MAIL) Calculations

The submittal should state the growth allowance and safety factor used for each parameter. The reviewer should use best professional judgement to confirm that the growth allowance and safety factor used in the calculations are appropriate for each parameter.

If the reviewer is new to the pretreatment program and best professional judgement is unavailable, U.S. EPA generally recommends a 10% safety factor. Additionally, the reviewer

[2] See https://www.waterboards.ca.gov/water_issues/programs/npdes/pretreat.html

should consult with U.S. EPA's *Local Limits Development Guidance* (2004) to determine other elements that affect the safety factor including, but not limited to, the quality and variability of the POTW's data, past compliance issues, and the number and size of each industrial user (IU) with respect to the POTW's total flow rate. Expansion and growth allowances are generally considered for planned increases in discharges to the POTW from either industrial or domestic sources. Additionally, the reviewer should verify that the MAIL calculations account for loadings from hauled waste if the POTW is accepting hauled waste discharges.

7. Industrial User Allocation

The POTW's submittal should state the allocation method(s) used for each parameter. If multiple allocation methods are used, the submittal should state which allocation method is used for each parameter. The reviewer should verify that any allocation method chosen could not result in industrial user loadings that cumulatively exceed the MAIL.

Section 6.5 of EPA's *Local Limits Development Guidance* discusses the need for a "common sense assessment" to be conducted for the POTW's proposed local limits. The reviewer should ensure that the submittal addresses any concerns that may arise from this "common sense assessment". If the review reveals that the limits are not technologically achievable or there is not an analytical method in 40 CFR Part 136 that would show compliance with the proposed local limit, the reviewer may request that the POTW evaluate an alternate allocation method for the parameter(s). Additional reasons for failure of the "common sense assessment", as well as practical solutions, are in included in Section 6.5 of EPA's *Local Limits Development Guidance.*

8. Report Summary

After completing a review of the POTW's submittal, the reviewer should determine whether the proposed local limits are approvable. If the submission meets all requirements, the reviewer should refer to the *Standard Operating Procedure for Approval of New Program Submittals and Program Modification Standard Operating Procedure* (April 2019) for the correct approval procedure. If the submittal contains errors or omissions that would prevent the reviewer from approving the proposed local limits, the reviewer should prepare a report summarizing the errors or omissions that must be corrected. A local limits submittal evaluation report template and example reports are provided as Appendices B - D.

Appendix A: Local Limits Review Checklist

Local Limits Review Checklist
POTW/Program Name:

NPDES Permit No.:

- Pollutants of Concern (POC) Identified
  - ☐ 15 National Pollutants of Concern <u>(Arsenic, Cadmium, Chromium, Copper, Cyanide, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Zinc, BOD_5, TSS, and Ammonia)</u>
  - ☐ NPDES Pollutants (including parameters limited in NPDES permit, NPDES "monitoring only" pollutants, pollutants that have caused POTW violations or operational problems, or any pollutant responsible for failure of WET test)
  - ☐ Biosolids regulated pollutants (including those necessary for protecting future disposal options), as identified in 40 CFR 503.13.
  - ☐ Water quality criteria pollutants (including any California Toxic Rule parameters)
  - ☐ Any site-specific pollutants of concern (including any pollutants expected to be present in industrial user discharges not covered above)

- Monitoring Data
  - ☐ Follows approved monitoring plan
  - ☐ Includes sample results for all appropriate POCs
    - Paired POTW influent and effluent data (or appropriate book values)
    - Aerobic/Anaerobic Digester
    - Biosolids to Disposal
    - Activated sludge
    - Domestic/Uncontrollable sites
    - Significant Industrial Users (SIUs)
    - Hauled waste
  - ☐ Excludes outliers
  - ☐ Appropriate analytical methods used, samples analyzed within holding times, etc.

- Removal Efficiencies
  - ☐ Calculated using appropriate analytical data OR uses appropriate book values
  - ☐ Includes primary, secondary, and tertiary removal efficiencies

- Maximum Allowable Headworks Loading (MAHL) Calculations
  - ☐ Uses appropriate Water-Quality Based (WDR/NPDES) limits where appropriate (including both chronic and acute criteria)
  - ☐ Uses appropriate inhibition values for both primary and secondary treatment
  - ☐ Uses appropriate biosolids criteria based on disposal option
  - ☐ Protects worker health and safety

- Maximum Allowable Industrial Loading (MAIL) Calculations
  - ☐ Based on the most stringent MAHL criteria
  - ☐ Takes any hauled waste into account
  - ☐ Uses appropriate safety factor

- ☐ Uses appropriate growth allowance
- ☐ Considers all background sources

- Allocation Method ______________________________
  - ☐ Method(s) chosen is protective, enforceable, and reasonable
  - ☐ States appropriate limit duration and units
  - ☐ Are limits achievable?
  - ☐ Can compliance be determined?

Date of Approval Authority Review: ____

Date of Local Limit Approval by Approval Authority: __________________________________

Approval Authority Reviewer: ____

Date of Public Notice by Control Authority: ____

Date Limits Adopted by Control Authority: ____

Appendix B: Local Limits Verification Report Template

[Control Authority] Local Limits

Verification Report

Discharger: [Control Authority]
[NPDES Permit or WDR No.]
[Control Authority County]

Location: [Control Authority Address]

Date: [Date of Report]

Reviewed By: [Reviewer Name and Title]

Contents

Attachments

Attachment A	[A copy of the POTW's local limits submittals]
Attachment B	[The reviewer's calculations created using U.S. EPA Region 5's spreadsheets]

1. Executive Summary

This section should include a brief summary of the reviewer's findings.

2. Deficiency #1

The reviewer should include a section for each deficiency identified during the review of the POTW's local limits submittal. If there are multiple deficiencies of a single category (i.e. identification of pollutants of concern, calculation of removal efficiencies, etc.), they may be addressed in the same section of the report. Alternatively, the report may address all the deficiencies related to a single parameter in one section.

3. Deficiency #2

(See Section 2 above.)

4. General Report Deficiencies

This section may be used to summarize any deficiencies in the report that do not directly impact the POTW's local limits calculations. These are items that should be addressed in future revisions to the report. Appropriate items for this section would include incorrect references, typographical errors, and other errors or omissions that could create confusion during the public review period.

Appendix C: Example Local Limits Report

(Malaga County Water District)

Malaga County Water District Local Limits

Verification Report

Discharger:	Malaga County Water District NPDES Permit No. CA0084239 Fresno County
Location:	3749 South Maple Avenue, Fresno, CA 93725
Date:	May 26, 2017
Reviewed By:	Yatasha Moore, EPA Contractor

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Attachments

1. Executive Summary

The Central Valley Regional Water Quality Control Board (Water Board) conducted a review of the Malaga County Water District (District) *Local Discharge Limits Development* (local limits report) dated July 26, 2016. The District was issued a National Pollutant Discharge Elimination System (NPDES) Permit No. CA0084239 (Order No. R5-2014-0145) and Cease and Desist Order No. R5-2014-0146 (CDO) in 2014. The CDO required the District to evaluate the need to revise its local limits. This verification report presents the conclusions of the review of the District's local limits report.

The District owns and operates the Malaga County Water District Wastewater Treatment Facility (WWTF). The WWTF receives wastewater from the unincorporated community of Malaga, serving a population of approximately 1,300. The WWTF has an average dry weather design capacity of 1.2 million gallons per day (MGD). The WWTF treatment consists of three screw pumps (one in service at a time,), a mechanically cleaned bar screen, an aerated grit chamber, one primary clarifier (DAF unit), three activated sludge aeration tanks, and three secondary clarifiers. Tertiary treatment includes filtration ("fuzzy" filter) and disinfection with ultraviolet light. Per the Waste Discharge Requirements (WDR), up to 0.85 MGD of undisinfected, secondary treated effluent can be disposed to groundwater via 23 acres of disposal ponds, and up to 0.45 MGD of disinfected, tertiary treated effluent can be discharged to the Fresno Irrigation District (FID) Central Canal. Per the local limits report, secondary solids are aerobically digested and dewatered in drying beds prior to being hauled offsite for land application by a contract hauling company. However, the District's February 2017 electronic self-monitoring report (eSMR) states that solids are currently being disposed via landfill.

Based on the local limits report reviewed, the reviewer made the following findings:

- The District did not include an explanation for all parameters that were not included as pollutants of concern. (Section 2)
- It is recommended that the District evaluate nitrate plus nitrite (as N) as a pollutant of concern. (Section 3)
- The water quality limits used in the calculations for several parameters are based on a higher hardness concentration than the one used in developing the WDR. (Section 4)
- The District did not determine removal efficiencies in a consistent manner. (Section 5)
- The District should review the grit return sample data and determine if including this grit return stream in the influent sampling point results in local limits calculations that are less stringent than if this stream was not included. (Section 6)
- At least two industrial users have the potential to exceed the proposed local limits and must be evaluated for the need to be permitted as significant industrial users (SIUs). (Section 7)
- The District did not provide justification that the proposed allocation method would not result in exceedance of the maximum allowable industrial loading (MAIL). (Section 8)
- It is recommended that the District evaluate ethylbenzene as a pollutant of concern. (Section 9)

- It is recommended that several narrative errors be corrected in order to clarify the local limits report. (Section 10)

2. Identification of Pollutants of Concern

The local limits report details a screening process from the 2004 *Local Limits Development Guidance* manual to determine which parameters are pollutants of concern. This screening process evaluates the POTW WWTF sampling data to determine the pollutants of concern.

Based on the screening process, Table 2-6 of the District's local limits report states that chromium is a pollutant of concern due to a sludge concentration that is more than one-half the applicable sludge disposal limit. However, there is not currently a limit for chromium in title 40 of the Code of Federal Regulations (40 CFR) Part 503. The District does have an existing chromium local limit and chromium is one of the 15 national pollutant of concerns identified in the *Local Limits Development Guidance* manual. Therefore, chromium should still be considered a pollutant of concern, but Table 2-6 should be revised to remove the statement that the chromium sludge concentration is more than half the sludge disposal limit.

Section 5 of the local limits report states that benzene is not a pollutant of concern "because benzene was never detected in the influent or effluent of the water plant." However, the report does not specifically state why phenols is not a pollutant of concern. Additionally, silver was not detected in the influent or effluent, but a local limit was still proposed for this parameter. In order to make the local limits report more defensible, the District should include in the local limits report the rationale for why a local limit for silver is still being proposed.

3. Nitrate plus Nitrite (as N)

The District's local limits report did not include nitrate plus nitrite (as N) as a pollutant of concern. However, the WDR contains an effluent limit of 10 milligram per liter (mg/L) for nitrate plus nitrite (as N) and a groundwater limit of 10 mg/L for nitrate (as N). The data in Appendix A of the local limits report indicates that the average effluent concentration of nitrate was 17.95 mg/L. Because the District has a WDR limit for nitrate plus nitrite (as N) and the effluent concentration of Nitrate is greater than this effluent limit, it is recommended that the District evaluate nitrate plus nitrite (as N) as a pollutant of concern and consider developing a local limit for this parameter.

4. Metals Controlling Limits

Table 2-5 (Summary of Controlling Limits) states that the controlling limits for lead, nickel, selenium, silver, and zinc are based on the California Toxics Rule 4-day average concentration for freshwater aquatic life. The fact sheet for the WDR states that the hardness of the receiving stream is 85 mg/L. However, the water quality limits used in the local limits report are based on a hardness concentration of 100 mg/L which results in higher water quality limits. 40 CFR 403.5(c) requires the development of local limits to prevent the discharge of pollutants that may cause pass through or interference. Because the California Toxics Rule 4-day average concentrations for freshwater aquatic life for these metal parameters are dependent on the hardness of the receiving stream, the District is required to either include a justification for why the higher hardness limit was used or use the lower hardness concentration identified in the WDR in determining the water quality limits for these parameters.

5. Removal Efficiencies

A summary of the removal efficiencies used in the calculations was included in the local limits report at Table 4-1, which includes a lower removal efficiency of 0% for Boron. However, the data in Appendix A indicates that the removal efficiency for Boron is 14%. Using the lower removal efficiency of 0% results in a local limit that is more stringent. However, it is recommended that the local limits report document the rationale for using this lower removal efficiency.

Additionally, the local limits report did not consistently state the removal efficiency for parameters that were not detected in either the influent or the effluent of the POTW WWTF. Silver was not detected in any of the influent or effluent samples, and the calculations used a removal efficiency of 100%. However, influent and effluent samples for the parameters benzene and phenols were also all below detectable limit (BDL), but the removal efficiency for these two parameters in the local limits report is 0%. It is recommended that the District document the rationale for using a removal efficiency of 100% for silver while using a removal efficiency of 0% for benzene and phenols.

6. Sampling

Section 4 of the local limits report states that the influent sampling location at the POTW WWTF is "a combination of raw influent with return water from the grit removal return flow," and grit removal return is approximately 37% of the total headworks flow. The District has sampled the grit return stream, but these sample results were not available at the time the local limits report was submitted. The District should review the grit sample data and determine if including this grit return stream in the influent sampling point results in local limits calculations that are less stringent than if this stream was not included.

7. Industrial Users

Section 5.2 states that samples at two industrial users, Caps Sandblasting and Island Pools, had higher than domestic concentrations for electroconductivity and biochemical oxygen demand (BOD). However, the report did not include the electroconductivity and BOD concentration values for these two industries, and District has not classified these two industries as significant industrial users. 40 CFR Part 403.08(f)(2)(i) requires the District to identify and locate all possible significant industrial users (SIUs). Without the actual measured values, the reviewer is unable to determine the potential for exceeding any local limit. Therefore, the District is required to evaluate Caps Sandblasting and Island Pools to determine if they should be classified as SIUs due to potential to exceed the local limits for electroconductivity and BOD.

8. Allocation Method

Section 5 of the local limits report discusses the proposed allocation method for the MAIL. However, Section 5.3.1 states that the District did not set aside any allocation for a growth allowance. While the current POTW WWTF flow rate is less than 50% of the design flow and substantial growth is not currently anticipated, significant increases in the loadings to the POTW WWTF, from either existing industrial users or residential growth, could result in loadings to the POTW WWTF that exceed the MAHL. It is strongly recommended that the District perform a yearly evaluation of the calculations in the local limits report to ensure that the calculations are still protective of the POTW WWTF and recalculate local limits if loadings exceed 80% of the MAHL or design flow.

Additionally, Section 5.9 discusses a change in allocation for batch dischargers and small dischargers. While the increased limits for batch dischargers will be evaluated at least yearly, the local limits report did not state that the increased limit for small dischargers would be periodically reviewed. Additionally, the local limits report did not include calculations showing that the proposed increase for small dischargers of 5 times the local limit would not cause the POTW WWTF to exceed the MAHL. 40 CFR Part 403.5(c) requires the development of local limits to prevent the discharge of pollutants that will cause pass through or interference, and Section 6.4 of the *Local Limits Development Guidance* manual discusses various ways to allocate available loadings to industrial users. The District is required to provide documentation showing that the increased limits for small dischargers will not cause the POTW WWTF to exceed the MAHL, and it is strongly recommended that the District review these calculations at least yearly.

The submittal also included an Excel file of the supporting calculations. This file included a spreadsheet of industrial user allocations. However, the industries listed in this tab are not the same industries listed in Table 1-1 of the local limits report and the total flow from all industries on this tab exceeds the total flow to the POTW WWTF. The District is required to show that the total allocations to all industrial users will not cause an exceedance of the MAHL.

9. Fume toxicity

Section 5.7.1 states "There were two POCs identified in Table 2-5 that have fume toxicity exposure limits that indicate they may create a toxicity exposure issue for collection system workers. The three POCs were chloroform, ethylbenzene, and toluene." However, Table 2-5 of the report did not include ethylbenzene as a pollutant of concern, and there were no calculations for an ethylbenzene local limit. It is recommended that the District consider evaluating ethylbenzene as a pollutant of concern.

10. General Report Deficiencies

In addition to the comments above, the local limits report contained several general reporting errors. These items do not impact the District's ability to adopt the local limits, but they should be addressed in future revisions to the report.

1. Section 4.4 states that inhibition calculations are based on "Table 4-1 from the EPA *Local Limits Development Guidance* (2004) manual." However, Table 4-1 of this document is titled "Minimum Recommended Sampling Day for Initial Local Limits Development," and inhibition data is listed in Appendix G.
2. Table 5-1 (Comparison of MAHLs with Average Headworks Loadings) states that the average influent concentration of MBAS is 60% of the MAHL. However, the calculations

in Table 19 of Appendix A indicate that the average influent concentration of MBAS is 65.77% of the MAHL.

3. Table 5-2 (Residential and Background Pollutant Averages) lists the residential and background pollutant averages for cadmium, lead, nickel, and silver as 0.00 mg/L due to rounding. However, these parameters were actually detected during sampling.
4. The calculations in Appendix A included an averaged pH value. However, pH is a logarithmic parameter and cannot be averaged.

Attachment A Malaga County Water District Local Limits Evaluation Report (July 2016)

Local Discharge Limits Development

Malaga, California

July 26, 2016

Date Signed 07/26/16

Date Signed 07/26/16

Prepared for:

Malaga County Water District

Prepared by:

Provost & Pritchard Consulting Group
Fresno, California

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ABBREVIATIONS

ACGIH .... American Conference of Governmental Industrial Hygienists
AHL .... Allowable Headworks Loading
BOD .... Biochemical Oxygen Demand
CFR .... Code of Federal Regulations
CTR .... California Toxics Rule
EPA .... United States Environmental Protection Agency
FOG .... Fats, Oils, and Grease
GPD .... Gallons Per Day
HEM .... N-Hexane Extractable Material (EPA Method 1664)
IPP .... Industrial Pretreatment Program
IU .... Industrial User
MAHL .... Maximum Allowable Headworks Loading
MAIL .... Maximum Allowable Industrial Loading
MGD .... Million Gallons per Day
NIOSH .... National Institute for Occupational Safety and Health
OSHA .... Occupational Safety and Health Administration
POC .... Pollutant of Concern
PPB .... Parts Per Billion
RWQCB .... Regional Water Quality Control Board
SIU .... Significant Industrial User
STEL .... Short Term Exposure Limit

TSS .... Total Suspended Solids
TWA-TLV .... Threshold Limit Value – Time Weighted Average
WDR...Waste Discharge Requirements
WQ .... Water Quality
WQS...Water Quality Standard
WWTF..Wastewater Treatment Facility
*.. Multiplication

EXECUTIVE SUMMARY

The Malaga County Water District (District) has an adopted Industrial Pretreatment Program (December 9, 2014). As such, the District is required to maintain and enforce local limits on the significant industrial users that discharge to the District's wastewater treatment facility. The existing local limits were developed and adopted in 2004. The Regional Water Quality Control Board is requiring the District to re-evaluate its local limits.

A list of potential pollutants of concern was developed based on available sampling and treatment facility data. A sampling plan was developed, approved, and implemented to collect additional data necessary to perform the local limits evaluation. Using the information collected, the local limits were evaluated. The results of this evaluation are summarized in Table ES-1.

Table ES-1: Local Limits Summary

Pollutant	Existing Local Limit	Calculated Local Limit	Allocation Method	Proposed Local Limit
Aluminum	5 mg/L	1.65 mg/L	Uniform	1.65 mg/L
Arsenic	5 mg/L	0.01 mg/L	Uniform	0.01 mg/L
Barium	10 mg/L	Not needed	Uniform	None
Benzene	0.02 mg/L	Not needed	Uniform	None
Boron	8 mg/L	0.94 mg/L	Uniform	0.94 mg/L
Cadmium	0.1 mg/L	0.01 mg/L	Uniform	0.01 mg/L
Chromium	5 mg/L	0.04 mg/L	Uniform	0.04 mg/L
Copper	5 mg/L	0.07 mg/L	Uniform	0.07 mg/L
Iron	1 mg/L	None	Uniform	None
Lead	5 mg/L	0.01 mg/L	Uniform	0.01 mg/L
Mercury	0.2 mg/L	0.002 mg/L	Uniform	0.002 mg/L
Nickel	5 mg/L	0.12 mg/L	Uniform	0.12 mg/L
Selenium	1 mg/L	0.001 mg/L	Uniform	0.001 mg/L
Silver	5 mg/L	0.13 mg/L	Uniform	0.13 mg/L
Zinc	5 mg/L	0.28 mg/L	Uniform	0.28 mg/L
Phenols	1 mg/L	None	Uniform	None
Oil & Grease	100 mg/L	333 mg/L	Uniform	200 mg/L
BOD_5	1000 mg/L	915 mg/L	Uniform	900 mg/L
TSS	1000 mg/L	571 mg/L	Uniform	570 mg/L
Ammonia	None	15.59 mg/L	Uniform	15.59 mg/L
EC	850 umhos/cm	850 umhos/cm*	Uniform	850 umhos/cm*
MBAS	None	1.85 mg/L	Uniform	1.85 mg/L
Cyanide	None	0.02 mg/L	Uniform	0.02 mg/L
Molybdenum	None	0.11 mg/L	Uniform	0.11 mg/L
Chloride	None	167 mg/L	Uniform	167 mg/L

* Interim limit

1 INTRODUCTION

The Malaga County Water District operates a wastewater treatment facility (WWTF) that collects the municipal wastewater generated from the unincorporated community of Malaga. The WWTF treats typical domestic wastes as well as waste generated from commercial and industrial users. Several of the industrial users served by the WWTF meet the definition of a Significant Industrial Users (SIUs) as defined by the United States Environmental Protection Agency (EPA) in 40 CFR 403.3. SIUs are defined as:

- Industries subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR chapter I, subchapter N;
- Any industry discharging an average of 25,000 gallons per day (gpd) or more of process wastewater;
- Any industry that contributes a waste stream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the WWTF; or
- Any industry designated by the Control Authority to have a reasonable potential to adversely affect the WWTF's operation.

Table 1-1 lists the current SIUs, the reason they are considered SIUs, flow rates, and pollutants of concern.

Table 1-1: Current SIUs

Name	SIU Reason	Avg. Flow (mgd)	Pollutants of Concern
Air Products	Discharge volume	0.034	EC, Iron, Barium, Boron, Aluminum, Molybdenum, Nitrate, Chloride
PPG (Pittsburgh Paint and Glass)	Discharge volume	0.065	EC, Iron, Barium, Boron, Aluminum, Nitrate, Chloride
Rio Bravo	Discharge volume	0.110	EC, Iron, Barium, Boron, Aluminum, Zinc, Nitrate, Chloride
ADM Stratas	Potential to adversely affect WWTF's operation	0.009	EC, BOD_5, TSS, Chloride, MBAS, Aluminum, Boron, Iron, Oil & Grease
RockTenn	Potential to adversely affect WWTF's operation	0.008	EC, BOD_5, TSS, Chloride

Kinder Morgan	Potential to adversely affect WWTF's operation (batch discharge)	0.02 (per batch)	EC, Ammonia, BOD_5
Georgia Pacific	Potential to adversely affect WWTF's operation	0.0018(per batch)	EC, Ammonia, Chloride
Moga Truck Wash	Potential to adversely affect WWTF's operation	0.001	EC, BOD_5, Phosphorus, Aluminum, Iron, Zinc, Oil & Grease
Fresno Truck Wash	Potential to adversely affect WWTF's operation	0.006	EC, BOD_5, TSS, Chloride, MBAS, Aluminum, Iron, Oil & Grease
Fifth Wheel Truck Wash	Potential to adversely affect WWTF's operation	0.001	EC, BOD_5, Phosphorus, Aluminum, Iron, Zinc, Oil & Grease
Imperial Truck Wash	Potential to adversely affect WWTF's operation	0.002	EC, Ammonia, BOD_5, TSS, Phosphorus, Aluminum, Iron, Zinc

Due to the fact that there are SIUs discharging to the WWTF, the Malaga CWD is required to have an approved Pretreatment Program. The District's Pretreatment Program (PP) was adopted on December 9, 2014. The current Pretreatment Ordinance is included as Appendix I.

Part of the IPP requirements is the development and implementation of local limits. Local limits are designed to protect the operations of the WWTF and to ensure that its discharges, whether liquid, solid, or air, comply with State and Federal requirements. The EPA published the *Local Limits Development Guidance* document in July 2004. This document outlines the procedures to develop local limits. In developing local limits the following factors may need to be considered:

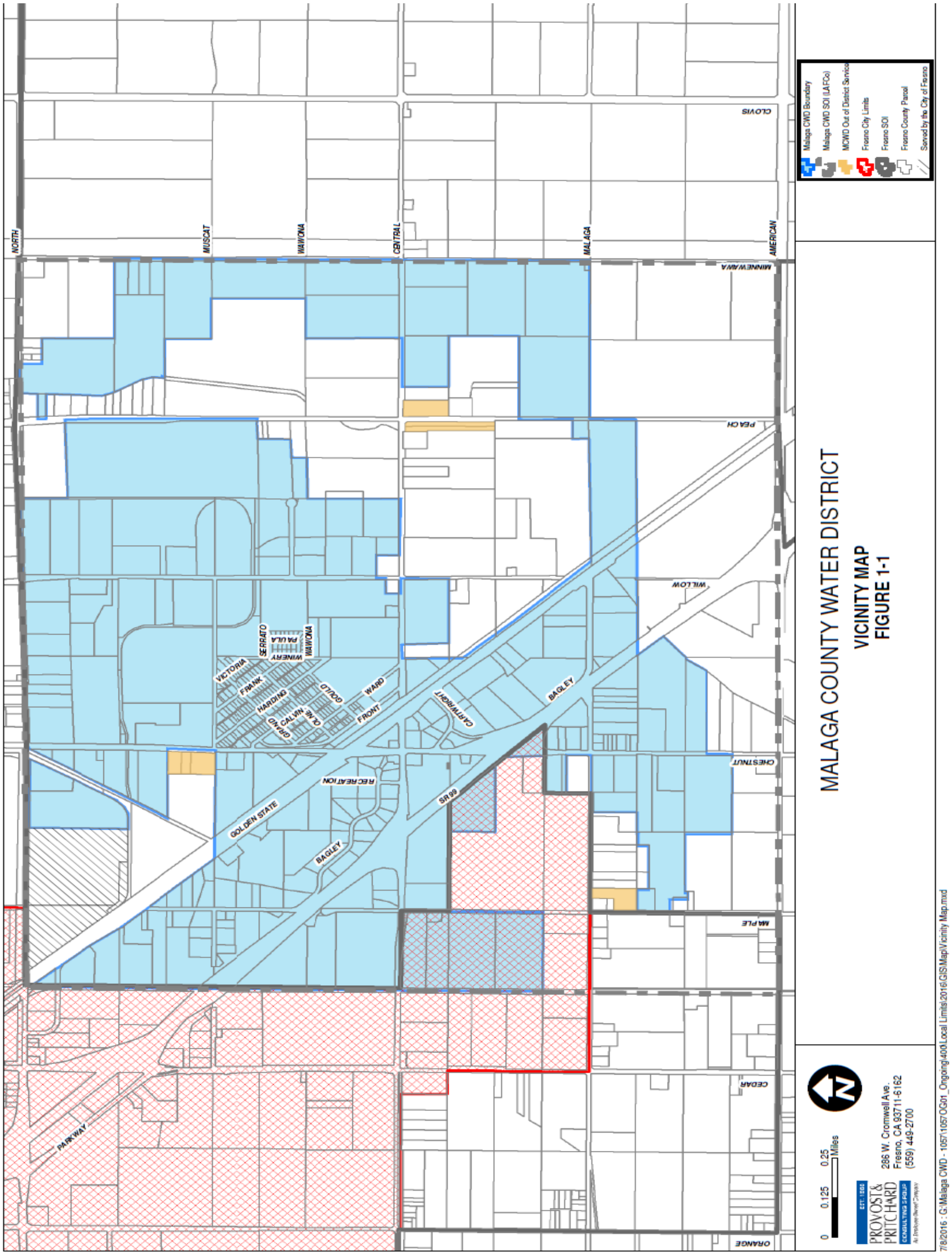
- the WWTF's efficiency in treating and removing pollutants;
- the WWTF's history of complying with the Waste Discharge Requirements;
- sludge disposal methods; and
- worker health and safety concerns.

The current local limits were developed in 2004. The purpose of this project is to re-evaluate those local limits and investigate the need for updated local limits.

1.1 WWTF Information

The community of Malaga is located just south of the City of Fresno, along State Route 99. The District boundary and WWTP location are shown on the vicinity map, presented as Figure 1-1 MCWD Vicinity Map.

Figure 1-1 MCWD Vicinity Map



Malaga County Water District (MCWD or District) is currently discharging pursuant to Waste Discharge Requirements (WDRs) Order No. R5-2014-0145, and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0084239 dated 4 December 2014. A copy of the WDRs is attached as Appendix H. The NPDES permit and WDRs expire on 31 January 2020.

The plant has a design treatment capacity of 1.2 MGD. The average flow for the period of January 2011 to December 2015 was 0.57 MGD, with a maximum one day flow of 1.12 MGD (September 26, 2012).

MCWD owns and operates the WWTP and the sanitary sewer system leading to the WWTP. The secondary and tertiary treatment systems consist of three screw pumps (one in service at a time), a mechanically cleaned bar screen, an aerated grit chamber, one primary clarifier (DAF unit), three activated sludge aeration tanks, two aerobic sludge digesters, a sludge thickening tank, and three secondary clarifiers. The tertiary treatment system also includes a “fuzzy” filter and an ultraviolet light(UV) disinfection system. The WWTP disposes secondary treated effluent to 23 acres of evaporation/percolation ponds. Per the Waste Discharge Requirements, up to 0.85 mgd of secondary treated effluent can be discharged to the ponds for disposal.

Up to 0.45 mgd of tertiary treated effluent can be discharged to the Fresno Irrigation District (FID) Central Canal, which is a water of the United States within the South Valley Flow Hydrologic Unit. The Central Canal is a tributary of the Kings River via the Fresno and Fancher Creek Canals, and feeds into other canals and aqueducts to the south and to the west. The Central Canal is hydraulically connected to Fresno Slough, which during periods of heavy rain, drains to the San Joaquin River. The Fresno Slough and San Joaquin River are both also waters of the United States. The Malaga County Water District has recently notified the Regional Water Quality Control Board and the Fresno Irrigation District that it (District) no longer intends to discharge to the Central Canal.

Digested sludge is dewatered onsite using one acre of lined sludge drying beds, and then is hauled offsite for land application. A sludge holding bin is used to hold dried sludge prior to contracting a hauling company for disposal.

The treatment and disposal facilities are identified on the site map, included as Figure 1-2 **MCWD WWTP Site Map**

Figure 1-2 MCWD WWTP Site Map

The processes employed in the treatment process will affect the determination of certain pollutant local limits due to inhibition levels that can disrupt the treatment process. Additionally, the ability of the WWTF to remove pollutants will affect the determination of local limits. The interference and inhibition values are detailed in Section 2.5.3. The WWTF removal efficiencies are detailed in Section 4.1.

1.2 Compliance Analysis with WDR's and NPDES Permit

The MCWD has consistently complied with existing limits of the WDRs and NPDES permit, with the exception of electroconductivity of the effluent. In 2016, the District has been in compliance with the effluent electroconductivity limitation. However, the District is still slightly above the electroconductivity limitation based on the rolling 12-month average.

2 POLLUTANTS OF CONCERN

Pollutants of Concern (POCs) are those pollutants that need to be controlled to protect the WWTF, its workers, and the disposal of the treated wastewater effluent and biosolids. POCs are pollutants that may cause pass through or interference at the WWTF, cause problems in the collection system, or cause problems with the WWTF's ability to dispose of the generated biosolids.

The following sections discuss the various reasons a pollutant may be included in the list of POCs. There may be numerous reasons to consider a pollutant a POC. The fact that a pollutant is a POC does not mean that a local limit must be developed for it. Whether a local limit is needed for a POC is discussed in Section 5. If a pollutant is determined to be a POC, data must be collected for it and a detailed evaluation of the POC must be performed.

2.1 EPA POCs

The EPA has established 15 pollutants that are often found in treatment plant effluent and biosolids. The EPA considers these 15 pollutants to be POCs and need to be evaluated as part of any local limits evaluation. These pollutants are listed in Table 2-1.

Table 2-1: EPA POCs

EPA POCs	
Arsenic	Cadmium
Chromium	Copper
Cyanide	Lead
Mercury	Nickel
Silver	Zinc
Molybdenum	Selenium
BOD_5	Total Suspended Solids
Ammonia	

2.2 Existing Local Limits

Malaga CWD has established local limits for several pollutants. These pollutants are also considered POCs. Table 2-2 lists the pollutants that Malaga CWD currently regulates through a local limit.

Table 2-2: Existing Local Limits POCs

Local Limits POCs		
Aluminum	Arsenic	BOD_5
Barium	Benzene	Total Suspended Solids
Boron	Cadmium	Electroconductivity
Chromium	Copper	Oil and Grease
Iron	Lead	
Nickel	Phenols	
Mercury	Selenium	
Silver	Zinc	

2.3 Waste Discharge Requirements POCs

On December 4, 2014, the RWQCB issued Waste Discharge Requirements (WDR) for the Malaga CWD WWTF (Appendix I). The WDRs contain pollutant limitations that the WWTF must comply with on the discharge to the onsite disposal ponds. The pollutants that are regulated on the effluent are considered POCs. Table 2-3 lists the pollutants and the associated most restrictive limitation listed in the WDR (these pollutants are listed in Table 5 of the WDRs).

Table 2-3: WDR POCs

WDR POCs	
POC	**Discharge Limitation (mg/L)**
BOD_5	40
TSS	40
Boron	1.0
Chloride	175
Settlable Solids	0.2 mL/L
EC	1,000 umhos/cm or source water plus 500 umhos/cm, whichever is less

2.4 NPDES Permit POCs

The NPDES Permit contains pollutant limitations that the WWTF must comply with for discharge to the Fresno Irrigation District Central Canal. The pollutants that are regulated on the effluent are considered POCs. Table 2-4 lists the pollutants and the associated most restrictive limitation listed in the WDR (these pollutants are listed in Table 4 of the WDRs).

Table 2-4: NPDES POCs

NPDES POCs	
POC	**Discharge Limitation (mg/L)**
BOD5	10
TSS	10
Copper, Total Recoverable	0.0065
Cyanide, Total as CN	0.0042
Aluminum, Total Recoverable	0.341
Ammonia, un-ionized as N	0.025
Boron	1.0
Chloride	175
Nitrate plus Nitrite	10
EC	1,000 umhos/cm or source water plus 500 umhos/cm, whichever is less

2.5 Other Reasons for POCs

There are several other reasons that a pollutant may be included on the POC list according to the EPA Guidance Manual, including: water quality criteria, biosolid land application restrictions, and treatment plant inhibitions. There are numerous pollutants that are listed under these criteria. However, to be considered a POC at least one of the following conditions must be met:

- The maximum pollutant concentration in the plant effluent is more than one-half the allowable effluent concentration required to meet a water quality criteria limit;
- The maximum pollutant concentration in the sludge is more than one-half the applicable biosolids residual disposal limit;
- The maximum pollutant concentration in a plant influent grab sample is more than one-half the inhibition threshold; or
- The maximum pollutant concentration in a plant influent composite sample is more than one-fourth the inhibition threshold.

2.5.1 Water Quality Criteria

In the WDRs for the WWTF, the RWQCB stated that the Central Canal is a distributary of the Kings River via the Fresno and Fancher Creek Canals. Central Canal is hydraulically connected to Fresno Slough, which drains to the San Joaquin River. Central Canal's beneficial uses are warm freshwater habitat, water contact recreation, agricultural supply, and municipal and domestic water supply. There is no irrigation water in the Central Canal during periods when there are no irrigation water deliveries, so the discharge from the WWTF would constitute the flow in the Central Canal. Therefore, there is no dilution of the WWTF effluent in the Central Canal during times of no irrigation water deliveries. It is noted that the Central Canal does receive storm water discharges from other sources during storm events.

Additionally, the State of California has limitations for water used for agricultural uses. There are numerous constituents that have limitations based on the potential agricultural use of the treated effluent.

Per the EPA Guidance Manual as outlined in Section 2.5 for both the beneficial and agricultural use protection, only pollutants in concentrations that are greater than 50% of the water quality standard are considered POCs.

2.5.2 Biosolids Land Application Criteria

The District disposes of biosolids by contracting for land application. The WWTF facility has had issues with copper and chromium concentrations in the biosolids hauled for disposal. The WWTF must prohibit industrial users from discharging pollutants that could cause a violation of applicable sludge disposal regulations. The national sludge standards are contained in 40 CFR 503. These limitations are based on human health and environmental risks and include numerical pollutant limits, operational standards, management practices, and requirements for sampling, record keeping, and reporting. The State of California has adopted the federal standards in 40 CFR 503. Additionally, the State of California has land application standards set forth in Title 22. The pollutants contained in the 503 and Title 22 regulations are considered for evaluation as a POC. In order to be considered a POC per the EPA Guidance Manual as outlined in Section 2.5, the maximum pollutant concentration in the sludge must be more than one-half the applicable biosolids residual disposal limit.

2.5.3 Interference and Inhibition Criteria

The pretreatment regulations set forth by the EPA in 40 CFR 403.5(a) state that there must be prohibitions against the discharge of pollutants from an industrial user that may cause interference at the WWTF. Interference, as defined by the EPA, means a discharge that inhibits or disrupts a treatment plant and causes a violation of the WWTF's WDR or biosolids sludge requirements. The EPA recommends that pollutants be considered POCs if they have caused interference in the past. Based on the District's WWTF historical data, there have been no pollutants that have caused interference at the plant in the past.

There are certain pollutants that may not cause an effluent discharge or biosolids disposal violation but that may cause disruptions to the WWTF operations. The EPA *Local Limits Development Guidance* document contains a list of pollutants and inhibition concentrations for various treatment plant processes. The pollutants that have inhibition concentrations are considered POCs if the following criteria have been met:

- The maximum pollutant concentration in a plant influent grab sample is more than one-half the inhibition threshold; or

- The maximum pollutant concentration in a plant influent composite sample is more than one-fourth the inhibition threshold.

2.5.4 Protection of Treatment Works, Collection System, and Workers

Explosive and flammable pollutants can threaten the integrity of the collection system and the health and safety of the WWTF workers. Under the right conditions, the accumulation of such pollutants can produce explosions or fires. Local limits may be needed if these pollutants are expected to be discharged from industrial users.

The fume toxicity levels of certain pollutants indicate the likelihood that a WWTF worker will suffer adverse health effects when the level is approached or exceeded. Volatile organic compound vapors are the major concern because they can be toxic and carcinogenic, and may produce chronic health affects after various periods of exposure. The EPA *Local Limits Development Guidance* document list the concentrations for the various exposure levels set forth by the National Institute for Occupational Safety and Health (NIOSH), Occupational Health and Safety Administration (OSHA), and American

Conference of Governmental Industrial Hygienists (ACGIH). Local limits may be needed if these pollutants are expected to be discharged from industrial users at concentrations that may pose a risk to WWTF workers.

2.6 Summary of Controlling Limits

Based on the criteria discussed in this Section 2, several potential pollutants of concern and their associated controlling limit and inhibition limit are tabulated and summarized in Table 2-5.

Table 2-5: Summary of Controlling Limits

Primary Compound Name	Controlling Limit (ppb)	Source	Inhibition Criteria (ppb)	Treatment Process
Ammonia	660 equivalent to 25 ppb as un-ionized (as N)	Waste Discharge Requirements	480,000[4]	Activated Sludge
Arsenic	100	Agricultural WQ Limit	100[1,2,3]	Activated Sludge
Boron	1000	Waste Discharge Requirements	----------	----------
Cadmium	0.27	Fresh Water Aquatic 4-day average (USEPA)	1,000[2,3]	Activated Sludge
Chloride	175,000	Waste Discharge Requirements		
Chromium VI			1,000[2,3]	Activated Sludge
Copper	6.5	Fresh Water Aquatic 4-day average (CTR)	1,000[1,2,3]	Activated Sludge
Cyanide (total)	4.2	Fresh Water Aquatic 4-day average (CTR)	100[1,2,3]	Activated Sludge
Lead	3.2	Fresh Water Aquatic 4-day average (CTR)	1,000[3]	Activated Sludge
Mercury			100[2,3]	Activated Sludge
Molybdenum	10	Agricultural WQ Limit		
Nickel	52	Fresh Water Aquatic 4-day average (CTR)	1,000[2,3]	Activated Sludge
Selenium	5.0	Fresh Water Aquatic 4-day average (CTR)	----------	----------
Silver	4.1	Fresh Water Aquatic Instantaneous Max (USEPA)	----------	----------
Zinc	120	Fresh Water Aquatic 4-day average (CTR)	300[3]	Activated Sludge
Biochemical Oxygen Demand (BOD)	10,000	Waste Discharge Requirements	----------	----------
Total Suspended Solids (TSS)	10,000	Waste Discharge Requirements	----------	----------
Electroconductivity	800 umhos/cm (500 above water supply)	Waste Discharge Requirements	----------	----------
Aluminum	341	Waste Discharge Requirements	----------	----------
MBAS	150	Human Health	----------	----------
Chloroform	60	Exposure Limits	1,000[2]	Anaerobic Digestion
Toluene	2,075	Exposure Limits	200,000[3]	Activated Sludge

1) Jenkins, D.I., and Associates. 1984. *Impact of Toxics on Treatment Literature Review*.
2) Russell, L.L., C.B. Cain, and D.I. Jenkins. 1984. *Impacts of Priority Pollutants on Publicly Owned Treated Works Processes: A Literature Review*. 1984 Purdue Industrial Waste Conference.
3) Anthony, R.M., and L.H. Briemburst. 1981. *Determining Maximum Influent Concentrations of Priority Pollutants for Treatment Plants*. Journal Water Pollution Control Federation 53(10):1457-1468.
4) U.S. EPA. 1986. *Working Document; Interferences at Publicly Owned Treatment Works*. September 1986.

2.7 Evaluation of Existing Data

The District provided the following data for the local limits evaluation:

- Daily WWTF flow and influent/effluent sampling
- WWTF Priority Pollutant scans
- Biosolids sampling
- SIU sampling

The sampling data provided above was for the period of January 2012 to June 2016. This data is shown in Appendices A, B, C, and F.

The existing data was compared to the values in Section 2.6. Table 2-6 lists the pollutants of concern and the reason the pollutant is being considered a POC.

Table 2-6: Pollutants of Concern

Pollutant	Effluent concentration more than half of effluent standard	Sludge concentration more than half of sludge disposal standard	Influent concentration more than 25% of inhibition concentration	Required by EPA	Existing local limit
Aluminum	X	------	------	------	X
Ammonia, un-ionized	X	------	------	X	------
Arsenic	------	X	------	X	X
BOD5	X	------	------	X	X
Barium	------	------	------	------	X
Benzene	------	------	------	------	X
Boron	------	------	------	------	X
Cadmium	X	------	------	X	X
Chloride	------	------	------	------	------
Chromium	------	X	------	X	X
Copper	X	X	------	X	X
Cyanide	X	------	------	X	------
Electroconductivity	X	------	------	------	X
Iron	------	------	------	------	X
Lead	X	------	------	X	X
MBAS	X	------	------	------	------
Mercury	------	------	------	X	X
Molybdenum	X	------	------	X	------
Nickel	------	------	------	X	X
Phenols	------	------	------	------	X
Oil & Grease	------	------	------	------	X
Selenium	X	------	------	X	X
Silver	------	------	------	X	X
TSS	X	------	------	X	X
Zinc	X	X	X	X	X

3 SAMPLING PLAN

3.1 Sampling Plan

A review of the existing Malaga County Water District information showed there was additional information needed to complete the local limits evaluation.

The Malaga County Water District had no recent (last five years) monitoring data for residential users. A limited amount of information was available for commercial users. A sampling plan was prepared to address additional information needed for the evaluation. A copy of the approved sampling plan is included as Appendix I. No sampling was performed within 48 hours of a measurable precipitation event. Table 3-1 lists the pollutants that were monitored, the location, number of samples, test methods, and the preferred detection limit. Test methods listed are EPA test methods except those beginning with SM, which are Standard Methods test procedures.

The sampling data gathered from the collection system and at the wastewater treatment plant are typically representative of the water quality typically seen at the selected locations.

Residential Sampling

Residential area sampling is identified in the sampling plan. The residential sampling locations are shown in Figure 3-1.

SIU Sampling

SIU sampling is identified in the sampling plan. The SIU sampling locations are shown in Figure 3-2

Treatment Plant

Treatment plant sampling is identified in the sampling plan. In addition, samples are being obtained from the grit chamber return flowstream. The treatment plant sampling locations are shown in Figure 3-3.

Non-conservative Pollutants

In addition to the sampling information, the basis-of-design for the treatment plant is needed to ascertain the design loadings for the non-conservative pollutants (ammonia, BOD, and TSS).

Figure 3-1 Residential Sampling Locations

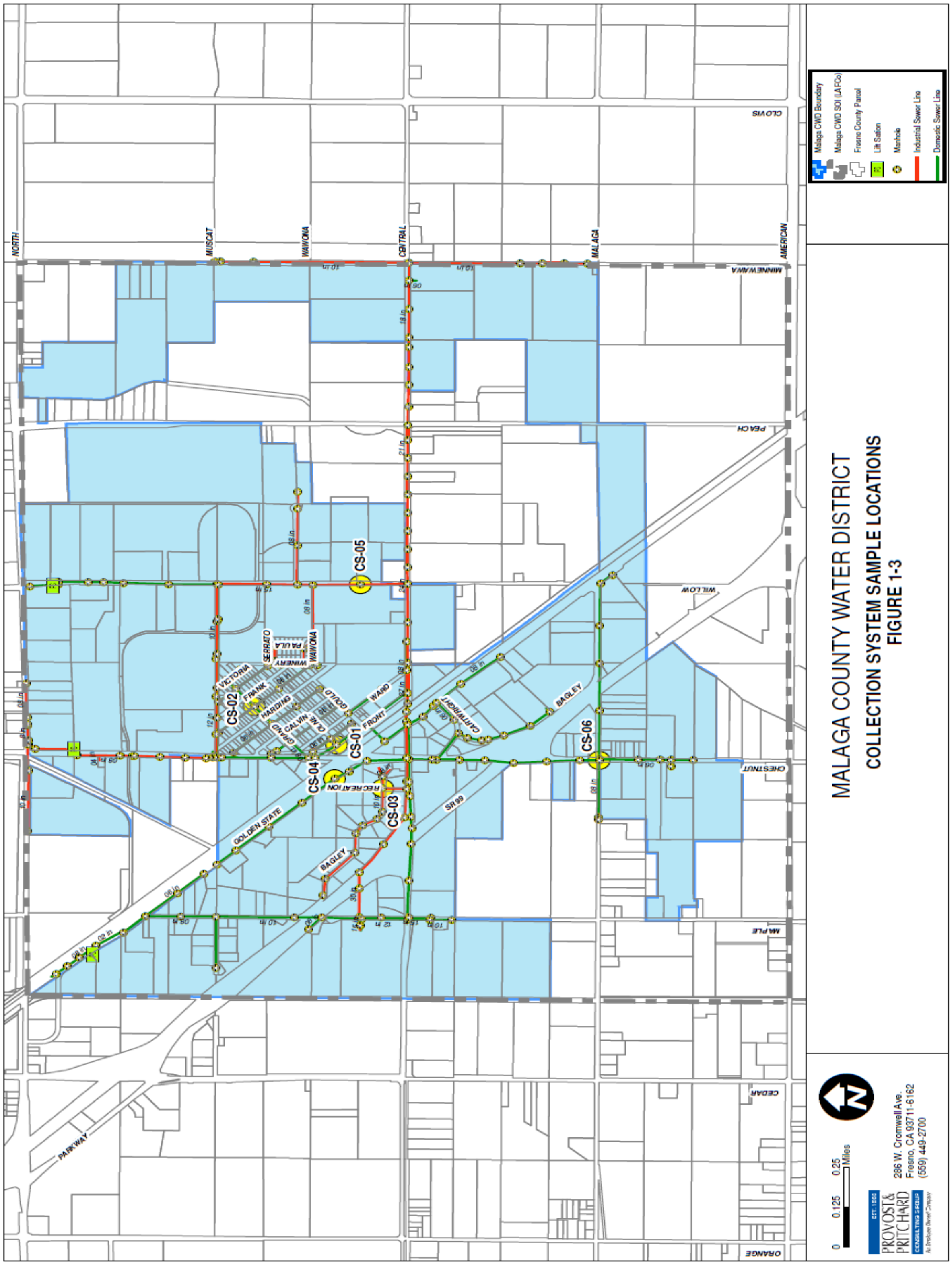


Figure 3-2 SIU Sampling Locations

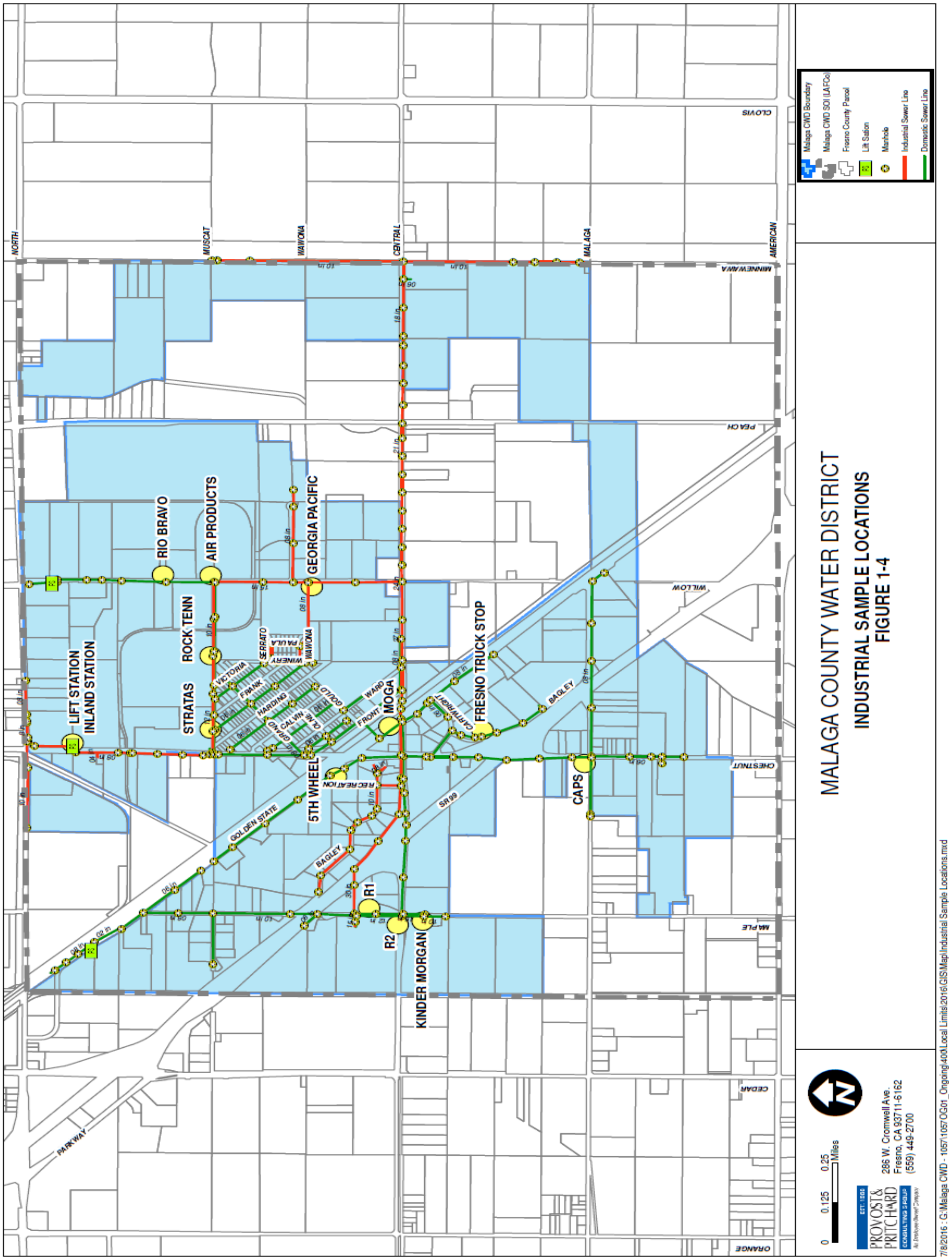


Figure 3-3 Treatment Plant Sampling Locations

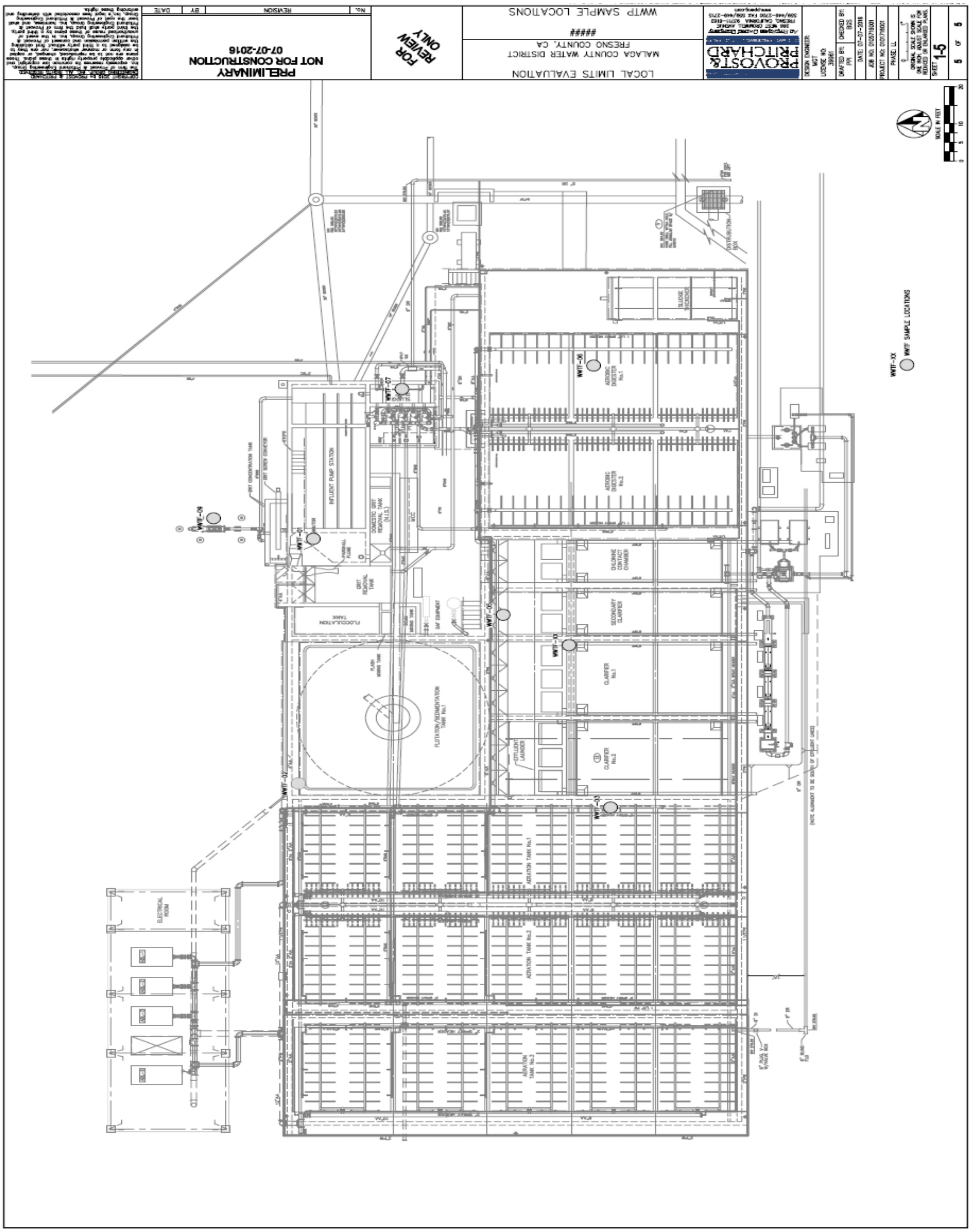


Table 3-1: Sampling Plan Information

Pollutant	Reason	Test Method	Detection Limit	Residential Sampling Events	SIU Sampling Events	Wastewater Treatment Plant Sampling Events
Inorganics						
Ammonia, as N	EPA	EPA 350.1	1 mg/L	23	4	5
BOD	EPA	SM5210B	2 mg/L	23	4	5
Chloride	WDR	EPA 300.0	2 mg/L	23	4	5
Cyanide	EPA	SM4500	5 u-g/L	23	4	5
Electroconductivity	WDR	SM2510B	1 u-ohm/cm	23	4	5
MBAS	Concern	SM5540C	0.05 mg/L	23	4	5
Nitrate, as N	WDR	EPA 300.0	1 mg/L	23	4	5
Nitrite, as N	WDR	EPA 300.0	1 mg/L	23	4	5
pH	WDR	SM4500-HB	1 SU	23	4	5
Phenol	LL	EPA 625	1 u-g/L	23	4	5
Phosphorus	Biosolids	EPA 365.1	0.1 mg/L	23	4	5
TDS	Concern	SM2540C	5 mg/L	23	4	5
TSS	EPA	SM2540D	1 mg/L	23	4	5
Metals						
Aluminum	LL	EPA 200.7	0.05 mg/L	23	4	5
Arsenic	EPA/LL	EPA 200.8	1 u-g/L	23	4	5
Barium	LL	EPA 200.7	0.05 mg/L	23	4	5
Boron	LL	EPA 200.7	0.05 mg/L	23	4	5
Cadmium	EPA/LL	EPA 200.8	0.05 u-g/L	23	4	5
Chromium	EPA/LL	EPA 200.8	1 u-g/L	23	4	5
Copper	EPA/LL	EPA 200.8	2 u-g/L	23	4	5
Iron	LL	EPA 200.7	0.03 mg/L	23	4	5
Lead	EPA/LL	EPA 200.8	0.5 u-g/L	23	4	5
Mercury	EPA/LL	EPA 245.1	0.5 u-g/L	23	4	5
Molybdenum	EPA/LL	EPA 200.8	0.05 mg/L	23	4	5
Nickel	EPA/LL	EPA 200.8	1 u-g/L	23	4	5
Selenium	EPA/LL	EPA 200.8	1 u-g/L	23	4	5
Silver	EPA/LL	EPA 200.8	1 u-g/L	23	4	5
Zinc	EPA/LL	EPA 200.8	5 u-g/l	23	4	5
Semi-Volatile Organics						
FOG (Fats, Oil, Grease)	LL	EPA 1664	1 mg/L	23	4	5
Volatile Organics						
Benzene	LL	EPA 624	1 u-g/L	23	4	5

4 MAXIMUM ALLOWABLE HEADWORKS LOADINGS

After determining the POCs (Table 2-6) and gathering the additional sampling data, the maximum allowable headworks loadings (MAHLs) can be calculated. The MAHL is the estimated upper limit of a particular pollutant loading to the WWTF intended to prevent pass through or interference. The MAHL for each POC is calculated by the following steps:

1. Calculation of WWTF removal efficiency for the POC;

2. Calculate the allowable headworks loading (AHLs) for the various environmental criteria (such as WDR limits, water quality limits, sludge disposal limits, inhibition values);

3. Designate the MAHL as the most stringent allowable headworks loading for the POC.

The references to chromium in MAHL calculations are based upon hexavalent chromium. The current local limit and sampling data are based upon total chromium. Total chromium is the sum of the hexavalent and trivalent chromium plus complexed chromium. Since the sampling data is based on total chromium, it is conservatively assumed that the total chromium consists completely of hexavalent chromium alone. Therefore, the references to chromium are referring to hexavalent chromium. The local limit based on the hexavalent chromium MAHLs will continue to be applied as a total chromium local limit.

4.1 WWTF Removal Efficiencies

Based on the sampling data collected from the District WWTF, the removal efficiencies for the POCs were calculated. The removal efficiencies shown in Table 4-1 are the average removal percentages for each POC. The detailed data used to calculate the removal efficiencies is contained in Appendix A. In calculating the headworks loading, the loading from the recycle flow was subtracted from the influent loading. For purposes of calculating the removal efficiencies, any reported concentration that was below the detection limit was assumed to be half the detection limit. Any negative removal efficiencies were assumed to be zero. Since the treatment plant staff takes samples for some POCs throughout the year, the number of samples for the POCs may exceed the number of samples gathered as defined in the Sampling Plan. The numbers of samples shown in the table were those used to calculate the overall removal efficiency. The primary removal efficiency was calculated based on two sampling events taken as part of the sampling plan.

Table 4-1: Summary of WWTF Removal Efficiencies

POC	Primary Removal Efficiency	Overall Removal Efficiency	Number of Samples
BOD	---	98%	245
TSS	---	97%	226
Ammonia	19%	97%	9
FOG	---	55%	9
Aluminum		66%	6
Arsenic	15%	53%	6
Barium	---	44%	5
Boron	---	0%	15
Cadmium	15%	34%	6
Chromium	27%	60%	6
Copper	---	86%[1]	6
Iron	---	84%	9
Lead	57%	61%[1]	6
Mercury	10%	60%[1]	6
Molybdenum	---	7%	5
Nickel	14%	26%	6
Selenium	---	42%	5
Silver		100%	6
Zinc	27%	46%	6
Chloride	---	12%	12
Cyanide	27%	69%[1]	6
MBAS	---	97%	4
Electroconductivity	---	0%	1465
Benzene	0%[2]	0%[2]	6
Phenols	0%[2]	0%[2]	3
	[1]EPA median removal percentage used since most results were below detection limit. [2]Influent and Effluent samples were all near or below detection limit.		

The Sampling Plan results showed that for all samples, benzene and phenols were not present in the influent or effluent of the WWTF. Therefore, these pollutants were removed from consideration as POCs.

The influent sampling location at the wastewater treatment plant is a combination of raw influent with return water from the grit removal system. The wastewater plant measures the total flow treated and the grit removal return flow. The return flows from the grit removal facilities are estimated to make up approximately 37% of the total headworks flow. The District has taken a sample of the grit return stream. However, the results of this analysis are not available yet. It is anticipated that the pollutant loading from the grit return stream is minimal compared to the total flow treated at the wastewater plant. By the time this report is finalized, the grit return flow analysis will have been received. At that time, the calculations and report will be updated.

4.2 Discharge Permit and Water Quality AHLs

As discussed in Section 2 of this report, the Waste Discharge Requirements establish limits to the characteristics of the effluent discharge from the plant. The AHL for POCs with WDR or NPDES limitations is shown in Equation 1.

Equation 1 – AHL based on WDR or NPDES limits

$$AHL_{wdr} = \frac{(8.34)(C_{wdr})(Q_{wwtf})}{(1-R_{wwtf})}$$

Where:

AHL_{wdr} = AHL based on WDR or NPDES limit, lb/day
C_{wdr} = WDR or NPDES permit limit, mg/L
Q_{wwtf} = WWTF average flow rate, MGD
R_{wwtf} = Plant removal efficiency, as decimal
8.34 = Conversion factor

Table 4-2 shows the AHL for the POCs based upon the limitations contained in the WDRs (Appendix I).

Table 4-2: WDR Based AHLs

Pollutant	WWTF Flow (MGD) (Qwwtf)	WDR Limit (mg/l) (Cwdr)	Removal Efficiency (%) (Rwwtf)	Allowable Headworks (lbs/day)
Arsenic	0.57		53.13	-
Cadmium	0.57		34.19	-
Chromium	0.57		60.19	-
Copper	0.57	0.0065	86.00	0.22
Cyanide	0.57	0.0042	69.00	0.06
Lead	0.57		61.00	-
Mercury	0.57		60.00	-
Iron	0.57		83.59	-
Nickel	0.57		26.01	-
Selenium	0.57		42.33	-
Silver	0.57		99.99	-
Zinc	0.57		45.95	-
Ammonia	0.57	0.66	97.07	106.10
BOD	0.57	10	98.13	2516.70
TSS	0.57	10	96.98	1562.26
Boron	0.57	1	0.00	4.71
Chloride	0.57	175	12.12	938.51
FOG	0.57		54.97	-
EC	0.57	800	0.00	3770.48
Aluminum	0.57	0.341	65.74	4.69
MBAS	0.57		97.08	-

The WDRs issued do not contain limitations for all the POCs mentioned in Table 2-6. For the pollutants without limitation in the WDR, the EPA guidance recommends using AHLs based on State or Federal Water Quality Standards. The water quality standards can be based upon short term aquatic life affects (acute) or long term affects (chronic). Water quality standards can also be based upon human health effects. The human health effects can be from drinking of the water, recreational use of the water, or consumption of aquatic life. According to the WDRs, the discharge to the Central Canal is protected for municipal and domestic supply, agricultural water supply, water contact recreation, and warm freshwater habitat. The criteria used for this comparison is discussed in Section 2.4. The AHL for POCs that have water quality standards is shown in Equation 2.

Equation 2 – AHL based on Water Quality limits

$$AHL_{wq} = \frac{(8.34)[(C_{wq})*(Q_{str}+Q_{wwtf}) - (C_{str}*Q_{str})]}{(1-R_{wwtf})}$$

Where:

AHL_{wq} = AHL based on water quality criteria, lb/day
C_{wq} = State or Federal water quality standard, mg/L
C_{str} = Receiving stream background concentration, mg/L
Q_{wwtf} = WWTF average flow rate, MGD
Q_{str} = Receiving stream (upstream) flow rate, MGD
R_{wwtf} = Plant removal efficiency, as decimal
8.34 = Conversion factor

The equation allows for instantaneous mixing of the discharge with the receiving stream.

Table 4-3 shows the allowable headworks loading for the POCs based upon the California water quality-based assessment thresholds published by the State Water Resources Control Board at the web site as follows:

www.waterboards.ca.gov/water_issues/programs/water_quality_goals.

Table 4-3: Water Quality (Chronic) Based AHLs

Pollutant	WWTF Flow (MGD) (Qwwtf)	Receiving Stream Flow (MGD) (Qstr1)	Receiving Stream Concentration (mg/l) (Cstr)	Chronic WQS (mg/l) (Cwq)	Removal Efficiency (%) (Rwwtf)	Allowable Headworks (lbs/day)
Arsenic	0.57	0.00	0.00056	0.15	53.13	1.51
Cadmium	0.57	0.00	0	0.0022	34.19	0.02
Copper	0.57	0.00	0.002	0.0065	86.00	0.22
Cyanide	0.57	0.00	0.0043	0.0042	69.00	0.06
Lead	0.57	0.00	0.00031	0.0017	61.00	0.02
Mercury	0.57	0.00	0.00026	0.00077	60.00	0.01
Nickel	0.57	0.00	0.0023	0.045	26.01	0.29
Selenium	0.57	0.00	0	0.005	42.33	0.04
Silver	0.57	0.00	0	0.00088	99.99	41.48
Zinc	0.57	0.00	0	0.10	45.95	0.87
Chloride	0.57	0.00	1.2	230.0	12.12	1223.47
FOG	0.57	0.00	0	90.0	54.97	942.08

Table 4-4 shows the allowable headworks loading for the POCs based upon the

California agricultural use protective limits published by the State Water Resources Control Board.

Table 4-4: Water Quality (Agricultural Water Supply) Based AHLs

Pollutant	WWTF Flow (MGD) (Qwwtf)	Receiving Stream Flow (MGD) (Qstr2)	Receiving Stream Concentration (mg/l) (Cstr)	Agricultural WQS (mg/l) (Cwq)	Removal Efficiency (%) (Rwwtf)	Allowable Headworks (lbs/day)
Arsenic	0.57	0.00	0.00056	0.10	53.13	1.01
Cadmium	0.57	0.00	0	0.01	34.19	0.07
Chromium	0.57	0.00	0	0.10	60.19	1.18
Copper	0.57	0.00	0.002	0.20	86.00	6.73
Lead	0.57	0.00	0.00031	5.00	61.00	60.42
Molybdenum	0.57	0.00	0	0.01	83.59	0.29
Nickel	0.57	0.00	0.0023	0.20	26.01	1.27
Selenium	0.57	0.00	0	0.02	42.33	0.16
Zinc	0.57	0.00	0	2.00	45.95	17.44
Boron	0.57	0.00	0	0.70	0.00	3.30
Chloride	0.57	0.00	1.2	106.00	12.12	568.47
Aluminum	0.57	0.00	0.14	5.00	65.74	68.78

Table 4-4Table 4-5 shows the allowable headworks loading for the POCs based upon the California human health water quality standards (primary water quality MCL) limits published by the State Water Resources Control Board.

Table 4-5: Water Quality (Human Health Water Supply) Based AHLs

Pollutant	WWTF Flow (MGD) (Qwwtf)	Receiving Stream Flow (MGD) (Qstr2)	Receiving Stream Conc. (mg/l) (Cstr)	Human Health WQS (mg/l) (Cwq)	Removal Efficiency (%) (Rwwtf)	Allowable Headworks (lbs/day)
Arsenic	0.57	0.00	0.00056	0.1	53.13	0.10
Cadmium	0.57	0.00	0	0.005	34.19	0.04
Chromium	0.57	0.00	0	0.01	60.19	0.12
Copper	0.57	0.00	0.002	1.3	86	43.76
Cyanide	0.57	0.00	0.0043	0.15	69	2.28
Lead	0.57	0.00	0.00031	0.15	61	1.81
Mercury	0.57	0.00	0.00026	0.002	60	0.02
Nickel	0.57	0.00	0.0023	0.1	26.01	0.64
Selenium	0.57	0.00	0	0.05	42.33	0.41
Ammonia	0.57	0.00	0	30	97.07	4,822.75
Aluminum	0.57	0.00	0.14	1	65.74	13.76
MBAS	0.57	0.00	0	0.15	97.08	24.20

Table 4-6 shows a summary of the water quality based AHLs. The most restrictive (lowest) loading for each POC has been highlighted.

Table 4-6: Summary of Water Quality Based AHLs

	Allowable	Allowable	Allowable	Allowable	Allowable

Pollutant	Headworks (NPDES) (lbs/day)	Headworks (CHRONIC) (lbs/day)	Headworks (AGRICULTURAL) (lbs/day)	Headworks (HUMAN HEALTH) (lbs/day)	Headworks (WATER QUALITY) (lbs/day)
Arsenic	-	1.51	1.01	0.10	0.10
Cadmium	-	0.02	0.07	0.04	0.02
Chromium	-	-	1.18	0.12	0.12
Copper	0.22	0.22	6.73	43.76	0.22
Cyanide	0.06	0.06	-	2.28	0.06
Lead	-	0.02	60.42	1.81	0.02
Mercury	-	0.01	-	0.02	0.01
Molybdenum	-	-	0.29	-	0.29
Nickel	-	0.29	1.27	0.64	0.29
Selenium	-	0.04	0.16	0.41	0.04
Silver	-	41.48	-	-	41.48
Zinc	-	0.87	17.44	-	0.87
Ammonia	106.10	-	-	4822.75	106.10
BOD	2516.70	-	-	-	2516.70
TSS	1562.26	-	-	-	1562.26
Boron	4.71	-	3.30	-	3.30
Chloride	938.51	1233.47	568.47	-	568.47
FOG	-	942.08	-	-	942.08
EC	3770.48	-	-	-	3770.48
Aluminum	4.69	-	68.78	13.76	4.69
MBAS	-	-	-	24.20	24.20

There are fresh water aquatic life water quality standards and WDR limitations for ammonia, copper, aluminum, and cyanide. In these instances, the EPA *Local Limits Development Guidance* manual recommends that POTW base the water quality AHLs on the WDR limitations.

4.3 Biosolids Disposal Based AHLs

The biosolids produced at the treatment plant are hauled from the site by a Contractor and land applied. The Federal sludge disposal regulations, 40 CFR Part 503, establish limitations for certain metals that are normally seen in industrial discharges. Additionally, California Title 22 contains additional pollutant limitations on the land application of biosolids. These limitations are converted to AHLs for the POCs using Equation 3 which is based on Equation 5.9 from the 2004 EPA *Local Limits Development Guidance* manual.

Equation 3 – AHL based on Biosolids Disposal limits

$$AHL_{bsol} = \frac{(0.0022)(C_{bsol})(Q_{bsol})}{R_{wwtf}}$$

Where:

AHL_{bsol} = AHL based on biosolids disposal limit, lb/day
C_{bsol} = Biosolids limitation, mg/kg dry sludge
Q_{bsol} = Total sludge flow to disposal, dry metric tons per day
R_{wwtf} = Plant removal efficiency, as decimal
0.0022 = Conversion factor

Table 4-7 shows a summary of the biosolids disposal based AHLs. Where a limitation existed for a pollutant in both 40 CFR Part 503 and Title 22, the most stringent (lowest) limit is used in the table. Details of the Title 22 land application calculations are contained in Appendix C.

Table 4-7: Summary of Biosolids Disposal Based AHLs

Pollutant	WWTF Flow (MGD) (Qwwtf)	Sludge Flow to Disposal (MTD) (Qbsol)	Land Application Standard (mg/kg) (Cbsol)	Removal Efficiency (%) (Rwwtf)	Allowable Headworks (lbs/day) (Lhw)
Arsenic	0.57	0.27	41(1)	53.13	0.05
Cadmium	0.57	0.27	28.6(2)	34.19	0.05
Chromium	0.57	0.27	2500(2)	60.19	2.50
Copper	0.57	0.27	1500(1)	86.00	1.05
Lead	0.57	0.27	234(2)	61.00	0.23
Mercury	0.57	0.27	5.6(2)	60.00	0.01
Nickel	0.57	0.27	420(1)	26.01	0.97
Selenium	0.57	0.27	10.71(2)	42.33	0.02
Silver	0.57	0.27	500(2)	99.99	0.30
Zinc	0.57	0.27	2800(1)	45.95	3.67

(1)Based on 40 CFR Part 503 regulations.
(2)Based on California Title 22 STLC calculations.

4.4 Inhibition Based AHLs

Certain pollutant concentrations in wastewater or sludge can cause operational problems for biological treatment processes. The District WWTF operates the following biological processes that may be subject to inhibition issues: activated sludge and anaerobic sludge digestion. The WWTF has not had historical issues with pollutants causing upsets of the biological processes. The EPA guidance document contains inhibition values for pollutants that have the potential to upset biological treatment processes. These inhibition limitations are converted to AHLs for the POCs using

Equation 4 and Table 4-1 from the EPA *Local Limits Development Guidance* manual.

Equation 4 – AHL based on Activated Sludge Inhibition Values

$$AHL_{act} = \frac{(8.34)(C_{act})(Q_{wwtf})}{(1-R_{prim})}$$

Where:

AHL_{act} = AHL based on activated sludge inhibition, lb/day
C_{act} = Inhibition or nitrification criterion for activated sludge, mg/L
Q_{wwtf} = WWTF average flow rate, MGD
R_{prim} = Removal efficiency from headworks to primary treatment effluent, as decimal (assumed using EPA removal values)
8.34 = Conversion factor

Table 4-8 shows the calculated AHLs based on activated sludge inhibition values.

Table 4-8: Activated Sludge Inhibition Based AHLs

Pollutant	WWTF Flow (MGD) (Qwwtf)	Activated Sludge Inhibition Level (mg/l) (Cact)	Removal Efficiency (%) (Rprim)	Allowable Headworks (lbs/day) (Lhw)
Arsenic	0.57	0.1	15.00	0.55
Cadmium	0.57	1	15.00	5.54
Chromium	0.57	1	27.00	6.46
Copper	0.57	1	22.00	6.04
Cyanide	0.57	0.1	27.00	0.65
Lead	0.57	1	57.00	10.96
Mercury	0.57	0.1	10.00	0.52
Nickel	0.57	1	14.00	5.48
Zinc	0.57	0.3	27.00	1.94
Ammonia	0.57	480	19.12	2797.09

Table 4-9 shows the calculated AHLs based on nitrification inhibition values for conservative pollutants.

Table 4-9: Nitrification Inhibition Based AHLs

Pollutant	WWTF Flow (MGD) (Qwwtf)	Nitrification Inhibition Level (mg/l) (Ccrit)	Removal Efficiency (%) (Rsec)	Allowable Headworks (lbs/day) (Lhw)
Arsenic	0.57	1.5	45.00	12.85
Cadmium	0.57	5.2	67.00	74.27
Chromium	0.57	0.25	82.00	6.55
Copper	0.57	0.05	86.00	1.68
Cyanide	0.57	0.34	69.00	5.17
Lead	0.57	0.5	61.00	6.04
Nickel	0.57	0.25	42.00	2.03
Zinc	0.57	0.08	79.00	1.80

Table 4-10 shows a summary of the inhibition based AHLs. The most restrictive (lowest) loading for each POC has been highlighted.

Table 4-10: Summary Inhibition Based AHLs

Pollutant	Allowable Headworks (ACT. SLUDGE) (lbs/day)	Allowable Headworks (NITRIF) (lbs/day)	Most Stringent (INHIBITION) (lbs/day)	Allowable Headworks (INHIBITION) (lbs/d)
Arsenic	0.55	12.85	0.55	0.55
Cadmium	5.54	74.27	5.54	5.54
Chromium	6.46	6.55	6.46	6.46
Copper	6.04	1.68	1.68	1.68
Cyanide	0.65	5.17	0.65	0.65
Lead	10.96	6.04	6.04	6.04
Mercury	0.52	-	0.52	0.52
Nickel	5.48	2.03	2.03	2.03
Zinc	1.94	1.80	1.80	1.80
Ammonia	2797.09	-	2797.09	2797.09

4.5 POC Maximum Allowable Headworks Loadings

The maximum allowable headworks loading is the lowest of the AHLs calculated for each POC. Influent loadings below the MAHL will lead to compliance with the AHLs based on all environmental and treatment plant criteria. Table 4-11 shows a summary of AHLs as well as the MAHL for each POC.

Table 4-11: Maximum Allowable Headworks Loadings

Pollutant	Allowable Headworks (WATER QUALITY) (lbs/day)	Allowable Headworks (INHIBITION) (lbs/d)	Allowable Headworks (SLUDGE) (lbs/d)	Maximum Allowable Headworks (MAHL - lbs/d)
Arsenic	0.10	0.55	0.05	0.05
Cadmium	0.02	5.54	0.05	0.02
Chromium	0.12	6.46	2.50	0.12
Copper	0.22	1.68	1.05	0.22
Cyanide	0.06	0.65	-	0.06
Lead	0.02	6.04	0.23	0.02
Mercury	0.01	0.52	0.01	0.01
Molybdenum	0.29	-	-	0.29
Nickel	0.29	2.03	0.97	0.29
Selenium	0.04	-	0.02	0.02
Silver	41.48	-	0.30	0.30
Zinc	0.87	1.80	3.67	0.87
Ammonia	106.10	2797.09	-	106.10
BOD	2516.70	-	-	2516.70
TSS	1562.26	-	-	1562.26
Boron	3.30	-	-	3.30
Chloride	568.47	-	-	568.47
FOG	942.08	-	-	942.08
EC	3770.48	-	-	3770.48
Aluminum	4.69	-	-	4.69
MBAS	24.20	-	-	24.20

5 DESIGNATING LOCAL LIMITS

After the calculation of the maximum allowable headworks loadings for the POCs, the POCs that require a local limit must be determined. The EPA guidance document recommends developing local limits for those POCs where the average influent loading exceeds 60% of the MAHL. Table 5-1 shows a comparison of MAHLs with the average headworks loadings for each POC. The highlighted POCs are those whose average influent loadings exceed 60% of the MAHL and will be evaluated for local limits.

Table 5-1: Comparison of MAHLs with Average Headworks Loadings

Pollutant	Maximum Allowable Headworks (MAHL - lbs/d)	Average Influent Loading (lbs/day)	Average Percent Loaded (%)
Arsenic	0.05	0.04	90
Cadmium	0.02	0.01	33
Chromium	0.12	0.05	38
Copper	0.22	0.41	189
Cyanide	0.06	0.02	32
Lead	0.02	0.02	82
Mercury	0.01	0.0000004	0.01
Molybdenum	0.29	0.17	59
Nickel	0.29	0.02	7
Selenium	0.02	0.06	414
Silver	0.30	0.00	1
Zinc	0.87	1.99	228
Ammonia	106.10	73.09	69
BOD	2516.70	680.64	27
TSS	1562.26	1151.31	74
Boron	3.30	0.65	20
Chloride	568.47	256.22	45
FOG	942.08	34.94	4
EC	3770.48	4259.80	113
Aluminum	4.69	3.39	72
MBAS	24.20	18.39	60

Based on the information shown in Table 5-1, no local limit is necessary for cadmium, chromium, cyanide, mercury, nickel, silver, BOD, boron, chloride, and FOG since the influent loadings are less than 60% of the influent loading. However, for those pollutants that are under 60% of the MAHL and currently have local limits, the POTW wishes to keep the local limit for those pollutants. The existing local limits for barium and iron are being removed because there is no water quality, biosolids or inhibition criteria to set a limit. The benzene and phenols local limits are being dropped because benzene was never detected in the influent or effluent of the wastewater plant.

5.1 Residential and Background Loadings

There are many other sources of wastewater to the WWTF besides the regulated industrial user flows. These other sources include domestic (residential) waste, and commercial dischargers. Because the WWTF does not control the discharges from these sources, the loading contributed from these uncontrolled sources must be deducted from the MAHL to determine the loading available for industrial dischargers.

The District has a separated sewer system so storm water is conveyed via a dedicated piping system to minimize the volume of storm water entering the sewer collection system and the WWTF. Additionally, the collection system does not have significant volumes of inflow and infiltration. Therefore, the loadings from storm water and inflow and infiltration to the WWTF are considered to be negligible.

The District has performed sampling in residential and commercial areas to determine the expected loadings from these sources. This sampling data is contained in Appendix D. The loading from these sources is calculated by Equation 5.

The District does not accept septage.

Equation 5 – Residential and Background Loading Calculation

$$L_{unc} = (C_{unc}) * (Q_{unc}) * 8.34$$

Where:

L_{unc} = Uncontrolled loading, lb/day
C_{unc} = Uncontrolled pollutant concentration, mg/L
Q_{unc} = Uncontrolled flow rate, MGD
8.34 = Unit conversion factor

A summary of the average residential and background concentrations are in Table 5-2. Details of the residential and background sampling results are in Appendix C.

It should be noted that some sample results for ammonia, aluminum and selenium were eliminated because the results were more than one standard deviation greater than the average. This was done in compliance with the EPA *Local Limits Development Guidance* manual.

The residential and background concentrations for electroconductivity, ammonia and MBAS were above what is typically seen in domestic wastewater. These pollutants were not at elevated levels in the domestic water supply. The electroconductivity in the water supply is around 300 umhos/cm. Ammonia and MBAS were not detected in the water supply. Typical domestic wastewater concentrations for ammonia and MBAS are 15 mg/L and 1 mg/L, respectively. The local limits were calculated using these elevated domestic concentrations. The District is investigating possible sources of these pollutants within the collection system.

Table 5-2: Residential and Background Pollutant Averages

Pollutant	Average	
Ammonia as N	23.96	mg/L
Cyanide (Total)	6.55	ug/L
O&G (HEM)	58.54	mg/L
MBAS	6.81	mg/L
EC	862.27	umhos/cm
Chloride	62.45	mg/L
Alumiunum	0.30	mg/L
Arsenic	0.01	mg/L
Barium	0.06	mg/L
Boron	0.38	mg/L
Cadmium	0.00	mg/L
Chromium	0.01	mg/L
Copper	0.02	mg/L
Iron	0.84	mg/L
Lead	0.00	mg/L
Mercury	0.33	ug/L
Molybdenum	0.01	mg/L
Nickel	0.00	mg/L
Selenium	0.00396	mg/L
Silver	0.00	mg/L
Zinc	0.08	mg/L
TSS	82.06	mg/L
BOD	136.82	mg/L

5.2 Commercial Loadings

There are approximately 280 commercial/non-SIU dischargers within the District. Many of these dischargers are warehouses, offices, restaurants, truck services/washes. The District conducted sampling at two of these non-SIU dischargers – Caps Sandblasting and Island Pools. These two dischargers had higher than domestic concentrations of electroconductivity and BOD. The District is constantly evaluating the non-SIU dischargers and their loading impact. In the future, the District may choose to classify some of these non-SIU dischargers as SIU dischargers.

5.3 Maximum Allowable Industrial Loadings

Maximum Allowable Industrial Loadings (MAILs) are the amount of pollutant loadings that the WWTF can receive from controlled sources (permitted industrial users). The

MAIL for each pollutant is calculated by Equation 6.

Equation 6 – MAIL Calculation

$$MAIL = MAHL\ (1-SF) - (L_{unc}+SW+GA)$$

Where:

MAIL = Maximum allowable industrial loading, lb/day
MAHL = Maximum allowable headworks loading, lb/day
SF = Safety factor, decimal
L_{unc} = Loadings from uncontrolled sources, lb/day
SW = Loadings from septage waste, lb/day
GA = Growth allowance, lb/day

5.3.1 Safety Factor and Growth Allowance

The safety factor is a percentage of the MAHL set aside to account for variability in the data analyzed and other uncertainties. The EPA recommends at least a 10 percent safety factor be used. For the purposes of this local limits study, a 10 percent safety factor will be used for all pollutants.

Growth allowance is a part of the MAHL that can be held reserve to allow for potential growth or expansion within the service area. The growth allowance is normally used for those pollutants that the WWTF was designed to remove, such as BOD, TSS, and ammonia. The District is not aware of any major growth or expansions to the wastewater collection system. Therefore, there is no loading set aside for the growth allowance.

5.4 Local Limits Allocations

There are two common approaches to allocating the available MAIL to the significant industrial users. The two common methods are uniform allocation and Industrial User specific allocation. Different allocation methods can be used for each pollutant.

5.4.1 Uniform Allocation

The uniform allocation method yields one limit per pollutant that will apply to all SIUs. This allocation method requires that the MAIL for the pollutant be divided by the total flow from all SIUs, even those that do not discharge the pollutant. This method can be overly stringent because some IUs that do not discharge a pollutant will be given an allocation of the MAIL that they may not need. Equation 7 shows the method to calculate a local limit using the uniform allocation method.

Equation 7 – Uniform Allocation Calculation

$$C_{lim} = \quad MAIL\ /\ [(Q_{siu}) * 8.34]$$

Where:

C_{lim} = Uniform concentration limit, mg/L

MAIL = Maximum allowable industrial loading, lb/day
Q_{siu} = Total flow rate from SIUs, MGD
8.34 = Unit conversion factor

5.4.2 IU Specific Allocation (Contributary Flow)

There are two methods to divide the MAIL for each pollutant among only the SIUs that discharge that particular pollutant. These methods develop SIU-specific discharge limits. Any SIU that discharges at or below the background (domestic) level is given a background allocation.

The SIU Contributory Flow method is similar to the Uniform Allocation method except that the portion of the MAILs above the background level is divided by the flow rate from those SIUs discharging the pollutant above background. Equation 8 shows the SIU Contributory Flow Allocation calculation.

Equation 8 – SIU Contributory Flow Allocation Calculation

$$C_{lim} = [MAIL - L_{back}] \ / \ [(Q_{siupol}) * 8.34]$$

Where:

C_{lim} = Contributory flow limit, mg/L
MAIL = Maximum allowable industrial loading, lb/day
L_{back} = Background loading allocation for SIUs for which no contributory flow limit is being established for that pollutant, lb/day
Q_{siupol} = Total flow rate from SIUs discharging the pollutant, MGD
8.34 = Unit conversion factor

5.4.3 The Mass Proportion Allocation

The mass proportion allocation method allocates the MAIL to each SIU in proportion to the SIU's loading of that pollutant. To calculate the allowable loading for a SIU the portion of the MAIL above background is multiplied by the ratio of the current loading from SIU X to the current total loading of a pollutant from all SIUs. This calculation is shown in Equation 9.

Equation 9 – Mass Proportion Allocation Calculation

$$L_{allX} = [L_{currX} / L_{currT}] \ * \ [MAIL - L_{back}]$$

Where:

L_{allX} = Allowable loading allocated to SIU X, lb/day
L_{currX} = Current loading from SIU X, lb/day
MAIL = Maximum allowable industrial loading, lb/day
L_{back} = Background loading allocation for SIUs for which no contributory flow limit is being established for that pollutant, lb/day

Equation 10 shows the conversion of the mass proportion allocation to a concentration.

Equation 10 – Mass Proportion Conversion to Concentration Limit

$$C_{limX} = L_{allX} / [(Q_X) * 8.34]$$

Where:

C_{limX} = Discharge limit for SIU X, mg/L
L_{allX} = Allowable loading allocated to SIU X, lb/day
Q_X = Flow rate from SIU X, MGD
8.34 = Unit conversion factor

5.5 Uniform Allocation of Local Limits

Table 5-3 is a summary of the collected information and the proposed local limits based on the uniform allocation method. The details of the calculations in Table 5-3 are shown in Appendix F.

Table 5-3: Uniform Allocation of Local Limits

Pollutant	Maximum Allowable Headworks (MAHL - lbs/d)	Safety Factor (%) (SF)	Growth Allowance (%) (GA)	Nonindustrial Concentration (mg/l) (Cdom)	Nonindustrial Flow (MGD) (Qdom)	Nonindustrial Loading (lbs/day) (Ldom)	Allowable Industrial Loading (MAIL - lbs/day)	Local Limit (mg/l) (Cind)	Basis of Limitation
Arsenic	0.05	10	0	0.0061	0.32	0.02	0.03	0.01	Sludge
Cadmium	0.02	10	0	0.0003	0.32	0.00	0.01	0.01	Water Quality
Chromium	0.12	10	0	0.0060	0.32	0.02	0.09	0.04	Water Quality
Copper	0.22	10	0	0.0171	0.32	0.04	0.15	0.07	Water Quality
Cyanide	0.06	10	0	0.0065	0.32	0.02	0.04	0.02	Water Quality
Lead	0.02	10	0	0.0027	0.32	0.01	0.01	0.01	Water Quality
Mercury	0.01	10	0	0.0003	0.32	0.00	0.00	0.00	Sludge
Molybdenum	0.29	10	0	0.0142	0.32	0.04	0.22	0.11	Water Quality
Nickel	0.29	10	0	0.0036	0.32	0.01	0.25	0.12	Water Quality
Selenium	0.02	10	0	0.0040	0.32	0.01	0.00	0.00	Sludge
Silver	0.30	10	0	0.0001	0.32	0.00	0.27	0.13	Sludge
Zinc	0.87	10	0	0.0775	0.32	0.20	0.58	0.28	Water Quality
Ammonia	106.10	10	0	23.9588	0.32	63.01	32.48	15.59	Water Quality
BOD	2516.70	10	0	136.82	0.32	359.84	1905.19	914.61	Water Quality
TSS	1562.26	10	0	82.06	0.32	215.83	1190.20	571.37	Water Quality
Boron	3.30	10	0	0.38	0.32	1.01	1.96	0.94	Water Quality
Chloride	568.47	10	0	62.45	0.32	164.26	347.36	166.76	Water Quality
FOG	942.08	10	0	58.54	0.32	153.97	693.90	333.12	Water Quality
EC	3770.48	10	0	862.27	0.32	2267.82	1125.62	540.37	Water Quality
Aluminum	4.69	10	0	0.30	0.32	0.79	3.43	1.65	Water Quality
MBAS	24.20	10	0	6.81	0.32	17.92	3.86	1.85	Water Quality

5.6 Comparison of Proposed and Existing Limits

Table 5-4 shows a comparison of the proposed local limits to the existing local limits and calculated local limits. Existing local limits for barium, benzene and phenols have been eliminated. Limitations have been added for ammonia, MBAS, cyanide, molybdenum and chloride. Proposed local limits that are greater than the existing local limits are recommended to remain at the existing local limit value to prevent any relaxing of the local limits (anti-backsliding). Table 5-4 shows the recommended local limits based upon this evaluation.

Table 5-4: Comparison of Existing and Proposed Local Limits

Pollutant	Existing Local Limit	Calculated Local Limit	Allocation Method	Proposed Local Limit
Aluminum	5 mg/L	1.65 mg/L	Uniform	1.65 mg/L
Arsenic	5 mg/L	0.01 mg/L	Uniform	0.01 mg/L
Barium	10 mg/L	Not needed	Uniform	None
Benzene	0.02 mg/L	Not needed	Uniform	None
Boron	8 mg/L	0.94 mg/L	Uniform	0.94 mg/L
Cadmium	0.1 mg/L	0.01 mg/L	Uniform	0.01 mg/L
Chromium	5 mg/L	0.04 mg/L	Uniform	0.04 mg/L
Copper	5 mg/L	0.07 mg/L	Uniform	0.07 mg/L
Iron	1 mg/L	None	Uniform	None
Lead	5 mg/L	0.01 mg/L	Uniform	0.01 mg/L
Mercury	0.2 mg/L	0.002 mg/L	Uniform	0.002 mg/L
Nickel	5 mg/L	0.12 mg/L	Uniform	0.12 mg/L
Selenium	1 mg/L	0.001 mg/L	Uniform	0.001 mg/L
Silver	5 mg/L	0.13 mg/L	Uniform	0.13 mg/L
Zinc	5 mg/L	0.28 mg/L	Uniform	0.28 mg/L
Phenols	1 mg/L	None	Uniform	None
Oil & Grease	100 mg/L	333 mg/L	Uniform	200 mg/L
BOD_5	1000 mg/L	915 mg/L	Uniform	900 mg/L
TSS	1000 mg/L	571 mg/L	Uniform	570 mg/L
Ammonia	None	15.59 mg/L	Uniform	15.59 mg/L
EC	850 umhos/cm	850 umhos/cm*	Uniform	850 umhos/cm*
MBAS	None	1.85 mg/L	Uniform	1.85 mg/L
Cyanide	None	0.02 mg/L	Uniform	0.02 mg/L
Molybdenum	None	0.11 mg/L	Uniform	0.11 mg/L
Chloride	None	167 mg/L	Uniform	167 mg/L

* Interim limit

5.7 Protection of the Treatment Works, Collection System, and Workers

5.7.1 Fume Toxicity

There are certain pollutants that can cause a fire or explosion, corrosive structural damage at the treatment plant, obstruction of flow, inhibition of biological activity due to heat, or discharges that cause the formation of toxic gases, vapors, or fumes.

Explosive and flammable pollutants discharged to a WWTF can threaten the integrity of the collection system and the health and safety of the workers. Under the right conditions, the accumulation of such pollutants in treatment works can produce explosions or fires. There are no POCs listed in Table 2-6 that are listed in the EPA Guidance Manual as being potentially explosive.

The fume toxicity level of a pollutant discharged to a WWTF indicates the likelihood that a WWTF worker will suffer an adverse health effect when the level is approached or exceeded. This level can be measured by the time weighted average threshold limit value (TWA-TLV), which is the concentration to which a worker can be exposed for eight hours per day, 40 hours per week and not have any acute or chronic adverse health effects. Similarly, short-term exposure limits (STELs) are concentrations to which a worker should not be exposed for longer than 15 minutes or more than four times per day (with at least one hour between each exposure).

There were two POCs identified in Table 2-5 that have fume toxicity exposure limits that indicate they may create a toxicity exposure issue for collection system workers. The three POCs were chloroform, ethylbenzene, and toluene. The fume toxicity discharge screening level can be calculated using Equation 11. The discharge screening level is the concentration in the treatment works above which a local limit may be necessary.

Equation 11 – Calculation of Discharge Screening Level

$$C_{lvl} = C_{vap} / H$$

Where:

C_{lvl} = Discharge screening level, mg/L
C_{vap} = Exposure limit at 1 atm and 25°C, mg/m^3
H = Henry's Law Constant, (mg/m^3)/(mg/L)

Table 5-5: Fume Toxicity Discharge Screening Levels

Pollutant	Exposure limit (mg/m^3)	Henry's Law Constant (mg/m^3)/(mg/L)	Discharge Screening Level (mg/L)	Maximum Concentration Sampled (mg/L)
Chloroform	9.76	163.5	0.06	0.000052
Toluene	565.5	272.5	2.075	0.00018

Based on the maximum concentrations sampled in the treatment works and the fume toxicity discharge screening levels, no local limits are needed for chloroform or toluene based upon the protection of the treatment works, collection system and workers.

5.7.2 Oil and Grease

Based on the uniform allocation of the oil and grease maximum allowable industrial loading, the local limit would be 237 mg/L. However, by its very nature, grease will adhere to many types of surfaces with sewers especially vulnerable to grease build-up. The cool internal surfaces of sewers provide ideal locations on which thin layers of grease can build up. Over a period of time, clumps of grease will build up to the point that the sewer can be completely choked. Grease also accumulates due to cooling and dilution of surfactants, that allows the grease to separate and collect on all sewer system surfaces, including wetwells at pump stations, where controls can become fouled and prevent pumps from operating properly.

Based on the residential (background loading) monitoring data, the average background oil and grease concentration is 58.5 mg/L. The average SIU concentration for oil and grease is 83 mg/L. The average oil and grease concentration into the WWTF is 14 mg/L.

The most commonly used local limit for oil & grease is 100 mg/L. The District currently has a limit of 100 mg/L. The 100 mg/L limit is not based upon any empirical evidence but rather on general correlations and an industry consensus that this level limits the buildup of oil and grease in the collection system. The federal pretreatment regulations, 40 CFR 403.5(b)(6), prohibit "petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through." In most municipalities, oil and grease limits of 100 mg/L to 300 mg/L are protective of the collection system. Limits may need to vary depending on different factors, such as the number of wet wells, type of sewers, slope of sewers, flow in sewers, maintenance of the sewers, and history of grease related clogs.

Based upon the concentrations of oil and grease from residential and industrial sources and the history of grease, an increased local limit of 200 mg/L is protective of the collection system and should be enacted.

5.8 Electroconductivity Limitation

The District currently has an electroconductivity local limit of 850 umhos/cm. Since this limit has been implemented, the District has been in compliance with the wastewater treatment plant monthly electroconductivity discharge limitation.

For the purposes of the local limits evaluation, the water quality standard for electroconductivity was based on the source water quality source plus 500 umhos/cm. The source water quality electroconductivity is approximately 300 umhos/cm. Therefore, the standard used for the local limits calculation was 800 umhos/cm. Based on the uniform allocation method, the electroconductivity local limit would be 540 umhos/cm.

The average electroconductivity from the background/domestic monitoring was 826 umhos/cm. This elevated background conductivity level is resulting in the low calculated electroconductivity local limit. At this time, it is not understood what is causing the over 500 umhos/cm increase from the source water to what is discharged from residential users.

Since the calculated electroconductivity local limit of 540 umhos/cm is not feasible for the existing SIUs and the background conductivity loading is greater than the MAHL for electroconductivity, the District is proposing keeping the existing local limit of 850 umhos/cm as an interim limit. Based upon the EPA Local Limits Development Guidance manual for these cases, while the interim is in effect the District will perform the following items over the next six months:

1) Evaluate the domestic/background sampling sites to assure that no commercial/industrial discharges are discharging to the sampling sites.
2) Collect additional sampling data to refine the existing data.
3) Collect samples from the water distribution system and within residences.
4) Evaluate other potential sources within the collection system – such as school, community center, community pool, water softeners.

Within 6 months of the above data being collected, the District will:

5) Investigate residential dischargers to determine potential sources. Potentially implement public education or Best Management Practices to lower the background loading.
6) Track the effects of any changes made.

In addition to implementing these steps for electroconductivity, the District will also investigate ammonia and MBAS. Ammonia and MBAS background concentrations are higher than expected but are not significantly impacting the local limits for those pollutants.

5.9 Batch Dischargers and Small Dischargers

Batch Dischargers

There are batch dischargers within the District that discharge elevated concentrations of BOD and EC. The BOD concentrations do not cause any adverse issues at the wastewater treatment plant. The current BOD loading at the wastewater plant is 27% of MAHL. For these batch dischargers, the District is proposing a mass BOD limitation. Due to issues with EC, there will be no allowance for a higher EC limitation.

The local limit for BOD in the ordinance will be the concentration based standard shown in Table 5-4. Additionally, a statement will be added allowing the District to allocate limits on a mass basis, on a case by case basis for the batch dischargers.

For batch dischargers, the following will be implemented:

1. Define “batch discharge” as – a discrete or discontinuous short-term discharge to the sewer, often characterized by a discharge of all or most of the contents of a vessel. A batch discharge is not a part of a series of episodic discharges taking place with little time between each episode.

2. The batch discharge should be limited to 40,000 gal/month and two discharges/month.

3. For larger volume batch dischargers (greater than 10,000 gallons per batch), the batch will be spread out over at least three calendar days.

4. Yearly (at a minimum), the District will evaluate the BOD influent loading to the wastewater plant. If BOD loading approaches 40% of the MAHL (27% currently), the BOD mass limit will need to be re-evaluated.

For example, the BOD MAIL is 1915.59 lb/day. The current influent BOD to WWTP accounts for approximately 27% of allowable load. Looking at a 30 day period, the MAIL total would be 57,468 lbs. Assuming a worse case discharge from Kinder Morgan of 20,000 gallon batch at 7,100 mg/L BOD (1,185 lbs BOD/batch). Two batch discharges at that concentration and volume would equate to 4.1% of the total BOD MAIL to the WWTP in a 30 day period.

Small Dischargers

For those SIUs classified as small dischargers, at or less than 1000 gpd, the District is proposing to allow these SIUs to discharge concentrations 5 times the proposed local limits. Electroconductivity is exempted from this. These small dischargers discharging 5 times the local limit would keep their contribution to the MAHL below 2%.

For small dischargers, the following will be implemented:

1. The process flow from the SIU must be at or below 1,000 gpd.

2. The limits in the small discharger permit would be concentration based, to make compliance determination easier and more consistent.

3. Small dischargers should be required to install a flow meter and submit the meter readings to the District. The District would check the meter readings against the water usage to ensure applicability.

5.10 Public Participation

The Malaga County Water District is required to submit the Local Discharge Limits Development report to the Approval Authority (RWQCB) for review and approval. It is understood that since the recommended local limits constitute a substantial modification of the local limits, as defined by 40 CFR 403.18(c), the Approval Authority (RWQCB) is required to issue a public notice of the request for a modification.

The EPA General Pretreatment Regulations encourages public participation by requiring public notices or hearings for local limits development. The Malaga County Water District Board of Directors will need to take formal action to make the Local Discharge Limits Evaluation Report available to the public and invite public comments for a period of time defined by legal counsel. A public hearing will be conducted as an opportunity to receive comments and questions. Proof of action and publication shall be included in the final report.

In accordance with federal regulations (40 CFR 403.5(c)(3), the Malaga County Water District shall notify existing SIUs and other interested parties, individually, of the proposed limits and the announcement of a public comment period. The public comment period can be open while the proposed limits are submitted to the Approval Authority for review.

A record of all comments received and the corresponding responses shall be included in the final report.

6 IMPLEMENTATION

6.1 Implementation

Implementation requires that local limits revisions are ultimately incorporated to the sewer use ordinance and pretreatment ordinance. The District may then legally implement and enforce pretreatment requirements.

Next steps for the process include the following:

- Submit the draft Local Discharge Limits Development report to the RWQCB for review, comment, and approval. The District would respond to the RWQCB requests for additional information or other comments.

- Proceed with the draft Program to investigate the high background loading of ammonia, MBAS, and electroconductivity. The high background loading has a significant impact on the local limits determination for these constituents. Notify the existing SIU's, and other interested parties of the proposed local limits as per legal requirements. The notification may include informing connections of specific impacts of the proposed local limits to their specific pretreatment requirements. Several connections will be required to follow a compliance plan in order to improve pretreatment facilities sufficiently to meet the proposed limits.

- Make the proposed local limits available to the public for review and comment. Publish a notice for a public hearing and a public review comment for the proposed local limits.

- Conduct a public hearing to inform the public of the proposed local limits and receive comments.

- Upon Approval by the Approval Authority (RWQCB) the District would adopt the revised limits and proceed with the necessary notifications and public comment period to revise the Sewer Use Ordinance and Pretreatment Program. The revised Sewer Use Ordinance and Pretreatment Program would also be submitted to the RWQCB for review and approval.

- Upon receipt of approval from the Approval Authority (RWQCB) the District would adopt the revised Sewer Use Ordnance and Pretreatment Program.

- New Non Residential Wastewater Discharge Permits, in accordance with the new Ordinance, would be issued to all Non Residential customers.

- It is noted that several new Non Residential Wastewater Discharge Permits may include a Compliance Plan for the connection to be able to meet the revised limits.

- It is recommended that the District conduct an annual review of the headworks loading for the local limits constituents.

7 BIBLIOGRAPHY/REFERENCES

United States. Environmental Protection Agency Local Limits Development Guidance. Washington, D.C., July 2004.

APPENDIX A – WWTF Sampling Data

APPENDIX B – WWTF Biosolids Data

APPENDIX C – Residential Background Sampling Data

APPENDIX D – Commercial Sampling Data

APPENDIX E – Local Limits Calculations (Uniform Allocation)

APPENDIX F – SIU Sampling Data

APPENDIX G – Malaga County Water District Waste Discharge Requirements (WDR No. R5-2014-0145, NPDES No. CA0084239)

APPENDIX H – Malaga County Water District Waste Pretreatment Program

APPENDIX I – Malaga County Water District Sampling Plan

Attachment B Malaga Local Limits Calculations (July 2016)

INFLUENT CONSTITUENT

DATE	DAY	Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW (calc.)	BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L
		Daily			Weekly												
Discharge Limits				1.2 MGD													
1/1/2012	sun	0.85	0.273	0.58													
1/2/2012	m	0.86	0.273	0.73													
1/3/2012	tu	1	0.261	0.70													
1/4/2012	w	0.96	0.262	0.62	120		120										
1/5/2012	th	0.88	0.248	0.71													
1/6/2012	f	0.96	0.259	0.70													
1/7/2012	sat	0.87	0.251	0.62													
1/8/2012	sun	0.68	0.242	0.44													
1/9/2012	m	0.87	0.238	0.63													
########	tu	0.86	0.238	0.62	110		110										
########	w	0.8	0.25	0.55													
########	th	0.99	0.245	0.75													
########	f	0.9	0.261	0.64													
########	sat	0.86	0.264	0.60													
########	sun	0.86	0.257	0.60													
########	m	0.86	0.264	0.60													
########	tu	0.88	0.26	0.62													
########	w	0.85	0.259	0.59													
########	th	0.91	0.262	0.65	98		150										
########	f	1.03	0.256	0.77													
########	sat	0.86	0.241	0.62													
########	sun	0.9	0.258	0.64													
########	m	0.89	0.266	0.62													
########	tu	0.87	0.262	0.61													
########	w	0.89	0.262	0.63	84		120										
########	th	0.92	0.258	0.66													
########	F	0.93	0.273	0.66													
########	sat	0.85	0.259	0.59													
########	sun	0.88	0.259	0.62													
########	m	0.83	0.261	0.57													
########	tu	0.86	0.261	0.60													
2/1/2012	w	0.9	0.264	0.64	91		130										
2/2/2012	th	0.9	0.274	0.63													
2/3/2012	f	0.82	0.258	0.56													
2/4/2012	sat	0.81	0.259	0.55													
2/5/2012	sun	0.77	0.26	0.51													
2/6/2012	m	0.88	0.266	0.61													
2/7/2012	tu	0.76	0.274	0.49													
2/8/2012	w	0.81	0.26	0.55													
2/9/2012	th	0.84	0.251	0.59	130		160										
########	f	0.79	0.234	0.56													
########	sat	0.84	0.241	0.60													
########	sun	0.84	0.236	0.60													
########	m	0.86	0.236	0.62													
########	tu	0.88	0.242	0.64													
########	w	0.88	0.251	0.63	88		130										
########	th	0.89	0.25	0.64													
########	f	0.87	0.254	0.62													
########	sat	0.85	0.255	0.60													
########	sun	0.81	0.241	0.57													
########	m	0.85	0.244	0.61													
########	tu	0.89	0.259	0.63													
########	w	0.9	0.261	0.64	140		220										
########	th	0.88	0.267	0.61													
########	f	0.95	0.274	0.68													
########	sat	0.8	0.259	0.54													
########	sun	0.79	0.241	0.55													
########	m	0.82	0.242	0.58													
########	tu	0.83	0.255	0.58													
########	w	1.13	0.267	0.86													
3/1/2012	thu	0.87	0.259	0.61	360		360										
3/2/2012	f	0.75	0.254	0.50													
3/3/2012	sat	0.94	0.245	0.70													
3/4/2012	sun	0.83	0.25	0.58													
3/5/2012	m	0.86	0.229	0.63													
3/6/2012	tu	0.85	0.215	0.64													
3/7/2012	w	0.86	0.249	0.61	80		150										
3/8/2012	thu	0.78	0.208	0.57													
3/9/2012	f	0.82	0.209	0.61													
########	sat	0.8	0.215	0.59													
########	sun	0.83	0.227	0.60													
########	m	0.91	0.232	0.68													
########	tu	0.9	0.235	0.67													
########	w	0.92	0.242	0.68	130		100										
########	thu	0.91	0.238	0.67													
########	f	0.99	0.242	0.75													
########	sat	0.96	0.245	0.72													
########	sun	0.84	0.25	0.59													
########	m	0.89	0.242	0.65													
########	tu	0.87	0.229	0.64													
########	w	0.87	0.23	0.64	110		130										
########	thu	0.83	0.229	0.60													
########	f	0.86	0.245	0.62													
########	sat	0.81	0.247	0.56													

SECONDARY EFFLUENT CONSTITUENT

DATE	DAY	FLOW MGD (Q)	pH	EC umhos/	BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	nmonia (Tot (as N) mg/L	NITRATE (as N) mg/L	MDL
		Daily			Weekly										Quarterly	
Discharge Limits		0.85 max	6.5-8.3	1000 max[1]	40 ave[2]	1	Q*BOD*2. ÷0.264	40 ave[2]	4	Q*TSS*2. ÷0.264	0.2 ave[3]	0.1				
1/1/2012	sun	0.580		750												
1/2/2012	m	0.730		730												
1/3/2012	tu	0.700		700												
1/4/2012	w	0.620		740	1.7		8.78	4.2		21.70	< MDL					
1/5/2012	th	0.710		750												
1/6/2012	f	0.700		630												
1/7/2012	sat	0.620		630												
1/8/2012	sun	0.440		630												
1/9/2012	m	0.630		590												
########	tu	0.620		590	3.4		17.57	4.8		24.80	< MDL					
########	w	0.550		620												
########	th	0.750		660												
########	f	0.640		700												
########	sat	0.600		700												
########	sun	0.600		680												
########	m	0.600		670												
########	tu	0.620		740												
########	w	0.590		760												
########	th	0.650		840	1		5.42	2.8		15.17	< MDL					
########	f	0.770		850												
########	sat	0.620		760												
########	sun	0.640		720												
########	m	0.620		740												
########	tu	0.610		720												
########	w	0.630		740	1		5.25	3		15.75	< MDL					
########	th	0.660		770												
########	F	0.660		770												
########	sat	0.590		760												
########	sun	0.620		740												
########	m	0.570		740												
########	tu	0.600		750												
2/1/2012	w	0.197		710	1.7		2.50	3.6		5.80	0					
2/2/2012	th	0.207		730												
2/3/2012	f	0.237		740												
2/4/2012	sat	0.550		750												
2/5/2012	sun	0.510		710												
2/6/2012	m	0.208		700												
2/7/2012	tu	0.093		670												
2/8/2012	w	0.172		420	2.7		4.20	3.4		5.00	0					
2/9/2012	th	0.209		640												
########	f	0.190		630												
########	sat	0.227		660												
########	sun	0.258		640												
########	m	0.620		710												
########	tu	0.240		700												
########	w	0.182		660												
########	th	0.284		340	1.1		2.50	5.2		12.50	0					
########	f	0.266		720												
########	sat	0.244		720												
########	sun	0.135		710												
########	m	0.610		720												
########	tu	0.195		730												
########	w	0.240		690	1.5		3.30	4.4		9.20	0					
########	th	0.184		708												
########	f	0.306		700												
########	sat	0.165		600												
########	sun	0.193		620												
########	m	0.580		580												
########	tu	0.580		610												
########	w	0.860		620												
3/1/2012	thu	0.610		570	13		65.90	7.2		36.70	ND					
3/2/2012	f	0.500		600												
3/3/2012	sat	0.700		540												
3/4/2012	sun	0.580		600												
3/5/2012	m	0.630		620												
3/6/2012	tu	0.640		790												
3/7/2012	w	0.610		760	2.4		12.50	6		30.90	ND					
3/8/2012	thu	0.570		660												
3/9/2012	f	0.610		570												
########	sat	0.590		500												
########	sun	0.600		580												
########	m	0.280		730												
########	tu	0.302		690												
########	w	0.314		740	1		3.00	3.6		0.00						
########	thu	0.265		830												
########	f	0.310		790												
########	sat	0.720		790												
########	sun	0.590		680												
########	m	0.650		680												
########	tu	0.640		770												
########	w	0.640		840	3.1		16.70	3.6		19.20	ND					
########	thu	0.600		840												
########	f	0.620		820												
########	sat	0.560		840												

SECONDARY EFFLUENT CONSTITUENT

Annually

General Minerals (October)

Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiur (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphorus (P)	Total Alkalinity	Hardnes	Cation Anion Balance
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			

DATE	DAY	INFLUENT CONSTITUENT Daily: Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW (calc.)	Weekly: BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L
########	sun	0.87	0.257	0.61													
########	m	0.85	0.249	0.60													
########	tu	0.89	0.255	0.64	110		110										
########	w	0.96	0.247	0.71													
########	thu	0.87	0.239	0.63													
########	f	0.88	0.228	0.65													
########	sat	0.83	0.241	0.59													
4/1/2012	sun	0.83	0.249	0.58													
4/2/2012	m	0.87	0.247	0.62													
4/3/2012	tu	0.92	0.246	0.67													
4/4/2012	w	0.95	0.253	0.70	110		130										
4/5/2012	th	0.92	0.248	0.67													
4/6/2012	f	0.88	0.245	0.64													
4/7/2012	sat	0.82	0.253	0.57													
4/8/2012	sun	0.85	0.284	0.57													
4/9/2012	m	0.96	0.291	0.67	92		170										
########	tu	0.98	0.264	0.72													
########	w	1.05	0.278	0.77													
########	th	1.07	0.256	0.81													
########	f	1.03	0.204	0.83													
########	sat	1.05	0.217	0.83													
########	sun	0.8	0.206	0.59													
########	m	0.9	0.206	0.69													
########	tu	0.92	0.206	0.71													
########	w	0.93	0.221	0.71													
########	th	0.96	0.218	0.74	140		140										
########	f	0.9	0.225	0.68													
########	sat	0.88	0.217	0.66													
########	sun	0.88	0.225	0.66													
########	m	0.9	0.225	0.68													
########	tu	1	0.232	0.77													
########	w	0.96	0.224	0.74	120		250										
########	th	0.97	0.235	0.74													
########	f	0.98	0.232	0.75													
########	sat	1	0.24	0.76													
########	f	0.93	0.231	0.70													
########	sun	0.96	0.236	0.72													
5/1/2012	tu	0.99	0.24	0.75													
5/2/2012	w	0.99	0.244	0.75													
5/3/2012	th	0.94	0.234	0.71	140		160										
5/4/2012	f	0.95	0.233	0.72													
5/5/2012	sat	0.87	0.333	0.54													
5/6/2012	sun	0.88	0.236	0.64													
5/7/2012	m	0.81	0.111	0.70													
5/8/2012	tu	0.92	0.245	0.68													
5/9/2012	w	1.02	0.264	0.76	120		140										
########	th	0.93	0.252	0.68													
########	f	0.92	0.241	0.68													
########	sat	0.91	0.239	0.67													
########	sun	0.82	0.237	0.58													
########	m	0.9	0.26	0.64													
########	tu	0.9	0.215	0.69													
########	w	0.93	0.248	0.68	140		130										
########	th	0.93	0.249	0.68													
########	f	0.87	0.24	0.63													
########	sat	0.84	0.244	0.60													
########	sun	0.74	0.239	0.50													
########	m	0.79	0.246	0.54													
########	tu	0.7	0.241	0.46													
########	w	0.74	0.242	0.50	160		180										
########	th	0.76	0.249	0.51													
########	F	0.7	0.245	0.46													
########	sat	0.63	0.246	0.38													
########	sun	0.65	0.235	0.42													
########	m	0.82	0.257	0.56													
########	tu	0.87	0.253	0.62													
########	w	0.96	0.244	0.72	120		2										
########	th	0.93	0.233	0.70													
6/1/2012	f	0.95	0.236	0.71													
6/2/2012	sat	0.87	0.255	0.62													
6/3/2012	sun	0.82	0.245	0.58													
6/4/2012	m	0.95	0.254	0.70													
6/5/2012	tu	0.9	0.259	0.64													
6/6/2012	w	0.91	0.252	0.66	820		190										
6/7/2012	th	0.97	0.247	0.72													
6/8/2012	f	0.98	0.234	0.75													
6/9/2012	sat	0.87	0.243	0.63													
########	sun	0.87	0.235	0.64													
########	m	0.98	0.244	0.74													
########	tu	0.98	0.247	0.73	120		390										
########	w	1	0.231	0.77													
########	th	0.98	0.237	0.74													
########	f	0.93	0.241	0.69													
########	sat	0.9	0.248	0.65													
########	sun	0.92	0.274	0.65													
########	m	1	0.237	0.76													

DATE	DAY	SECONDARY EFFLUENT CONSTITUENT Daily: FLOW MGD (Q)	pH	EC umhos/	Weekly: BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	mmonia (Tot (as N) mg/L	Quarterly: NITRATE (as N) mg/L	MDL	SECONDARY EFFLUENT CONSTITUENT Annually, General Minerals (October): Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiu (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphoru (P)	Total Alkalinity	Hardnes	Cation Anion
########	sun	0.610		830																								
########	m	0.600		790																								
########	tu	0.640		820	2.8		15.00	4.6		24.20	ND				15													
########	w	0.710		820																								
########	thu	0.630		820																								
########	f	0.650		830																								
########	sat	0.590		830																								
4/1/2012	sun	0.58		800																								
4/2/2012	m	0.62		480																								
4/3/2012	tu	0.67		820																								
4/4/2012	w	0.70		840	3		17.50	7		40.90	ND																	
4/5/2012	th	0.67		840																								
4/6/2012	f	0.64		880																								
4/7/2012	sat	0.57		850																								
4/8/2012	sun	0.57		810																								
4/9/2012	m	0.67		790	ND		ND	4		22.50	ND																	
########	tu	0.72		810																								
########	w	0.77		840																								
########	th	0.81		800																								
########	f	0.83		790																								
########	sat	0.83		650																								
########	sun	0.59		660																								
########	m	0.69		720																								
########	tu	0.71		760																								
########	w	0.71		800																								
########	th	0.74		780	2.1		13.30	4.8		30.00	ND																	
########	f	0.68		730																								
########	sat	0.66		790																								
########	sun	0.66		780																								
########	m	0.68		760																								
########	tu	0.77		770																								
########	w	0.74		770	ND		ND	4		25.00	ND																	
########	th	0.74		730																								
########	f	0.75		710																								
########	sat	0.76		730																								
########	f	0.70		700																								
########	sun	0.72		710																								
5/1/2012	tu	0.75		730																								
5/2/2012	w	0.75		720																								
5/3/2012	th	0.71		740	ND		ND	2.8		16.50	ND																	
5/4/2012	f	0.72		740																								
5/5/2012	sat	0.54		740																								
5/6/2012	sun	0.64		760																								
5/7/2012	m	0.70		740																								
5/8/2012	tu	0.68		770																								
5/9/2012	w	0.76		750	1.1		6.90	1.2		7.60	ND																	
########	th	0.68		780																								
########	f	0.68		770																								
########	sat	0.67		770																								
########	sun	0.58		780																								
########	m	0.64		780																								
########	tu	0.69		790																								
########	w	0.68		780	5.3		30.00	5		28.30	ND																	
########	th	0.68		760																								
########	f	0.63		780																								
########	sat	0.60		760																								
########	sun	0.50		730																								
########	m	0.54		720																								
########	tu	0.46		700																								
########	w	0.50		670	1.1		4.50	2.6		10.80	ND																	
########	th	0.51		700																								
########	F	0.46		700																								
########	sat	0.38		690																								
########	sun	0.42		700																								
########	m	0.56		670																								
########	tu	0.62		620																								
########	w	0.72		650	2.3		13.80	2		12.00	ND																	
########	th	0.70		690																								
6/1/2012	f	0.710		750																								
6/2/2012	sat	0.620		750																								
6/3/2012	sun	0.580		760																								
6/4/2012	m	0.700		760																								
6/5/2012	tu	0.640		770																								
6/6/2012	w	0.660		780	ND		ND	8		42.20	ND																	
6/7/2012	th	0.720		790																								
6/8/2012	f	0.750		770																								
6/9/2012	sat	0.630		780																								
########	sun	0.640		750																								
########	m	0.740		750																								
########	tu	0.730		750	ND		ND	4.2		25.90	ND				64													
########	w	0.770		760																								
########	th	0.740		760																								
########	f	0.690		730																								
########	sat	0.650		750																								
########	sun	0.650		730																								
########	m	0.760		730																								

INFLUENT CONSTITUENT

DATE	DAY	Daily: Parshall Flume Flow MGD	Daily: Recirculated Grit Flow MGD	Daily: TOTAL FLOW (calc.)	Weekly: BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	nmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L
########	tu	1	0.258	0.74													
########	w	0.99	0.234	0.76	110		120										
########	th	0.9	0.239	0.66													
########	F	0.94	0.242	0.70													
########	sat	0.85	0.25	0.60													
########	sun	0.79	0.221	0.57													
########	m	0.89	0.231	0.66													
########	tu	0.92	0.238	0.68													
########	w	0.93	0.237	0.69	95		93										
########	th	0.96	0.228	0.73													
########	F	0.97	0.248	0.72													
########	mon	0.88	0.238	0.64													
7/1/2012	sun	0.89	0.238	0.65													
7/2/2012	m	0.95	0.232	0.72	75		100										
7/3/2012	tu	0.99	0.231	0.76													
7/4/2012	w	0.85	0.238	0.61													
7/5/2012	th	0.95	0.237	0.71													
7/6/2012	f	0.94	0.227	0.71													
7/7/2012	sat	0.87	0.228	0.64													
7/8/2012	sun	0.85	0.228	0.62													
7/9/2012	m	0.89	0.218	0.67													
########	tu	0.95	0.228	0.72	88		110										
########	w	0.87	0.223	0.65													
########	th	0.9	0.225	0.68													
########	f	0.96	0.23	0.73													
########	sat	0.86	0.228	0.63													
########	sun	0.77	0.2	0.57													
########	m	0.97	0.2	0.77													
########	tu	0.87	0.212	0.66													
########	w	0.88	0.233	0.65	67		120										
########	th	1.04	0.242	0.80													
########	f	0.83	0.214	0.62													
########	sat	0.79	0.223	0.57													
########	sun	0.79	0.212	0.58													
########	m	0.89	0.213	0.68													
########	tu	0.93	0.222	0.71	140		150										
########	w	0.93	0.222	0.71													
########	th	0.68	0.176	0.50													
########	F	0.9	0.231	0.67													
########	sat	0.77	0.221	0.55													
########	sun	0.79	0.215	0.58													
########	m	0.92	0.224	0.70													
########	tu	0.92	0.233	0.69													
8/1/2012	w	0.95	0.224	0.73	120		200										
8/2/2012	th	0.95	0.233	0.72													
8/3/2012	f	0.95	0.237	0.71													
8/4/2012	sat	0.86	0.247	0.61													
8/5/2012	sun	0.87	0.242	0.63													
8/6/2012	m	0.97	0.245	0.73													
8/7/2012	tu	0.92	0.25	0.67													
8/8/2012	w	0.9	0.22	0.68	62		140										
8/9/2012	th	0.94	0.267	0.67													
########	f	0.89	0.229	0.66													
########	sat	0.82	0.231	0.59													
########	sun	0.81	0.236	0.57													
########	m	0.97	0.247	0.72													
########	tu	0.87	0.234	0.64													
########	w	0.92	0.239	0.68	170		140										
########	th	0.88	0.231	0.65													
########	f	0.95	0.241	0.71													
########	sat	0.81	0.234	0.58													
########	sun	0.81	0.222	0.59													
########	m	0.91	0.248	0.66													
########	tu	0.95	0.274	0.68													
########	w	0.9	0.258	0.64	ND		250										
########	th	0.9	0.251	0.65													
########	f	0.9	0.251	0.65													
########	sat	0.91	0.25	0.66													
########	sun	0.77	0.228	0.54													
########	m	0.78	0.223	0.56													
########	tu	0.84	0.215	0.63													
########	w	0.86	0.22	0.64	78		230										
########	th	0.83	0.179	0.65													
########	F	0.69	0.232	0.46													
9/1/2012	sun	0.69	0.232	0.458													
9/2/2012	m	0.69	0.24	0.45													
9/3/2012	tu	0.69	0.244	0.446													
9/4/2012	w	0.68	0.249	0.431													
9/5/2012	th	0.74	0.253	0.487	120		190										
9/6/2012	f	0.77	0.253	0.517													
9/7/2012	sat	0.84	0.249	0.591													
9/8/2012	sun	0.77	0.247	0.523													
9/9/2012	m	0.75	0.237	0.513													
########	tu	0.80	0.239	0.561													
########	w	0.89	0.233	0.657													
########	th	0.89	0.246	0.644													

SECONDARY EFFLUENT CONSTITUENT

DATE	DAY	Daily: FLOW MGD (Q)	pH	EC umhos/	Weekly: BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	nmonia (To (as N) mg/L	Quarterly: NITRATE (as N) mg/L	MDL
########	tu	0.740		740												
########	w	0.760		770	1.1		6.70	3		19.20	ND					
########	th	0.660		800												
########	F	0.700		800												
########	sat	0.600		820												
########	sun	0.570		790												
########	m	0.660		800												
########	tu	0.680		790												
########	w	0.690		820	ND		ND	ND		ND	ND					
########	th	0.730		780												
########	F	0.720		790												
########	mon	0.640		790												
7/1/2012	sun	0.65		770												
7/2/2012	m	0.72		770	1.2		7.20	2.8		16.80	ND					
7/3/2012	tu	0.76		780												
7/4/2012	w	0.61		780												
7/5/2012	th	0.71		770												
7/6/2012	f	0.71		800												
7/7/2012	sat	0.64		800												
7/8/2012	sun	0.62		810												
7/9/2012	m	0.67		790												
########	tu	0.72		800	1.5		9.00	3.4		20.40	ND					
########	w	0.65		810												
########	th	0.68		760												
########	f	0.73		790												
########	sat	0.63		770												
########	sun	0.57		780												
########	m	0.77		760												
########	tu	0.66		790												
########	w	0.65		770	ND		######	1.2		6.50	ND					
########	th	0.80		780												
########	f	0.62		790												
########	sat	0.57		780												
########	sun	0.58		780												
########	m	0.68		770												
########	tu	0.71		780	2.6		15.38	6.8		40.23	ND					
########	w	0.71		760												
########	th	0.50		760												
########	F	0.67		760												
########	sat	0.55		780												
########	sun	0.58		760												
########	m	0.70		770												
########	tu	0.69		760												
8/1/2012	w	0.73		760	1.5		9.13	1.8		10.95	ND					
8/2/2012	th	0.72		750												
8/3/2012	f	0.71		750												
8/4/2012	sat	0.61		740												
8/5/2012	sun	0.63		720												
8/6/2012	m	0.73		710												
8/7/2012	tu	0.67		740												
8/8/2012	w	0.68		730												
8/9/2012	th	0.67		750												
########	f	0.66		740												
########	sat	0.59		740												
########	sun	0.57		750												
########	m	0.72		750												
########	tu	0.64		750												
########	w	0.68		760	2.2		12.47	4		22.67	ND					
########	th	0.65		760												
########	f	0.71		760												
########	sat	0.58		750												
########	sun	0.59		740												
########	m	0.66		760												
########	tu	0.68		740												
########	w	0.64		740	ND		######	4.8		25.60	ND					
########	th	0.65		760												
########	f	0.65		760												
########	sat	0.65		760												
########	sun	0.54		780												
########	m	0.56		770												
########	tu	0.63		800												
########	w	0.64		800	ND		######	5.4		28.80	ND					
########	th	0.65		820												
########	F	0.46		800												
9/1/2012	sun	0.458		800												
9/2/2012	m	0.450		770												
9/3/2012	tu	0.446		740												
9/4/2012	w	0.431		720												
9/5/2012	th	0.487		700	ND			5.6		22.00	ND					
9/6/2012	f	0.517		660											15	
9/7/2012	sat	0.591		640												
9/8/2012	sun	0.523		600												
9/9/2012	m	0.513		610												
########	tu	0.561		610												
########	w	0.657		680												
########	th	0.644		740												

SECONDARY EFFLUENT CONSTITUENT

Annually

General Minerals (October)

Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiur (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphoru (P)	Total Alkalinity	Hardnes	Cation Anion

DATE	DAY	INFLUENT CONSTITUENT Daily			Weekly												
		Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW (calc.)	BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L
########	f	0.90	0.207	0.693	100		98										
########	sat	0.89	0.22	0.67													
########	sun	0.92	0.218	0.702													
########	m	0.88	0.215	0.665													
########	tu	0.94	0.23	0.71													
########	w	0.83	0.206	0.624													
########	th	0.92	0.223	0.697	94		290										
########	f	0.93	0.214	0.716													
########	sat	0.90	0.231	0.669													
########	sun	0.96	0.245	0.715													
########	m	0.88	0.248	0.632													
########	tu	0.88	0.51	0.37													
########	w	0.85	0.16	0.69													
########	th	1.25	0.127	1.123	120		200										
########	f	0.63	0.194	0.436													
########	sun	0.90	0.208	0.692													
########	m	0.95	0.224	0.726													
########	tu	0.83	0.228	0.602													
########	m	0.89	0.23	0.66													
########	tu	0.87	0.24	0.64													
########	w	1.03	0.23	0.80	110		130										
########	th	0.93	0.24	0.69													
########	F	0.86	0.23	0.63													
########	sat	0.84	0.24	0.60													
########	sun	0.81	0.23	0.58													
########	m	0.78	0.23	0.55													
########	tu	0.82	0.23	0.59													
########	w	0.87	0.24	0.63													
########	th	0.86	0.24	0.62	120		130										
########	F	0.85	0.25	0.60													
########	mon	0.79	0.24	0.55													
########	tue	0.76	0.23	0.53													
########	m	0.83	0.24	0.59													
########	tu	0.83	0.23	0.60													
########	w	0.73	0.21	0.52	150		190										
########	th	0.86	0.21	0.65													
########	F	0.79	0.21	0.58													
########	wed	0.81	0.22	0.59													
########	thu	0.80	0.22	0.58													
########	m	0.65	0.17	0.48													
########	tu	0.80	0.17	0.63													
########	w	0.72	0.22	0.50	92		160										
########	th	0.84	0.22	0.62													
########	F	0.81	0.22	0.59													
########	fri	0.78	0.26	0.53													
########	sat	0.74	0.17	0.57													
########	m	0.75	0.22	0.53													
########	tu	0.82	0.22	0.60													
########	w	0.82	0.23	0.59	110		130										
########	th	0.89	0.24	0.65													
########	f	0.77	0.24	0.52													
########	sat	0.76	0.22	0.53													
########	sun	0.78	0.22	0.56													
########	m	0.59	0.20	0.39													
########	tu	0.67	0.19	0.48													
########	w	0.63	0.18	0.45													
########	th	0.57	0.18	0.39	140		11										
########	f	0.64	0.18	0.46													
########	sat	0.69	0.19	0.50													
########	sun	0.60	0.15	0.45													
########	m	0.63	0.14	0.49													
########	tu	0.69	0.14	0.55													
########	w	0.77	0.19	0.58	120		100										
########	th	0.80	0.23	0.57													
########	f	0.82	0.24	0.58													
########	sat	0.83	0.23	0.60													
########	sun	0.76	0.23	0.53													
########	m	0.74	0.22	0.52	53		48										
########	tu	0.77	0.21	0.56													
########	w	0.75	0.22	0.53													
########	th	0.78	0.23	0.55													
########	f	0.69	0.23	0.47													
########	sat	0.71	0.23	0.48													
########	sun	0.75	0.23	0.52													
########	m	0.71	0.22	0.49													
########	tu	0.72	0.20	0.52													
########	w	0.76	0.20	0.56	110		240										
########	th	0.76	0.19	0.57													
########	f	0.78	0.19	0.59													
########	sat	0.83	0.20	0.63													
########	sun	0.72	0.20	0.57													
########	m	0.77	0.20	0.57													
########	tu	0.74	0.19	0.55													
########	w	0.76	0.21	0.55													
########	th	0.82	0.23	0.59													
########	f	0.68	0.23	0.45	140		220										

DATE	DAY	SECONDARY EFFLUENT CONSTITUENT Daily			Weekly								Quarterly				SECONDARY EFFLUENT CONSTITUENT Annually General Minerals (October)											
		FLOW MGD (Q)	pH	EC umhos/	BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	nmonia (To (as N) mg/L	NITRATE (as N) mg/L	MDL	Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiu (K)	Sodium (Na)	Chloride	langane (Mn)	Phosphoru (P)	Total Alkalinity	Hardnes	Cation Anion
########	f	0.693		770	2.5		18.00	4.8		36.00	ND																	
########	sat	0.670		770																								
########	sun	0.702		780																								
########	m	0.665		780																								
########	tu	0.710		770																								
########	w	0.624		760																								
########	th	0.697		780	ND			3.4		26.00	ND																	
########	f	0.716		770																								
########	sat	0.669		760																								
########	sun	0.715		770																								
########	m	0.632		760																								
########	tu	0.370		770																								
########	w	0.690		840																								
########	th	1.123		840	ND			1.8		18.00	ND																	
########	f	0.436		820																								
########	sun	0.692		840																								
########	m	0.726		820																								
########	tu	0.602		820																								
########	m	0.66		820																								
########	tu	0.64		820																								
########	w	0.80		830	1.2		7.96	1.8		11.94	ND																	
########	th	0.69		830																								
########	F	0.63		820																								
########	sat	0.60		850																								
########	sun	0.58		840																								
########	m	0.55		860																								
########	tu	0.59		840																								
########	w	0.63		830																								
########	th	0.62		840	ND		######	6.6		34.21	ND																	
########	F	0.60		840																								
########	mon	0.55		810																								
########	tue	0.53		830																								
########	m	0.59		820																								
########	tu	0.60		810																								
########	w	0.52		790	1		4.32	2.6		11.22	ND																	
########	th	0.65		810																								
########	F	0.58		800																								
########	wed	0.59		830																								
########	thu	0.58		820																								
########	m	0.48		830																								
########	tu	0.63		810																								
########	w	0.50		820	ND		######	2.2		9.17	ND																	
########	th	0.62		810																								
########	F	0.59		810																								
########	fri	0.53		800																								
########	sat	0.57		810																								
########	m	0.53		800																								
########	tu	0.60		830																								
########	w	0.59		810	ND		######	2.4		11.82	ND																	
########	th	0.65		790																								
########	f	0.52		780																								
########	sat	0.53		780																								
########	sun	0.56		750																								
########	m	0.39		740																								
########	tu	0.48		700																								
########	w	0.45		690																								
########	th	0.39		640	1.3		4.23	4		13.00	ND																	
########	f	0.46		640																								
########	sat	0.50		650																								
########	sun	0.45		680																								
########	m	0.49		750																								
########	tu	0.55		750																								
########	w	0.58		770	2.5		12.04	4.8		23.12	ND																	
########	th	0.57		780																								
########	f	0.58		770																								
########	sat	0.60		760																								
########	sun	0.53		760																								
########	m	0.52		760	1.5		6.50	7.6		32.93	ND																	
########	tu	0.56		750																								
########	w	0.53		750																								
########	th	0.55		750																								
########	f	0.47		740																								
########	sat	0.48		750																								
########	sun	0.52		740																								
########	m	0.49		740																								
########	tu	0.52		750																								
########	w	0.56		730	1.6		7.41	9.2		42.63	ND																	
########	th	0.57		700																								
########	f	0.59		700																								
########	sat	0.63		700																								
########	sun	0.57		700																								
########	m	0.57		660																								
########	tu	0.55		700																								
########	w	0.55		700																								
########	th	0.59		700																								
########	f	0.45		710	ND		######	9.2		34.50	ND																	

DATE	DAY	INFLUENT CONSTITUENT																SECONDARY EFFLUENT CONSTITUENT															SECONDARY EFFLUENT CONSTITUENT											
		Daily			Weekly													Daily			Weekly										Quarterly		Annually											
		Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW (calc.)	BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L	FLOW MGD (Q)	pH	EC umhos/	BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	nmonia (Tot (as N) mg/L	NITRATE (as N) mg/L	MDL	General Minerals (October)											
																																	Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiu (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphoru (P)	Total Alkalinity	Hardnes	Cation Anion
########	sat	0.88	0.22	0.66														0.66		710																								
########	sun	0.75	0.21	0.54														0.54		700																								
########	m	0.72	0.21	0.51														0.51		700																								
########	tu	0.81	0.22	0.59														0.59		720																								
########	w	0.79	0.21	0.58	130		220											0.58		690	1.2		5.80	6		29.00	ND																	
########	th	0.83	0.22	0.61														0.61		690																								
########	f	0.82	0.22	0.60														0.60		720																								
########	sat	0.75	0.23	0.53														0.53		710																								
########	sun	0.77	0.25	0.52														0.52		720																								
########	m	0.73	0.23	0.51														0.51		720																								
########	tu	0.77	0.22	0.55														0.55		740																								
########	w	0.75	0.22	0.53	130		260											0.53		750	1		4.42	2.8		12.37	ND																	
########	th	0.68	0.22	0.46														0.46		750																								
########	f	0.69	0.21	0.48														0.48		750																								
########	sat	0.75	0.22	0.54														0.54		750																								
########	sun	0.72	0.22	0.50														0.50		720																								
########	m	0.83	0.22	0.61														0.61		670																								
########	tu	0.69	0.22	0.47														0.47		670																								
########	w	0.74	0.21	0.53	78		240											0.53		660	ND		######	2		8.83	ND																	
########	th	0.80	0.22	0.58														0.58		660																								
########	F	0.77	0.22	0.55														0.55		670																								
########	sat	0.76	0.21	0.55														0.55		680																								
########	sun	0.70	0.22	0.48														0.48		680																								
########	m	0.70	0.21	0.49														0.49		680																								
1/1/2013	Tu	0.74	0.204	0.536														0.536		710																								
1/2/2013	W	0.7	0.212	0.518														0.518		710	1.4		6.0433	14		60.433	0																	
1/3/2013	Th	0.73	0.207	0.523	140		350											0.523		700																								
1/4/2013	F	0.79	0.221	0.569														0.569		720																								
1/5/2013	Sat	0.81	0.229	0.581														0.581		720																								
1/6/2013	Sun	0.81	0.231	0.579														0.579		700																								
1/7/2013	M	0.77	0.239	0.531														0.531		670																								
1/8/2013	Tu	0.84	0.233	0.607														0.607		700																								
1/9/2013	W	0.81	0.228	0.582														0.582		710																								
########	Th	0.83	0.238	0.592	61		100											0.592		730	1		4.9333	8.8		43.413	0																	
########	F	0.663	0.237	0.426														0.426		710																								
########	Sat	1.047	0.241	0.806														0.806		710																								
########	Sun	0.76	0.238	0.522														0.522		710																								
########	M	0.67	0.237	0.433														0.433		750																								
########	Tu	0.86	0.238	0.622														0.622		730																								
########	W	0.81	-0.057	0.867														0.867		750	0		0	4		28.9	0																	
########	Th	0.81	0.526	0.284	66		110											0.284		740																								
########	F	0.75	0.209	0.541														0.541		810																								
########	Sat	0.74	0.199	0.541														0.541		740																								
########	Sun	0.66	0.19	0.47														0.47		770																								
########	M	0.7	0.198	0.502														0.502		770																								
########	Tu	0.8	0.199	0.601	81		130											0.601		650																								
########	W	0.79	0.201	0.589														0.589		660	3.1		15.216	11		53.992	0																	
########	Th	0.84	0.204	0.636														0.636		790																								
########	F	0.84	0.208	0.632														0.632		820																								
########	Sat	0.85	0.211	0.639														0.639		700																								
########	Sun	0.77	0.2	0.57														0.57		680																								
########	M	0.75	0.203	0.547														0.547		1600																								
########	Tu	0.75	0.199	0.551														0.551		1400																								
########	W	0.77	0.207	0.563	130		120											0.563		840	4.9		22.989	13		60.992	0																	
########	Th	0.76	0.207	0.553														0.553		800																								
2/1/2013	FRI	0.79	0.202	0.588														0.588		850																								
2/2/2013	SAT	0.75	0.199	0.451														0.451		1900																								
2/3/2013	SUN	0.65	0.213	0.437														0.437		1500																								
2/4/2013	MON	0.56	0.218	0.342														0.342		1800																								
2/5/2013	TUES	0.79	0.221	0.569														0.569		1900																								
2/6/2013	WEN	0.61	0.219	0.391	81		220											0.391		760																								
2/7/2013	THUR	0.7	0.225	0.475														0.475		620	2.4		9.5	10		39.583																		
2/8/2013	FRI	0.75	0.224	0.526														0.526		560																								
2/9/2013	SAT	0.76	0.223	0.537														0.537		540																								
########	SUN	0.52	0.205	0.315														0.315		550																								
########	MON	0.47	0.173	0.297														0.297		1100																								
########	TUES	0.6	0.179	0.421														0.421		560																								
########	WEN	0.66	0.19	0.47	73		100											0.47		590	1.6		6.2667	2.4		9.4																		
########	THUR	0.69	0.186	0.504														0.504		700																								
########	FRI	0.66	0.179	0.481														0.481		560																								
########	SAT	0.68	0.185	0.495														0.495		550																								
########	SUN	0.57	0.184	0.386														0.386		570																								
########	MON	0.58	0.187	0.393														0.393		1800																								
########	TUES	0.63	0.181	0.449														0.449		670																								
########	WEN	0.72	0.198	0.522														0.522		550																								
########	THUR	0.65	0.202	0.448	150		120											0.448		650	1.2		4.48	3.2		11.947																		
########	FRI	0.67	0.215	0.455														0.455		540																								
########	SAT	0.72	0.212	0.508														0.508		550																								
########	SUN	0.62	0.212	0.408														0.408		530																								
########	MON	0.58	0.189	0.391														0.391		520																								
########	TUES	0.6	0.183	0.417														0.417		550																								
########	WEN	0.59	0.194	0.396														0.396		590																								
########	THUR	0.62	0.19	0.43	150		230											0.43		650	1.3		4.6583	2.4		8.6																		
3/1/2013	F	0.6	0.182	0.418														0.418	7.8	810																								
3/2/2013	SAT	0.61	0.183	0.377														0.377	7.9	740																								
3/3/2013	SUN	0.56	0.181	0.379														0.379	7.9	710																								

DATE	DAY	Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW (calc.)	BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L
		INFLUENT CONSTITUENT															
		Daily			Weekly												
3/4/2013	M	0.57	0.191	0.379													
3/5/2013	TUE	0.64	0.188	0.452													
3/6/2013	W	0.72	0.189	0.531													
3/7/2013	THU	0.72	0.191	0.529	140		120										
3/8/2013	F	0.75	0.193	0.557													
3/9/2013	SAT	0.72	0.194	0.526													
########	SUN	0.67	0.198	0.472													
########	M	0.67	0.199	0.471													
########	TUE	0.78	0.199	0.581													
########	W	0.76	0.204	0.556													
########	THU	0.77	0.203	0.567	180		290										
########	F	0.78	0.207	0.573													
########	SAT	0.78	0.212	0.568													
########	SUN	0.69	0.203	0.487													
########	M	0.68	0.196	0.484													
########	TUE	0.73	0.189	0.541													
########	W	0.72	0.19	0.53													
########	THU	0.75	0.196	0.554	120		120										
########	F	0.75	0.201	0.549													
########	SAT	0.73	0.195	0.535													
########	SUN	0.71	0.21	0.5													
########	M	0.71	0.215	0.495													
########	TUE	0.79	0.211	0.579													
########	W	0.78	0.204	0.576													
########	THU	0.83	0.202	0.628	56		400										
########	F	0.8	0.199	0.601													
########	SAT	0.73	0.189	0.541													
########	SUN	0.69	0.184	0.506													
4/1/2013	Tu	0.64	0.176	0.464													
4/2/2013	W	0.74	0.194	0.536													
4/3/2013	Th	0.73	0.193	0.537													
4/4/2013	F	0.74	0.186	0.554	140		240										
4/5/2013	Sat	0.74	0.199	0.541													
4/6/2013	Sun	0.73	0.197	0.533													
4/7/2013	M	0.69	0.183	0.507													
4/8/2013	Tu	0.68	0.183	0.497													
4/9/2013	W	0.71	0.175	0.535													
########	Th	0.76	0.213	0.547													
########	F	0.78	0.217	0.563	150		290										
########	Sat	0.8	0.228	0.572													
########	Sun	0.82	0.214	0.606													
########	M	0.76	0.206	0.554													
########	Tu	0.71	0.195	0.515													
########	W	0.8	0.194	0.606													
########	Th	0.8	0.185	0.615													
########	F	0.77	0.181	0.589	210		860										
########	Sat	0.83	0.199	0.631													
########	Sun	0.77	0.193	0.577													
########	M	0.78	0.194	0.586													
########	Tu	0.77	0.194	0.576													
########	W	0.82	0.186	0.634													
########	Th	0.78	0.19	0.59													
########	F	0.83	0.191	0.639	180		330										
########	Sat	0.85	0.188	0.662													
########	Sun	0.83	0.196	0.634													
########	M	0.79	0.197	0.593													
########	Tu	0.75	0.17	0.58													
########	W	0.84	0.194	0.646													
5/1/2013	W	0.87	0.2	0.67													
5/2/2013	TH	0.84	0.197	0.623	91	30	200	11									
5/3/2013	FRI	0.82	0.195	0.625													
5/4/2013	SAT	0.72	0.21	0.51													
5/5/2013	SUN	0.75	0.206	0.544													
5/6/2013	MON	0.85	0.206	0.644													
5/7/2013	TUES	0.9	0.27	0.63													
5/8/2013	W	0.82	0.15	0.67													
5/9/2013	TH	0.82	0.21	0.61	35	10	28	5.7									
########	FRI	0.83	0.21	0.62													
########	SAT	0.7	0.2	0.5													
########	SUN	0.78	0.19	0.59													
########	MON	0.81	0.18	0.63													
########	TUES	0.83	0.21	0.62													
########	W	0.83	0.22	0.61													
########	TH	0.79	0.21	0.58	83	30	91	5.7									
########	FRI	0.79	0.19	0.6													
########	SAT	0.68	0.16	0.52													
########	SUN	0.59	0.17	0.42													
########	MON	0.58	0.166	0.414													
########	TUES	0.64	0.19	0.45													
########	W	0.64	0.193	0.447													
########	TH	0.67	0.2	0.47	170	30	220	11									
########	FRI	0.64	0.19	0.45													
########	SAT	0.6	0.18	0.42													
########	SUN	0.71	0.179	0.531													
########	MON	0.78	0.17	0.61													
########	TUES	0.82	0.174	0.646													
########	W	0.81	0.173	0.637													

DATE	DAY	FLOW MGD (Q)	pH	EC umhos/	BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	nmonia (Tot (as N) mg/L	NITRATE (as N) mg/L	MDL
		SECONDARY EFFLUENT CONSTITUENT														
		Daily			Weekly										Quarterly	
3/4/2013	M	0.379	7.9	660												
3/5/2013	TUE	0.452	7.7	670												
3/6/2013	W	0.531	7.8	840												
3/7/2013	THU	0.529	7.7	730	0.5	1	2.2042	4.8	4	21.16	0.05	0.1			16	
3/8/2013	F	0.557	7.7	720												
3/9/2013	SAT	0.526	7.5	1500												
########	SUN	0.472	7.6	1500												
########	M	0.471	7.2	850												
########	TUE	0.581	7.1	910												
########	W	0.556	7.2	760	0.5	1	2.3167	1.8	4	8.34	0.05	0.1				
########	THU	0.567	7	900												
########	F	0.573	7	890												
########	SAT	0.568	7.6	790												
########	SUN	0.487	7.2	800												
########	M	0.484	7.6	760												
########	TUE	0.541	7.6	770												
########	W	0.53	7.8	780												
########	THU	0.554	7.8	1800	0.5	1	2.3083	4.8	4	22.16	0.05	0.1				
########	F	0.549	7.8	770												
########	SAT	0.535	7.7	710												
########	SUN	0.5	7.9	780												
########	M	0.495	7.8	790												
########	TUE	0.579	7.9	770												
########	W	0.576	7.8	780												
########	THU	0.628	7.8	790	0.5	1	2.6167	3.6	4	18.84	0.05	0.1				
########	F	0.601	7.8	760												
########	SAT	0.541	7.9	860												
########	SUN	0.506	7.8	870												
4/1/2013	Tu	0.464	7.9	780												
4/2/2013	W	0.536	7.9	770												
4/3/2013	Th	0.537	7.9	800												
4/4/2013	F	0.554	7.9	830	0.5	1	2.3083	3.6		16.62	0.05					
4/5/2013	Sat	0.541	7.8	1600												
4/6/2013	Sun	0.533	7.7	890												
4/7/2013	M	0.507	7.8	800												
4/8/2013	Tu	0.497	7.9	1100												
4/9/2013	W	0.535	7.8	780												
########	Th	0.547	7.8	930												
########	F	0.563	7.7	870	1.5	3	7.0375	2.4		11.26	0.05					
########	Sat	0.572	7.7	840												
########	Sun	0.606	7.7	870												
########	M	0.554	7.8	820												
########	Tu	0.515	7.7	800												
########	W	0.606	7.6	950												
########	Th	0.615	7.6	780												
########	F	0.589	7.7	1600	1.5	3	7.3625	2		9.8167	0.05					
########	Sat	0.631	7.6	1800												
########	Sun	0.577	7.6	1100												
########	M	0.586	7.6	1100												
########	Tu	0.576	7.6	800												
########	W	0.634	7.7	810												
########	Th	0.59	7.7	1900												
########	F	0.639	7.9	800	1.8	1	9.585	2.8		14.91	0.05					
########	Sat	0.662	8	800												
########	Sun	0.634	7.9	800												
########	M	0.593	7.9	800												
########	Tu	0.58	8	810												
########	W	0.646	7.7	800												
5/1/2013	W	0.67	7.9	790												
5/2/2013	TH	0.623	7.8	810	0.5	1	2.5958	2	1.1	10.383	0.05	0.1				
5/3/2013	FRI	0.625	7.8	790												
5/4/2013	SAT	0.51	7.7	770												
5/5/2013	SUN	0.544	7.8	780												
5/6/2013	MON	0.644	7.9	780												
5/7/2013	TUES	0.63	7.6	720												
5/8/2013	W	0.67	7.7	780												
5/9/2013	TH	0.61	7.8	770	0.5	1	2.5417	3.2	1.1	16.267	0.05	0.1				
########	FRI	0.62	7.8	810												
########	SAT	0.5	7.8	840												
########	SUN	0.59	7.9	800												
########	MON	0.63	7.9	810												
########	TUES	0.62	7.7	800												
########	W	0.61	7.8	790												
########	TH	0.58	7.9	790	0.5	3	2.4167	3.4	1.1	16.433	0.05	0.1				
########	FRI	0.6	7.8	790												
########	SAT	0.52	7.8	770												
########	SUN	0.42	7.8	780												
########	MON	0.414	7.8	760												
########	TUES	0.45	7.7	760												
########	W	0.447	7.7	740												
########	TH	0.47	7.6	700	0.5	1	1.9583	4.4	1.1	17.233	0.05	0.1				
########	FRI	0.45	7.6	670												
########	SAT	0.42	7.7	650												
########	SUN	0.531	7.8	690												
########	MON	0.61	7.8	710												
########	TUES	0.646	7.8	750												
########	W	0.637	7.7	760												

Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiu (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphorus (P)	Total Alkalinity	Hardnes	Cation Anion
SECONDARY EFFLUENT CONSTITUENT											
Annually											
General Minerals (October)											

DATE	DAY	INFLUENT CONSTITUENT															
		Daily			Weekly												
		Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW (calc.)	BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L
########	TH	0.79	0.169	0.621	94	30	190	2.8									
########	FRI	0.73	0.17	0.56													
6/1/2013	Sat	0.76	0.168	0.592													
6/2/2013	Sun	0.74	0.166	0.674													
6/3/2013	M	0.84	0.18	0.66													
6/4/2013	Tu	0.85	0.194	0.656													
6/5/2013	W	0.79	0.188	0.602													
6/6/2013	Th	0.86	0.198	0.662	58	10	58	1.1									
6/7/2013	F	0.82	0.195	0.625													
6/8/2013	Sat	0.73	0.183	0.547													
6/9/2013	Sun	0.82	0.212	0.608													
########	M	0.446	0.053	0.393													
########	Tu	0.495	0	0.495													
########	W	0.586	0	0.586													
########	Th	0.449	0	0.449	180	30	140	11									
########	F	0.459	0	0.459													
########	Sat	0.446	0	0.446													
########	Sun	0.449	0	0.449													
########	M	0.527	0	0.527													
########	Tu	0.505	0	0.505													
########	W	0.511	0	0.511													
########	Th	0.505	0	0.505	58	10	82	5.7									
########	F	0.436	0	0.436													
########	Sat	0.521	0	0.521													
########	Sun	0.413	0	0.413													
########	M	0.478	0	0.478													
########	Tu	0.534	0	0.534													
########	W	0.54	0	0.54													
########	Th	0.57	0	0.57	29	10	72	5.7									
########	Fri	0.547	0	0.547													
########	Sat	0.492	0	0.492													
########	Sun	0.462	0	0.462													
7/1/2013	M	0.547	0	0.547													
7/2/2013	Tu	0.514	0	0.537													
7/3/2013	W	0.537	0	0.537	140	10	230	40									
7/4/2013	Th	0.537	0	0.537													
7/5/2013	F	0.537	0	0.537													
7/6/2013	Sat	0.537	0	0.537													
7/7/2013	Sun	0.482	0	0.482													
7/8/2013	M	0.54	0	0.54													
7/9/2013	Tu	0.609	0	0.609													
########	W	0.888	0.275	0.613													
########	Th	1.28	0.209	1.071	58	10	140	10									
########	F	0.93	0.224	0.706													
########	Sat	0.82	0.25	0.57													
########	Sun	0.8	0.285	0.515													
########	M	0.92	0.257	0.663													
########	Tu	0.89	0.267	0.623													
########	W	0.9	0.265	0.635													
########	Th	0.86	0.265	0.595	63	10	200	20									
########	F	0.89	0.261	0.629													
########	Sat	0.77	0.262	0.508													
########	Sun	0.84	0.28	0.56													
########	M	0.88	0.282	0.598													
########	Tu	0.9	0.275	0.625													
########	W	0.88	0.272	0.608													
########	Th	0.88	0.274	0.606	63	10	150	40									
########	F	0.93	0.271	0.659													
########	Sat	0.82	0.252	0.568													
########	Sun	0.8	0.25	0.55													
########	M	0.87	0.265	0.605													
########	Tu	0.88	0.269	0.611													
########	W	0.86	0.261	0.599													
8/1/2013	TH	0.86	0.267	0.593	72		130										
8/2/2013	F	0.87	0.268	0.622													
8/3/2013	Sat	0.89	0.262	0.628													
8/4/2013	Sun	0.81	0.254	0.556													
8/5/2013	M	0.79	0.272	0.518													
8/6/2013	TU	0.92	0.27	0.65													
8/7/2013	W	0.9	0.269	0.631													
8/8/2013	TH	0.9	0.268	0.632	130		370										
8/9/2013	F	0.87	0.263	0.607													
########	Sat	0.91	0.274	0.636													
########	Sun	0.77	0.252	0.518													
########	M	0.81	0.259	0.551													
########	TU	0.86	0.259	0.601													
########	W	0.87	0.251	0.619													
########	TH	0.89	0.262	0.628	170		220										
########	F	0.84	0.26	0.58													
########	Sat	0.87	0.237	0.633													
########	Sun	0.81	0.241	0.569													
########	M	0.8	0.25	0.55													
########	TU	0.9	0.258	0.642													
########	W	0.89	0.255	0.635													
########	TH	0.91	0.261	0.649	130		240										
########	F	0.9	0.263	0.637													
########	Sat	0.87	0.262	0.608													

DATE	DAY	SECONDARY EFFLUENT CONSTITUENT															SECONDARY EFFLUENT CONSTITUENT											
		Daily			Weekly										Quarterly		Annually											
																	General Minerals (October)											
		FLOW MGD (Q)	pH	EC umhos/	BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	mmonia (Tot (as N) mg/L	NITRATE (as N) mg/L	MDL	Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiur (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphorus (P)	Total Alkalinity	Hardnes	Cation Anion
########	TH	0.621	7.6	770	1.5	3	7.7625	6	1.1	31.05	0.05	0.1																
########	FRI	0.56	7.7	750																								
6/1/2013	Sat	0.592	7.6	740																								
6/2/2013	Sun	0.674	7.7	730																								
6/3/2013	M	0.66	7.8	740																								
6/4/2013	Tu	0.656	7.8	740																								
6/5/2013	W	0.602	7.9	740																								
6/6/2013	Th	0.662	7.7	740	0.5	1	2.7583	2.8	4	15.447	0.05	0.1																
6/7/2013	F	0.625	7.8	750																								
6/8/2013	Sat	0.547	7.6	730																								
6/9/2013	Sun	0.608	7.7	730																								
########	M	0.393	7.8	740																								
########	Tu	0.495	7.8	750																								
########	W	0.586	7.7	750																								
########	Th	0.449	7.8	750	1.7	1	6.3608	3.6	1.1	13.47	0.05	0.1																
########	F	0.459	7.7	730																								
########	Sat	0.446	7.7	670																								
########	Sun	0.449	7.7	680																								
########	M	0.527	7.7	690																								
########	Tu	0.505	7.7	690																								
########	W	0.511	7.4	710																								
########	Th	0.505	7.7	700	1.5	3	6.3125	4.4	1.1	18.517	0.05	0.1			15													
########	F	0.436	7.5	720																								
########	Sat	0.521	7.6	1200																								
########	Sun	0.413	7.8	1200																								
########	M	0.478	7.7	730																								
########	Tu	0.534	7.7	750																								
########	W	0.54	7.8	760																								
########	Th	0.57	7.7	730	0.5	1	2.375	4.8	1.1	22.8	0.05	0.1																
########	Fri	0.547	7.7	730																								
########	Sat	0.492	7.6	740																								
########	Sun	0.462	7.7	760																								
7/1/2013	M	0.547	7.7	740																								
7/2/2013	Tu	0.537	7.8	720																								
7/3/2013	W	0.537	7.7	720	2.3	1	10.293	2.2	1.1	9.845	ND	0.1																
7/4/2013	Th	0.537	7.7	730																								
7/5/2013	F	0.537	7.7	730																								
7/6/2013	Sat	0.537	7.8	730																								
7/7/2013	Sun	0.482	7.8	740																								
7/8/2013	M	0.54	7.8	740																								
7/9/2013	Tu	0.609	7.8	730																								
########	W	0.613	7.6	720											61		0.13	30	0.051	14	7.7	91	28	0.0018	1.6	99	130	0.41
########	Th	1.071	7.6	740	1.5	1	13.388	4	1.1	35.7	ND	0.1																
########	F	0.706	7.7	750																								
########	Sat	0.57	7.6	800																								
########	Sun	0.515	7.8	770																								
########	M	0.663	7.6	730																								
########	Tu	0.623	7.7	740																								
########	W	0.635	7.7	740																								
########	Th	0.595	7.7	750	1.7	1	8.4292	4.2	1.1	20.825	ND	0.1																
########	F	0.629	7.8	740																								
########	Sat	0.508	7.8	740																								
########	Sun	0.56	7.8	750																								
########	M	0.598	7.7	750																								
########	Tu	0.625	7.7	740																								
########	W	0.608	7.7	740																								
########	Th	0.606	7.7	700	0.1	1	0.505	1.6	1.1	8.08	ND	0.1																
########	F	0.659	7.6	710																								
########	Sat	0.568	7.7	750																								
########	Sun	0.55	7.7	760																								
########	M	0.605	7.8	730																								
########	Tu	0.611	7.7	700																								
########	W	0.599	7.8	690																								
8/1/2013	TH	0.593	7.6	740	0.1		0.4942	2.6		12.848	ND																	
8/2/2013	F	0.622	7.6	720																								
8/3/2013	Sat	0.628	7.6	710																								
8/4/2013	Sun	0.556	7.7	700																								
8/5/2013	M	0.518	7.8	710																								
8/6/2013	TU	0.65	7.6	710																								
8/7/2013	W	0.631	7.7	700																								
8/8/2013	TH	0.632	7.8	720	0.1		0.5267	3.4		17.907	ND																	
8/9/2013	F	0.607	7.5	720																								
########	Sat	0.636	7.8	730																								
########	Sun	0.518	7.8	730																								
########	M	0.551	7.8	730																								
########	TU	0.601	7.8	720																								
########	W	0.619	7.8	720																								
########	TH	0.628	7.8	720	0.1		0.5233	3.6		18.84	ND																	
########	F	0.58	7.7	720																								
########	Sat	0.633	7.7	710																								
########	Sun	0.569	7.8	710																								
########	M	0.55	7.8	710																								
########	TU	0.642	7.7	710																								
########	W	0.635	7.8	730																								
########	TH	0.649	7.6	720	0.1		0.5408	4.8		25.96	ND																	
########	F	0.637	7.7	730																								
########	Sat	0.608	7.6	720																								

DATE	DAY	INFLUENT CONSTITUENT																SECONDARY EFFLUENT CONSTITUENT														
		Daily			Weekly													Daily			Weekly										Quarterly	
		Parshall Flume Flow	Recirculated Grit Flow	TOTAL FLOW	BOD	MDL	TSS	MDL	pH	mmonia (Tota	Chloride	EC	NITRATE	hosphoru	Boron	Iron	O&G	FLOW	pH	EC	BOD	MDL	BOD	TSS	MDL	TSS	SS	MDL	O&G	nmonia (Tot	NITRATE	MDL
		MGD	MGD	(calc.)	mg/L weekly		mg/L weekly			(as N) mg/L	mg/L	umhos/c	(as N) mg/L	(P) mg/L	(B) mg/L	(Fe) mg/L	mg/L	MGD (Q)		umhos/	mg/L		lb/d (calc.)	mg/L		lb/d (calc.)	ml/L		mg/L	(as N) mg/L	(as N) mg/L	
########	Sun	0.89	0.262	0.628														0.628	7.6	730												
########	M	0.79	0.263	0.527														0.527	7.7	720												
########	TU	0.88	0.266	0.614														0.614	7.8	710												
########	W	0.9	0.234	0.666														0.666	7.7	710												
########	TH	0.88	0.243	0.637	50		260											0.637	7.8	760	0.1		0.5308	3		15.925	ND					
########	F	0.88	0.247	0.633														0.633	7.8	740												
########	Sat	0.92	0.243	0.677														0.677	7.9	720												
9/1/2013	Sun	0.79	0.246	0.544														0.544	7.8	730												
9/2/2013	M	0.76	0.248	0.582														0.582	7.7	730												
9/3/2013	Tue	0.83	0.26	0.57														0.57	7.7	710												
9/4/2013	W	0.77	0.255	0.515														0.515	7.9	680											11	0.008
9/5/2013	Th	0.74	0.26	0.48	180	30	240	11										0.48	7.7	640	0.2	1	0.8	3.2	1.1	12.8	0.05	0.1				
9/6/2013	F	0.69	0.257	0.354														0.354	7.8	580												
9/7/2013	Sat	0.67	0.25	0.343														0.343	7.7	560												
9/8/2013	Sun	0.73	0.26	0.47														0.47	7.8	540												
9/9/2013	M	0.88	0.259	0.621														0.621	7.8	530												
########	Tue	0.87	0.262	0.608														0.608	7.9	660												
########	W	0.89	0.255	0.635														0.635	7.9	620												
########	Th	0.87	0.263	0.607	42	10	42	11										0.607	7.8	650	0.2	1	1.0117	3.4	1.1	17.198	0.05	0.1				
########	F	0.8	0.26	0.54														0.54	7.7	670												
########	Sat	0.87	0.25	0.62														0.62	7.6	700												
########	Sun	0.77	0.253	0.517														0.517	7.7	700												
########	M	0.84	0.248	0.592														0.592	7.7	690												
########	Tue	0.84	0.26	0.58														0.58	7.8	720												
########	W	0.82	0.25	0.57														0.57	7.7	720												
########	Th	0.87	0.248	0.622	55	10	140	11										0.622	7.6	730	1.6	1	8.2933	7.2	1.1	37.32	0.05	0.1				
########	F	0.83	0.24	0.59														0.59	7.7	730												
########	Sat	0.75	0.25	0.5														0.5	7.8	750												
########	Sun	0.74	0.251	0.489														0.489	7.8	750												
########	M	0.85	0.245	0.605														0.605	7.8	740												
########	Tue	0.82	0.24	0.58														0.58	7.7	720												
########	W	0.82	0.25	0.57														0.57	7.4	730												
########	Th	0.81	0.251	0.559	85	30	360	11										0.559	7.4	740	0.2	1	0.9317	2.6	1.1	12.112	0.05	0.1				
########	F	0.78	0.24	0.54														0.54	7.7	720												
########	Sat	0.8	0.25	0.55														0.55	7.6	740												
########	Sun	0.69	0.24	0.45														0.45	7.7	730												
########	M	0.85	0.239	0.611														0.611	7.8	730												
########	Tu	0.79	0.248	0.542														0.542	7.7	730												
########	W	0.86	0.25	0.59														0.59	7.7	720												
########	Th	0.84	0.255	0.585	180	30	410	11										0.585	7.7	740	0.5	3	2.4375	4.4	1.1	21.45	N/D	0.1				
########	F	0.8	0.246	0.554														0.554	7.5	730												
########	Sat	0.8	0.242	0.558														0.558	7.3	660												
########	Sun	0.76	0.239	0.521														0.521	7.4	670												
########	M	0.83	0.247	0.583														0.583	7.3	720												
########	Tu	0.85	0.253	0.597														0.597	7.7	740												
########	W	0.83	0.335	0.495														0.495	7.7	720												
########	Th	0.82	0.179	0.641	180	30	430	11										0.641	7.6	730	0.5	1	2.6708	3.4	1.1	18.162	N/D	0.1				
########	F	0.83	0.257	0.573														0.573	7.8	730												
########	Sat	0.75	0.227	0.523														0.523	7.8	740												
########	Sun	0.72	0.241	0.479														0.479	7.9	750												
########	M	0.79	0.244	0.546														0.546	7.8	730												
########	Tu	0.81	0.242	0.568														0.568	7.6	730												
########	W	0.82	0.24	0.58														0.58	7.7	740												
########	Th	0.79	0.245	0.545	120	30	170	11										0.545	7.4	740	0.5	1	2.2708	2	1.1	9.0833	N/D	0.1				
########	F	0.86	0.236	0.624														0.624	7.6	750												
########	Sat	0.74	0.23	0.51														0.51	7.7	740												
########	Sun	0.75	0.24	0.51														0.51	7.8	740												
########	M	0.78	0.234	0.546														0.546	7.8	740												
########	Tu	0.79	0.239	0.551														0.551	7.3	740												
########	W	0.79	0.242	0.548														0.548	7.5	760												
########	Th	0.82	0.243	0.577	90	30	580	11										0.577	7.8	760	0.5	1	2.4042	5	1.1	24.042	N/D	0.1				
########	F	0.77	0.238	0.532														0.532	7.7	760												
########	Sat	0.81	0.237	0.573														0.573	7.6	770												
########	Sun	0.8	0.236	0.564														0.564	7.6	770												
########	M	0.79	0.242	0.548														0.548	7.8	770												
########	Tu	0.81	0.242	0.568														0.568	7.3	790												
########	W	0.84	0.246	0.594														0.594	7.4	780												
########	Th	0.79	0.242	0.548	130	30	380	11										0.548	7.6	790	0.5	1	2.2833	3.4	1.1	15.527	N/D	0.1				
########	F	0.79	0.242	0.548														0.548	7.6	750												
########	Sat	0.81	0.242	0.518														0.518	7.7	780												
########	Sun	0.76	0.24	0.52														0.52	7.7	780												
########	M	0.76	0.251	0.509														0.509	7.7	780												
########	Tu	0.76	0.227	0.533														0.533	7.5	790												
########	W	0.78	0.237	0.543														0.543	7.5	770												
########	Th	0.74	0.229	0.511	290	30	700	19										0.511	7.6	740	0.05	3	0.2129	4.6	1.1	19.588	0.05	0.1				
########	F	0.83	0.252	0.578														0.578	7.5	770												
########	Sat	0.7	0.233	0.467														0.467	7.4	750												
########	Sun	0.64	0.231	0.409														0.409	7.5	730												
########	M	0.63	0.234	0.396														0.396	7.6	790												
########	Tu	0.68	0.229	0.451														0.451	7.6	660												
########	W	0.67	0.226	0.444														0.444	7.5	650												
########	Th	0.69	0.227	0.463	250	30	800	11										0.463	7.4	640	1.7	1	6.5592	2	1.1	7.7167	0.05	0.1				
########	F	0.68	0.217	0.463														0.463	7.6	630												
########	Sat	0.64	0.206	0.434														0.434	7.6	620												
########	Sun	0.61	0.216	0.394														0.394	7.6	650												
########	M	0.7	0.196	0.504														0.504	7.6	710												
########	Tu	0.73	0.203	0.527														0.527	7.5	750												

SECONDARY EFFLUENT CONSTITUENT											
Annually											
General Minerals (October)											
Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiur (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphorus (P)	Total Alkalinity	Hardnes	Cation Anion

DATE	DAY	INFLUENT CONSTITUENT																SECONDARY EFFLUENT CONSTITUENT															SECONDARY EFFLUENT CONSTITUENT											
		Daily			Weekly													Daily			Weekly										Quarterly		Annually											
		Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW (calc.)	BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L	FLOW MGD (Q)	pH	EC umhos/	BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	nmonia (To (as N) mg/L	NITRATE (as N) mg/L	MDL	General Minerals (October)											
																																	Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiur (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphorus (P)	Total Alkalinity	Hardnes	Cation Anion
########	W	0.77	0.216	0.554														0.554	7.5	760																								
########	Th	0.82	0.199	0.621	220	30	820	28										0.621	7.5	730	0.05	3	0.2588	4	1.1	20.7	0.05	0.1																
########	F	0.75	0.218	0.532														0.532	7.4	750																								
########	Sat	0.72	0.187	0.533														0.533	7.2	750																								
########	Sun	0.68	0.179	0.501														0.501	7.3	770																								
########	M	0.65	0.179	0.471														0.471	7.5	770																								
########	Tu	0.71	0.179	0.531	260	30	720	19										0.531	7.4	780	0.05	3	0.2213	3.2	1.1	14.16	0.05	0.1																
########	W	0.74	0.188	0.552														0.552	7.8	720																								
########	Th	0.85	0.188	0.662														0.662	7.5	800																								
########	F	0.86	0.186	0.674														0.674	7.7	790																								
########	Sat	0.66	0.188	0.472														0.472	7.6	780																								
########	Sun	0.71	0.189	0.521														0.521	7.6	790																								
########	M	0.65	0.184	0.586														0.586	7.4	790																								
########	Tu	0.77	0.184	0.586														0.586	7.4	800																								
########	W	0.74	0.191	0.549														0.549	7.4	810																								
########	Th	0.65	0.171	0.479	98	10	180	11										0.479	7.1	820	0.02	3	0.0798	4.4	1.1	17.563	ND	0.1																
########	Fri	0.64	0.153	0.487														0.487	7.1	820																								
########	Sat	0.66	0.144	0.516														0.516	7	820																								
########	Sun	0.59	0.145	0.445														0.445	7.1	820																								
########	M	0.59	0.142	0.448														0.448	7.2	790																								
########	Tu	0.61	0.15	0.46														0.46	7.5	820																								
########	W	0.65	0.157	0.493														0.493	7.4	820																								
########	Th	0.63	0.156	0.474	63	10	530	7.1										0.474	7.5	780	1.9	1	7.505	9	1.1	35.55	ND	0.1																
########	Fri	0.63	0.155	0.475														0.475	7.4	780																								
########	Sat	0.63	0.163	0.467														0.467	7.3	780																								
########	Sun	0.56	0.156	0.404														0.404	7.4	780																								
########	M	0.59	0.157	0.433														0.433	7.5	770																								
########	Tu	0.7	0.172	0.528														0.528	7.4	770																								
########	W	0.72	0.158	0.562														0.562	7.5	780																								
########	Th	0.74	0.158	0.582	190	30	280	11										0.582	7.4	770	1.8	1	8.73	2.8	1.1	13.58	ND	0.1																
########	Fri	0.69	0.15	0.54														0.54	7.3	770																								
########	Sat	0.68	0.145	0.535														0.535	7.2	770																								
########	Sun	0.61	0.144	0.466														0.466	7.1	760																								
########	M	0.55	0.142	0.408														0.408	7.2	760																								
########	Tu	0.59	0.136	0.454														0.454	7.1	770																								
########	W	0.58	0.138	0.442														0.442	7.1	770																								
########	Th	0.59	0.137	0.453	200	30	440	11										0.453	7.2	760	1.8	1	6.795	5.8	1.1	21.895	ND	0.1																
########	Fri	0.66	0.151	0.509														0.509	6.8	770																								
########	Sat	0.6	0.135	0.465														0.465	8	800																								
########	Sun	0.56	0.12	0.44														0.44	7.9	780																								
########	M	0.53	0.1	0.43														0.43	8	780																								
########	Tu	0.78	0.204	0.576														0.576	7.6	780																								
1/1/2014	W	0.7	0.201	0.559														0.56	7.6	750																								
1/2/2014	Th	0.76	0.211	0.549														0.549	7.7	740																								
1/3/2014	F	0.71	0.207	0.503	270	30	860	11										0.503	7.5	740	4	1	16.767	15	1.1	62.875	0.05	0.1																
1/4/2014	Sat	0.65	0.192	0.458														0.458	7.5	770																								
1/5/2014	Sun	0.68	0.196	0.484														0.484	7.4	750																								
1/6/2014	M	0.73	0.193	0.537														0.537	7.5	730																								
1/7/2014	Tu	0.83	0.214	0.616														0.616	7.3	740																								
1/8/2014	W	0.8	0.199	0.601														0.601	7.2	750																								
1/9/2014	Th	0.78	0.196	0.584	210	100	540	11										0.584	7.5	780	5.1	1	24.82	30	2.2	146	0.05	0.1																
########	F	0.71	0.194	0.516														0.516	7.5	790																								
########	Sat	0.69	0.199	0.491														0.491	7.5	790																								
########	Sun	0.67	0.199	0.471														0.471	7.6	780																								
########	M	0.73	0.19	0.54														0.54	7.6	780																								
########	Tu	0.73	0.185	0.545														0.545	7.5	790																								
########	W	0.68	0.182	0.498														0.498	7.3	790																								
########	Th	0.75	0.186	0.564	310	100	800	11										0.564	7.3	790	6.8	3	31.96	37	5.7	173.9	0.05	0.1																
########	F	0.69	0.185	0.505														0.505	7.4	750																								
########	Sat	0.71	0.188	0.522														0.522	7.6	760																								
########	Sun	0.66	0.186	0.474														0.474	7.4	760																								
########	M	0.73	0.183	0.547														0.547	7.5	760																								
########	Tu	0.74	0.182	0.558														0.558	7.4	760																								
########	W	0.7	0.173	0.527														0.527	7.4	780																								
########	Th	0.73	0.178	0.552	230	100	260	5.7										0.552	7.4	790	5	1	23	22	1.1	101.2	0.05	0.1																
########	F	0.71	0.166	0.544														0.544	7.1	800																								
########	Sat	0.65	0.162	0.488														0.488	7.2	790																								
########	Sun	0.62	0.164	0.456														0.456	7.2	800																								
########	M	0.72	0.178	0.542														0.542	7.2	790																								
########	Tu	0.77	0.172	0.598														0.598	7.3	830																								
########	W	0.79	0.183	0.607														0.607	7.4	830																								
########	Th	0.81	0.191	0.619	200	100	410	11										0.619	7.4	830	3.5	1	18.054	17	1.1	87.692	0.05	0.1																
########	F	0.63	0.195	0.435														0.435	7.4	810																								
2/1/2014	SAT	0.58	0.195	0.385														0.385	7.5	780																								
2/2/2014	SUN	0.55	0.199	0.401														0.401	7.4	760																								
2/3/2014	MON	0.6	0.198	0.402														0.402	7.6	730																								
2/4/2014	TUES	0.55	0.18	0.37														0.37	7.3	710																								
2/5/2014	WEN	0.64	0.183	0.457														0.457	7.3	730																								
2/6/2014	THUR	0.73	0.181	0.549	500		1100											0.549	7.2	720	4.1		18.758	13		59.475	ND																	
2/7/2014	FRI	0.57	0.16	0.41														0.41	7.3	650																								
2/8/2014	SAT	0.47	0.162	0.308														0.308	7.4	650																								
2/9/2014	SUN	0.47	0.15	0.32														0.32	7.4	640																								
########	MON	0.56	0.16	0.4														0.4	7.5	630																								
########	TUES	0.54	0.18	0.36														0.36	7.5	660																								
########	WEN	0.62	0.19	0.43														0.43	7.6	680																								
########	THUR	0.72	0.2	0.52	890		2500											0.52	7.5	650	3		13	7.6		32.933	ND																	
########	SAT	0.87	0.19	0.68														0.68	7.4	660																								

INFLUENT CONSTITUENT

		Daily			Weekly												
DATE	DAY	Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW (calc.)	BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L
########	SUN	0.65	0.2	0.45													
########	MON	0.62	0.18	0.44													
########	TUES	0.7	0.183	0.517													
########	WEN	0.71	0.181	0.529													
########	THUR	0.72	0.184	0.536													
########	FRI	0.73	0.16	0.57	270		500										
########	SAT	0.7	0.162	0.538													
########	SUN	0.66	0.15	0.51													
########	MON	0.66	0.154	0.506													
########	TUES	0.7	0.16	0.54													
########	WEN	0.66	0.157	0.503													
########	THUR	0.73	0.18	0.55													
########	FRI	0.76	0.175	0.585	360		1200										
########	SAT	0.93	0.19	0.74													
3/1/2014	SAT	0.7	0.193	0.507													
3/2/2014	SUN	0.67	0.186	0.524													
3/3/2014	M	0.71	0.177	0.533													
3/4/2014	TUE	0.68	0.183	0.497													
3/5/2014	W	0.74	0.195	0.545													
3/6/2014	THU	0.73	0.196	0.534	240	30	1300	11									
3/7/2014	F	0.75	0.202	0.548													
3/8/2014	SAT	0.68	0.185	0.495													
3/9/2014	SUN	0.74	0.186	0.554													
########	M	0.81	0.188	0.622													
########	TUE	0.76	0.178	0.582													
########	W	0.77	0.176	0.594													
########	THU	0.76	0.163	0.597	180	30	840	11									
########	F	0.75	0.165	0.585													
########	SAT	0.66	0.166	0.494													
########	SUN	0.66	0.167	0.493													
########	M	0.74	0.179	0.561													
########	TUE	0.7	0.177	0.523													
########	W	0.73	0.177	0.553													
########	THU	0.77	0.178	0.592	130	30	130	5.7									
########	F	0.68	0.162	0.518													
########	SAT	0.67	0.164	0.506													
########	SUN	0.67	0.164	0.506													
########	M	0.76	0.164	0.596													
########	TUE	0.76	0.167	0.593													
########	W	0.72	0.17	0.55													
########	THU	0.73	0.17	0.56	330	100	850	11									
########	F	0.76	0.169	0.591													
########	SAT	0.74	0.176	0.564													
########	SUN	0.7	0.178	0.522													
########	M	0.77	0.187	0.583													
4/1/2014	Tu	0.74	0.179	0.561													
4/2/2014	W	0.72	0.178	0.532	130	30											
4/3/2014	Th	0.71	0.182	0.528	290	100	820	11									
4/4/2014	F	0.71	0.183	0.527													
4/5/2014	Sat	0.67	0.184	0.486													
4/6/2014	Sun	0.69	0.194	0.496													
4/7/2014	M	0.73	0.174	0.556	200	100											
4/8/2014	Tu	0.76	0.181	0.579													
4/9/2014	W	0.72	0.173	0.547													
########	Th	0.74	0.177	0.563	160	30	240	5.7									
########	F	0.72	0.168	0.552	250	30											
########	Sat	0.67	0.174	0.496													
########	Sun	0.74	0.187	0.553													
########	M	0.74	0.16	0.58	130	30											
########	Tu	0.74	0.178	0.562													
########	W	0.72	0.18	0.54	110	30											
########	Th	0.78	0.176	0.604	210	100	540	5.7									
########	F	0.72	0.167	0.553													
########	Sat	0.69	0.174	0.516													
########	Sun	0.71	0.184	0.526													
########	M	0.74	0.166	0.574	110	30											
########	Tu	0.74	0.186	0.554													
########	W	0.74	0.172	0.568													
########	Th	0.73	0.17	0.56	100	30	140	5.7									
########	F	0.82	0.183	0.637	120	100											
########	Sat	0.68	0.177	0.503													
########	Sun	0.7	0.181	0.519													
########	M	0.71	0.173	0.537	60	30											
########	Tu	0.78	0.173	0.607													
########	W	0.74	0.161	0.579	140	30											
5/1/2014	TH	0.7	0.186	0.514	230	100	390	11									
5/2/2014	FRI	0.67	0.177	0.533	140	30											
5/3/2014	SAT	0.71	0.183	0.527													
5/4/2014	SUN	0.68	0.195	0.485													
5/5/2014	MON	0.74	0.195	0.545													
5/6/2014	TUES	0.73	0.196	0.534													
5/7/2014	W	0.75	0.185	0.565	200	30											
5/8/2014	TH	0.68	0.186	0.494	160	30	380	11									
5/9/2014	FRI	0.74	0.188	0.552	100	30											
########	SAT	0.81	0.178	0.632													
########	SUN	0.76	0.176	0.584													
########	MON	0.77	0.163	0.607	110	30											

SECONDARY EFFLUENT CONSTITUENT

		Daily			Weekly										Quarterly		Annually: General Minerals (October)											
DATE	DAY	FLOW MGD (Q)	pH	EC umhos/	BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	nmonia (To (as N) mg/L	NITRATE (as N) mg/L	MDL	Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiu (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphorus (P)	Total Alkalinity	Hardnes	Cation Anion
########	SUN	0.45	7.4	650																								
########	MON	0.44	7.5	620																								
########	TUES	0.517	7.5	690																								
########	WEN	0.529	7.5	710																								
########	THUR	0.536	7.5	720																								
########	FRI	0.57	7.5	780	4.2		19.95	10		47.5	ND																	
########	SAT	0.538	7.5	780																								
########	SUN	0.51	7.4	800																								
########	MON	0.506	7.4	800																								
########	TUES	0.54	7.6	790																								
########	WEN	0.503	7.3	790																								
########	THUR	0.55	7.3	800																								
########	FRI	0.585	7.2	780	5.5		26.813	6.4		31.2	ND																	
########	SAT	0.74	7.4	810																								
3/1/2014	SAT	0.507	7.6	730																								
3/2/2014	SUN	0.524	7.7	710																								
3/3/2014	M	0.533	7.7	730											13	0.008												
3/4/2014	TUE	0.497	7.5	730																								
3/5/2014	W	0.545	7.4	740																								
3/6/2014	THU	0.534	7.5	760	0.03	1	0.1335	6.4	1.1	28.48	0.03	0.1																
3/7/2014	F	0.548	7.7	780																								
3/8/2014	SAT	0.495	7.6	800																								
3/9/2014	SUN	0.554	7.6	770																								
########	M	0.622	7.6	750																								
########	TUE	0.582	7.4	730																								
########	W	0.594	7.4	800																								
########	THU	0.597	7.4	790	1.5	1	7.4625	4	1.1	19.9	0.03	0.1																
########	F	0.585	7.4	780																								
########	SAT	0.494	7.5	770																								
########	SUN	0.493	7.5	770																								
########	M	0.561	7.6	770																								
########	TUE	0.523	7.5	780																								
########	W	0.553	7.5	790																								
########	THU	0.592	7.4	810																								
########	F	0.518	7.6	810	7.2	3	31.08	77	2.8	332.38	0.03	0.1																
########	SAT	0.506	7.6	810																								
########	SUN	0.506	7.6	820																								
########	M	0.596	7.6	770																								
########	TUE	0.593	7.4	770																								
########	W	0.55	7.4	770																								
########	THU	0.56	7.3	760	3.9	1	18.2	16	1.1	74.667	0.03	0.1																
########	F	0.591	7.4	770																								
########	SAT	0.564	7.5	770																								
########	SUN	0.522	7.6	740																								
########	M	0.583	7.6	720																								
4/1/2014	Tu	0.561	7.6	710																								
4/2/2014	W	0.532	7.6	720	1.9	1	8.4233																					
4/3/2014	Th	0.528	7.5	740	3.4	1	14.96	8.4	1.1	36.96	0.02	0.1																
4/4/2014	F	0.527	7.4	750																								
4/5/2014	Sat	0.486	7.6	780																								
4/6/2014	Sun	0.496	7.5	770																								
4/7/2014	M	0.556	7.8	780	1.3	1	6.0233																					
4/8/2014	Tu	0.579	7.5	830																								
4/9/2014	W	0.547	7.5	810													0.15	31	0.1	13	9.7	110	37	0.0028	3.1	140	130	0.0011
########	Th	0.563	7.7	920	8.2	1	38.472	4.8	1.1	22.52	0.02	0.1																
########	F	0.552	7.8	930	8.1	1	37.26																					
########	Sat	0.496	7.5	830																								
########	Sun	0.553	7.5	810																								
########	M	0.58	7.5	790	2.8	1	13.533																					
########	Tu	0.562	7.4	780																								
########	W	0.54	7.5	790	1.7	1	7.65																					
########	Th	0.604	7.5	800	3.6	1	18.12	8	1.1	40.267	0.02	0.1																
########	F	0.553	7.5	750																								
########	Sat	0.516	7.4	750																								
########	Sun	0.526	7.5	730																								
########	M	0.574	7.5	720	1.8	1	8.61																					
########	Tu	0.554	7.5	760																								
########	W	0.568	7.6	770																								
########	Th	0.56	7.5	780	3.1	1	14.467	8.6	1.1	40.133	0.02	0.1																
########	F	0.637	7.3	770	2.7	1	14.333																					
########	Sat	0.503	7.6	740																								
########	Sun	0.519	7.9	740																								
########	M	0.537	7.7	750	1	3	4.475																					
########	Tu	0.607	7.7	760																								
########	W	0.579	6.9	790	3.5	1	16.888																					
5/1/2014	TH	0.514	7.4	810	3.1	1	13.278	5.4	1.1	23.13	0.05	0.1																
5/2/2014	FRI	0.533	7.5	790	0.2	1	0.8883																					
5/3/2014	SAT	0.527	7.6	780																								
5/4/2014	SUN	0.485	7.7	760																								
5/5/2014	MON	0.545	7.6	730																								
5/6/2014	TUES	0.534	7.4	790																								
5/7/2014	W	0.565	7.4	820	4.7	1	22.129																					
5/8/2014	TH	0.494	7.4	820	3.2	1	13.173	6.2	1.1	25.523	0.4	0.1																
5/9/2014	FRI	0.552	7.4	810	0.2	1	0.92																					
########	SAT	0.632	7.4	780																								
########	SUN	0.584	7.4	730																								
########	MON	0.607	7.5	680	2.5	1	12.646																					

		INFLUENT CONSTITUENT															
		Daily			Weekly												
DATE	DAY	Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW (calc.)	BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L
########	TUES	0.76	0	0.76													
########	W	0.75	0	0.75	200	30											
########	TH	0.66	0	0.66	240	100	450	5.7									
########	FRI	0.66	0	0.66	190	30	180	5.7									
########	SAT	0.74	0	0.74													
########	SUN	0.7	0	0.7													
########	MON	0.73	0	0.73	28	10	44	2.8									
########	TUES	0.77	0	0.77													
########	W	0.68	0	0.68	32	10	43	5.7									
########	TH	0.67	0	0.67	150	30	260	5.7									
########	FRI	0.67	0	0.67	35	10	46	2.8									
########	SAT	0.76	0	0.76													
########	SUN	0.61	0	0.61													
########	MON	0.72	0	0.72													
########	TUES	0.73	0	0.73													
########	W	0.76	0	0.76													
########	TH	0.74	0	0.74	150	30	180	5.7									
########	FRI	0.7	0	0.7													
########	SAT	0.77	0	0.77													
6/1/2014	Sun	0.5	0.243	0.257													
6/2/2014	M	0.58	0	0.58													
6/3/2014	Tu	0.58	0	0.58													
6/4/2014	W	0.57	0	0.57													
6/5/2014	Th	0.56	0	0.56	170	100	340	5.7									
6/6/2014	F	0.67	0	0.67													
6/7/2014	Sat	0.47	0	0.47													
6/8/2014	Sun	0.49	0	0.49													
6/9/2014	M	0.63	0	0.63													
########	Tu	0.99	0.176	0.814													
########	W	0.88	0.217	0.663													
########	Th	0.87	0.235	0.635	94	30	250	5.7									
########	Fri	0.86	0.237	0.623													
########	Sat	0.83	0.229	0.601													
########	Sun	0.8	0.233	0.567													
########	M	0.87	0.236	0.634													
########	Tu	0.89	0.236	0.654													
########	W	0.89	0.233	0.657													
########	Th	0.85	0.238	0.612													
########	F	0.86	0.249	0.611	72	30	200	5.7									
########	Sat	0.81	0.231	0.579													
########	Sun	0.86	0.261	0.599													
########	M	0.88	0.242	0.638													
########	Tu	0.91	0.242	0.668													
########	W	0.88	0.243	0.637													
########	Th	0.82	0.229	0.591	170	100	390	11									
########	Fri	0.96	0.249	0.711													
########	Sat	0.81	0.238	0.572													
########	Sun	0.79	0.243	0.547													
########	M	0.89	0.24	0.65													
7/1/2014	T	0.89	0.24	0.65													
7/2/2014	W	0.96	0.276	0.584	160	100	360	11									
7/3/2014	TH	0.86	0.228	0.632													
7/4/2014	FR	0.93	0.221	0.709													
7/5/2014	SAT	0.9	0.237	0.663													
7/6/2014	SUN	1	0.249	0.751													
7/7/2014	M	0.73	0.262	0.468													
7/8/2014	T	0.87	0.26	0.61													
7/9/2014	W	0.86	0.227	0.633													
########	TH	0.89	0.238	0.652	190	100	470	11									
########	FR	0.84	0.225	0.615													
########	SAT	0.87	0.238	0.632													
########	SUN	0.81	0.235	0.575													
########	M	0.79	0.231	0.559													
########	T	0.9	0.251	0.649													
########	W	0.91	0.244	0.666													
########	TH	0.88	0.24	0.64	270	100	410	11									
########	FR	0.88	0.24	0.64													
########	SAT	0.99	0.24	0.75													
########	SUN	0.75	0.253	0.497													
########	M	0.73	0.217	0.513													
########	T	0.83	0.263	0.567													
########	W	0.94	0.235	0.705													
########	TH	0.84	0.256	0.584	150	30	450	11									
########	FR	0.85	0.245	0.605													
########	SAT	0.82	0.228	0.592													
########	SUN	0.8	0.22	0.58													
########	M	0.84	0.234	0.606													
########	T	0.95	0.254	0.696													
########	W	0.84	0.254	0.586													
########	TH	0.86	0.241	0.619	200	100	330	11									
8/1/2014	FR	0.87	0.24	0.63													
8/2/2014	SAT	0.89	0.276	0.514													
8/3/2014	SUN	0.79	0.228	0.562													
8/4/2014	M	0.75	0.221	0.529													
8/5/2014	T	0.87	0.237	0.633													
8/6/2014	W	0.83	0.249	0.581													
8/7/2014	TH	0.85	0.262	0.588	170	100	220	11									

		SECONDARY EFFLUENT CONSTITUENT														
		Daily			Weekly										Quarterly	
DATE	DAY	FLOW MGD (Q)	pH	EC umhos/	BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	mmonia (Tot (as N) mg/L	NITRATE (as N) mg/L	MDL
########	TUES	0.76	7.6	670												
########	W	0.75	7.6	670	2.2	1	13.75									
########	TH	0.66	7.8	660	3.1	1	17.05	9.2	1.1	50.6	0.05	0.1				
########	FRI	0.66	7.8	670	0.2	1	1.1	4.8	1.1	26.4						
########	SAT	0.74	7.4	650												
########	SUN	0.7	7.5	680												
########	MON	0.73	7.7	700	4.9	3	29.808	29	2.8	176.42						
########	TUES	0.77	7.9	750												
########	W	0.68	7.8	780	4.2	1	23.8	16	1.1	90.667						
########	TH	0.67	7.5	820	3.9	1	21.775	14	2.8	78.167	0.05	0.1				
########	FRI	0.67	7.6	820	3.4	1	18.983	22	2.8	122.83						
########	SAT	0.76	7.6	840												
########	SUN	0.61	7.6	850												
########	MON	0.72	7.7	850												
########	TUES	0.73	7.6	850												
########	W	0.76	7.6	850												
########	TH	0.74	7.4	840	3	1	18.5	9.5	2.8	58.583	0.05	0.1				
########	FRI	0.7	7.6	820												
########	SAT	0.77	7.5	820												
6/1/2014	Sun	0.257	7.6	820												
6/2/2014	M	0.58	7.6	820												
6/3/2014	Tu	0.58	7.5	810												
6/4/2014	W	0.57	7.6	810												
6/5/2014	Th	0.56	7.6	870	1	3	4.6667	6	1.1	28	0.01	0.1				
6/6/2014	F	0.67	7.7	920											14	0.008
6/7/2014	Sat	0.47	7.8	900												
6/8/2014	Sun	0.49	7.8	860												
6/9/2014	M	0.63	7.9	820												
########	Tu	0.814	7.9	830												
########	W	0.663	7.7	850												
########	Th	0.635	7.6	820	0.5	1	2.6458	3	1.1	15.875	0.01	0.1				
########	Fri	0.623	7.7	800												
########	Sat	0.601	7.7	800												
########	Sun	0.567	7.7	790												
########	M	0.634	7.7	770												
########	Tu	0.654	7.7	750												
########	W	0.657	7.7	760												
########	Th	0.612	7.6	780												
########	F	0.611	7.6	760	0.3	1	1.5275	2.4	1.1	12.22	0.01	0.1				
########	Sat	0.579	7.6	810												
########	Sun	0.599	7.7	810												
########	M	0.638	7.9	790												
########	Tu	0.668	7.6	800												
########	W	0.637	7.6	800												
########	Th	0.591	7.6	800	0.3	1	1.4775	2.6	1.1	12.805	0.01	0.1				
########	Fri	0.711	7.5	810												
########	Sat	0.572	7.6	790												
########	Sun	0.547	7.8	780												
########	M	0.65	7.8	780												
7/1/2014	T	0.65	7.5	830												
7/2/2014	W	0.584	7.7	840	0.5	1	2.4333	5	2.8	24.333	0.05	0.1				
7/3/2014	TH	0.632	7.6	960												
7/4/2014	FR	0.709	7.8	890												
7/5/2014	SAT	0.663	7.8	860												
7/6/2014	SUN	0.751	7.8	870												
7/7/2014	M	0.468	7.8	870												
7/8/2014	T	0.61	7.8	860												
7/9/2014	W	0.633	7.8	820												
########	TH	0.652	7.7	880	2.9	1	15.757	6.8	1.1	36.947	0.05	0.1				
########	FR	0.615	7.7	850												
########	SAT	0.632	7.8	860												
########	SUN	0.575	7.9	820												
########	M	0.559	7.8	800												
########	T	0.649	7.5	820												
########	W	0.666	7.6	820												
########	TH	0.64	7.7	830	0.5	1	2.6667	3.6	1.1	19.2	0.05	0.1				
########	FR	0.64	7.7	880												
########	SAT	0.75	7.8	830												
########	SUN	0.497	7.7	790												
########	M	0.513	7.8	800												
########	T	0.567	7.6	830												
########	W	0.705	7.7	820												
########	TH	0.584	7.7	820	1.3	1	6.3267	1.6	1.1	7.7867	0.05	0.1				
########	FR	0.605	7.8	820												
########	SAT	0.592	7.6	840												
########	SUN	0.58	7.8	860												
########	M	0.606	7.9	820												
########	T	0.696	7.8	840												
########	W	0.586	7.8	810												
########	TH	0.619	7.8	800	0.05	1	0.2579	3.6	1.1	18.57	0.05	0.1				
8/1/2014	FR	0.63	7	790												
8/2/2014	SAT	0.514	7.1	800												
8/3/2014	SUN	0.562	7.2	810												
8/4/2014	M	0.529	7.4	820												
8/5/2014	T	0.633	7.5	820												
8/6/2014	W	0.581	7.5	820												
8/7/2014	TH	0.588	7.3	870	0	1	0	2.8	1.1	13.72	0	0.1				

SECONDARY EFFLUENT CONSTITUENT											
Annually											
General Minerals (October)											
Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiu (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphoru (P)	Total Alkalinity	Hardnes	Cation Anion

INFLUENT CONSTITUENT																	
		Daily			Weekly												
DATE	DAY	Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW (calc.)	BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L
8/8/2014	FR	0.83	0.26	0.57													
8/9/2014	SAT	0.86	0.227	0.633													
########	SUN	0.77	0.238	0.532													
########	M	0.75	0.225	0.525													
########	T	0.82	0.238	0.582													
########	W	0.88	0.235	0.645													
########	TH	0.85	0.231	0.619	290	100	610	11									
########	FR	0.71	0.251	0.459													
########	SAT	0.94	0.244	0.696													
########	SUN	0.83	0.24	0.59													
########	M	0.71	0.24	0.47													
########	T	0.85	0.24	0.61													
########	W	0.77	0.253	0.517													
########	TH	0.87	0.217	0.653	140	30	140	11									
########	FR	0.82	0.263	0.557													
########	SAT	0.79	0.235	0.555													
########	SUN	0.74	0.256	0.484													
########	M	0.76	0.245	0.515													
########	T	0.83	0.228	0.602													
########	W	0.88	0.22	0.66													
########	TH	0.76	0.234	0.526													
########	F	0.83	0.254	0.576	200	100	310	11									
########	S	1.02	0.254	0.766													
########	SUN	0.92	0.241	0.679													
9/1/2014	M	0.79	0.25	0.54													
9/2/2014	Tue	0.79	0.259	0.661													
9/3/2014	W	0.92	0.257	0.663													
9/4/2014	Th	0.81	0.227	0.583	220	100	530	11									
9/5/2014	F	0.84	0.231	0.609													
9/6/2014	Sat	0.87	0.249	0.62													
9/7/2014	Sun	0.78	0.238	0.54													
9/8/2014	M	0.8	0.251	0.549													
9/9/2014	Tue	0.86	0.257	0.603													
########	W	0.84	0.24	0.6													
########	Th	0.87	0.241	0.629	130	30	400	11									
########	F	0.84	0.241	0.599													
########	Sat	0.85	0.258	0.592													
########	Sun	0.77	0.248	0.522													
########	M	0.77	0.247	0.523													
########	Tue	0.82	0.25	0.57													
########	W	0.82	0.236	0.584													
########	Th	0.88	0.248	0.632	160	30	730	11									
########	F	0.84	0.239	0.601													
########	Sat	0.93	0.255	0.675													
########	Sun	0.87	0.251	0.619													
########	M	0.7	0.232	0.468													
########	Tue	0.76	0.247	0.513													
########	W	0.68	0.235	0.445													
########	Th	0.66	0.233	0.427	98	30	210	11									
########	F	0.65	0.223	0.427													
########	Sat	0.74	0.239	0.501													
########	Sun	0.72	0.235	0.485													
########	M	0.73	0.236	0.494													
########	Tue	0.8	0.226	0.574													
########	W	0.79	0.22	0.57													
########	Th	0.79	0.223	0.657	65	30	220	20									
########	F	0.88	0.235	0.645													
########	Sat	0.76	0.244	0.516													
########	Sun	0.83	0.223	0.607													
########	M	0.8	0.229	0.571													
########	Tu	0.83	0.233	0.597													
########	W	0.73	0.205	0.525													
########	Th	0.8	0.229	0.571	170	30	350	11									
########	F	0.76	0.223	0.537													
########	Sat	0.75	0.233	0.517													
########	Sun	0.69	0.227	0.463													
########	M	0.81	0.245	0.565													
########	Tu	0.82	0.231	0.589													
########	W	0.88	0.237	0.643													
########	Th	0.88	0.246	0.634	240	30	300	11									
########	F	0.84	0.244	0.596													
########	Sat	0.76	0.242	0.518													
########	Sun	0.7	0.232	0.468													
########	M	0.81	0.241	0.569													
########	Tu	0.79	0.24	0.55													
########	W	0.76	0.228	0.532													
########	Th	0.86	0.241	0.619	250	100	900	28									
########	F	0.8	0.233	0.567													
########	Sat	0.82	0.263	0.557													
########	Sun	0.65	0.228	0.422													
########	M	0.8	0.236	0.564													
########	Tu	0.79	0.226	0.564													
########	W	0.77	0.238	0.532													
########	th	0.78	0.221	0.559	140	30	130	11									
########	fri	0.93	0.242	0.23													
########	Sat	1	0.26	0.74													
########	Sun	0.69	0.251	0.539													

SECONDARY EFFLUENT CONSTITUENT																
		Daily			Weekly									Quarterly		
DATE	DAY	FLOW MGD (Q)	pH	EC umhos/	BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	nmonia (To (as N) mg/L	NITRATE (as N) mg/L	MDL
8/8/2014	FR	0.57	7.3	850												
8/9/2014	SAT	0.633	7.3	840												
########	SUN	0.532	7.4	850												
########	M	0.525	7.4	860												
########	T	0.582	7.4	840												
########	W	0.645	7.4	860												
########	TH	0.619	7.2	860	1.1	1	5.6742	4.2	1.1	21.665	0	0.1				
########	FR	0.459	7.3	830												
########	SAT	0.696	7.8	890												
########	SUN	0.59	7.6	860												
########	M	0.47	7.5	860												
########	T	0.61	7.3	830												
########	W	0.517	7.3	780												
########	TH	0.653	7.4	770	0	1	0	4.8	1.1	26.12	0.1	0.1				
########	FR	0.557	7.3	800												
########	SAT	0.555	7.1	830												
########	SUN	0.484	7.5	850												
########	M	0.515	7.2	810												
########	T	0.602	7.2	810												
########	W	0.66	7.2	810												
########	TH	0.526	7.2	850												
########	F	0.576	7.2	820	0	1	0	5.6	1.1	26.88	0	0.1				
########	S	0.766	7.1	890												
########	SUN	0.679	7.3	840												
9/1/2014	M	0.54	7.46	800												
9/2/2014	Tue	0.661	7.43	860												
9/3/2014	W	0.663	7.24	860												
9/4/2014	Th	0.583	7.3	870	0.5	1	2.4292	4.8	1.1	23.32	0.05	0.1				
9/5/2014	F	0.609	7.3	860												
9/6/2014	Sat	0.62	7.32	830												
9/7/2014	Sun	0.54	7.4	800												
9/8/2014	M	0.549	7.44	840												
9/9/2014	Tue	0.603	7.36	820												
########	W	0.6	7.24	880												
########	Th	0.629	7.1	830	0.5	1	2.6208	3.8	1.1	19.918	0.05	0.1				
########	F	0.599	7.05	840												
########	Sat	0.592	7.15	950												
########	Sun	0.522	7.2	930												
########	M	0.523	7.37	870											15	0.008
########	Tue	0.57	7.24	890												
########	W	0.584	7.18	870												
########	Th	0.632	7.2	910	1.4	1	7.3733	9.6	1.1	50.56	0.05	0.1				
########	F	0.601	7.15	940												
########	Sat	0.675	7	840												
########	Sun	0.619	7.01	850												
########	M	0.468	7.07	790												
########	Tue	0.513	7.22	710												
########	W	0.445	7.06	730												
########	Th	0.427	7.16	770	1.7	1	6.0492	4.2	1.1	14.945	0.05	0.1				
########	F	0.427	6.9	790												
########	Sat	0.501	7.02	820												
########	Sun	0.485	7.18	740												
########	M	0.494	7.26	720												
########	Tue	0.574	7.1	890												
########	W	0.57	7.03	850												
########	Th	0.657	6.96	870	1.6	1	8.76	4.6	1.1	25.185	N/D	0.1				
########	F	0.645	6.98	910												
########	Sat	0.516	7.01	870												
########	Sun	0.607	7.08	830												
########	M	0.571	7.08	890												
########	Tu	0.597	7.03	850												
########	W	0.525	6.9	920												
########	Th	0.571	6.9	870	0	3	0	5.2	1.1	24.743	N/D	0.1				
########	F	0.537	6.94	880												
########	Sat	0.517	7.06	900												
########	Sun	0.463	7.1	940												
########	M	0.565	7.22	890												
########	Tu	0.589	6.96	930												
########	W	0.643	6.95	950												
########	Th	0.634	7	860	3.1	1	16.378	5.2	1.1	27.473	N/D	0.1				
########	F	0.596	7.1	860												
########	Sat	0.518	7.05	850												
########	Sun	0.468	7.61	800												
########	M	0.569	7.59	790												
########	Tu	0.55	7.04	820												
########	W	0.532	6.9	830												
########	Th	0.619	6.92	820	4.4	3	22.697	6	1.1	30.95	N/D	0.1				
########	F	0.567	6.94	880												
########	Sat	0.557	6.95	840												
########	Sun	0.422	7.04	960												
########	M	0.564	7.06	900												
########	Tu	0.564	6.86	910												
########	W	0.532	6.85	950												
########	th	0.559	6.75	940	2.3	1	10.714	8	1.1	37.267	N/D	0.1				
########	fri	0.23	6.85	900												
########	Sat	0.74	6.8	930												
########	Sun	0.539	6.85	710												

SECONDARY EFFLUENT CONSTITUENT											
Annually											
General Minerals (October)											
Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiu (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphoru (P)	Total Alkalinity	Hardnes	Cation Anion

DATE	DAY	INFLUENT CONSTITUENT															
		Daily			Weekly												
		Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW MGD (calc.)	BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L
########	M	0.79	0.24	0.55													
########	Tu	0.78	0.237	0.543													
########	W	0.78	0.234	0.546													
########	Th	0.79	0.228	0.562	360	100	950	28									
########	F	0.75	0.228	0.522													
########	Sat	0.76	0.233	0.527													
########	Sun	0.77	0.263	0.507													
########	M	0.93	0.254	0.676													
########	Tu	0.78	0.231	0.549													
########	W	0.69	0.23	0.46													
########	Th	0.76	0.233	0.527	150	30	170	11									
########	F	0.89	0.262	0.628													
########	Sat	0.7	0.221	0.479													
########	Sun	0.67	0.229	0.441													
########	M	0.79	0.237	0.553													
########	Tu	0.76	0.219	0.541													
########	W	0.78	0.223	0.557													
########	Th	0.74	0.224	0.516	150	30	450	11									
########	F	0.77	0.228	0.542													
########	Sat	0.74	0.216	0.524													
########	Sun	0.66	0.192	0.468													
########	M	0.76	0.203	0.557													
########	Tu	0.75	0.204	0.546	210	100	550	11									
########	W	0.76	0.206	0.554													
########	Th	0.72	0.215	0.505													
########	F	0.71	0.2	0.51													
########	Sat	0.66	0.221	0.439													
########	Sun	0.75	0.225	0.525													
########	M	0.75	0.225	0.525													
########	Tu	0.74	0.225	0.625													
########	W	0.85	0.229	0.621													
########	Th	0.79	0.223	0.567	91	30	130	11									
########	Fri	0.73	0.205	0.525													
########	Sat	0.78	0.227	0.553													
########	Sun	0.71	0.219	0.491													
########	M	0.63	0.201	0.429													
########	Tu	0.72	0.207	0.513	160	30	150	11									
########	W	0.72	0.222	0.498													
########	Th	0.73	0.234	0.496													
########	Fri	1.01	0.227	0.783													
########	Sat	0.96	0.24	0.72													
########	Sun	0.64	0.198	0.442													
########	M	0.64	0.202	0.438													
########	Tu	0.83	0.215	0.615													
########	W	0.79	0.188	0.602													
########	Th	0.71	0.196	0.514	180	30	320	11									
########	Fri	0.71	0.186	0.524													
########	Sat	0.78	0.205	0.575													
########	Sun	0.67	0.206	0.464													
########	M	0.66	0.193	0.467													
########	Tu	0.74	0.196	0.544	190	100	440	11									
########	W	0.69	0.185	0.505													
########	Th	0.7	0.197	0.503													
########	Fri	0.61	0.207	0.403													
########	Sat	0.66	0.187	0.473													
########	Sun	0.6	0.19	0.41													
########	M	0.58	0.184	0.396													
########	Tu	0.65	0.189	0.461	110	30	160	11									
########	TH	0.66	0.202	0.458													
1/1/2015	th	0.62	0.203	0.487													
1/2/2015	f	0.69	0.215	0.475													
1/3/2015	sat	0.69	0.214	0.476													
1/4/2015	sun	0.56	0.21	0.35													
1/5/2015	m	0.73	0.172	0.558													
1/6/2015	tu	0.74	0.205	0.535													
1/7/2015	w	0.76	0.208	0.552													
1/8/2015	th	0.76	0.217	0.543	180	100	300	40									
1/9/2015	f	0.79	0.216	0.574													
########	sat	0.67	0.223	0.447													
########	sun	0.63	0.198	0.432													
########	m	0.75	0.194	0.556													
########	tu	0.75	0.217	0.533													
########	w	0.73	0.22	0.51													
########	th	0.75	0.216	0.534	180	100	220	100									
########	f	0.72	0.214	0.506													
########	sat	0.68	0.209	0.471													
########	sun	0.66	0.212	0.448													
########	m	0.77	0.203	0.567													
########	tu	0.77	0.217	0.553													
########	w	0.73	0.219	0.511													
########	th	0.73	0.199	0.531	200	30	470	11									
########	F	0.74	0.199	0.541													
########	sat	0.72	0.214	0.506													
########	sun	0.64	0.223	0.417													
########	m	0.81	0.217	0.593													
########	tu	0.79	0.232	0.558	320	100											
########	w	0.75	0.237	0.513													

DATE	DAY	SECONDARY EFFLUENT CONSTITUENT														
		Daily			Weekly										Quarterly	
		FLOW MGD (Q)	pH	EC umhos/	BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	nmonia (To (as N) mg/L	NITRATE (as N) mg/L	MDL
########	M	0.55	6.9	730												
########	Tu	0.543	6.85	780												
########	W	0.546	6.84	800												
########	Th	0.562	6.85	820	5.2	1	24.353	8	1.1	37.467	0.1	0.1				
########	F	0.522	6.84	830												
########	Sat	0.527	6.84	820												
########	Sun	0.507	6.91	880												
########	M	0.676	7.04	840												
########	Tu	0.549	7.11	840												
########	W	0.46	7.15	820												
########	Th	0.527	7.1	800	3.7	1	16.249	11	2.8	48.308	0	0.1				
########	F	0.628	7.06	800												
########	Sat	0.479	7.11	800												
########	Sun	0.441	7.18	810												
########	M	0.553	7.17	810												
########	Tu	0.541	7.15	810												
########	W	0.557	7.12	870												
########	Th	0.516	7.16	880	3	1	12.9	9	1.1	38.7	0	0.1				
########	F	0.542	7.16	890												
########	Sat	0.524	7.11	880												
########	Sun	0.468	7.14	870												
########	M	0.557	7.19	840												
########	Tu	0.546	7.16	840	5.4	1	24.57	11	1.4	50.05	0	0.1				
########	W	0.554	7.14	870												
########	Th	0.505	7.15	890												
########	F	0.51	7.18	880												
########	Sat	0.439	7.15	860												
########	Sun	0.525	7.19	850												
########	M	0.525	7.2	840											15	0.008
########	Tu	0.625	7.1	820												
########	W	0.621	7.09	810												
########	Th	0.567	7.08	820	3.5	1	16.538	7.4	1.1	34.965	ND	0.1				
########	Fri	0.525	7.08	830												
########	Sat	0.553	7.16	840												
########	Sun	0.491	7.19	830												
########	M	0.429	7.29	850												
########	Tu	0.513	7.19	780	3.9	1	16.672	8.6	1.1	36.765	ND	0.1				
########	W	0.498	7.17	760												
########	Th	0.496	6.63	780												
########	Fri	0.783	6.33	660												
########	Sat	0.72	6.77	650												
########	Sun	0.442	6.94	700												
########	M	0.438	6.94	740												
########	Tu	0.615	6.86	810												
########	W	0.602	6.95	790												
########	Th	0.514	6.81	780												
########	Fri	0.524	7.09	850	4.3	1	18.777	8	1.1	34.933	ND	0.1				
########	Sat	0.575	7.13	830												
########	Sun	0.464	7.23	820												
########	M	0.467	7.28	820												
########	Tu	0.544	7.17	840	7.8	1	35.36	10	1.1	45.333	ND	0.1				
########	W	0.505	7.12	870												
########	Th	0.503	7.19	830												
########	Fri	0.403	7.25	870												
########	Sat	0.473	7.26	860												
########	Sun	0.41	7.24	840												
########	M	0.396	7.25	830												
########	Tu	0.461	6.37	830	3.6	1	13.83	9.8	1.4	37.648	ND	0.1				
########	TH	0.458	6.89	850												
1/1/2015	th	0.49	6.84	860												
1/2/2015	f	0.475	6.43	860												
1/3/2015	sat	0.476	6.9	870												
1/4/2015	sun	0.35	6.98	860												
1/5/2015	m	0.558	7.01	850												
1/6/2015	tu	0.535	6.92	840												
1/7/2015	w	0.552	6.79	840												
1/8/2015	th	0.543	6.71	870	1.5	1	6.7875	4.4	1.1	19.91	n/d	0.1				
1/9/2015	f	0.574	6.68	870												
########	sat	0.447	6.82	860												
########	sun	0.432	6.97	880												
########	m	0.556	7.05	860												
########	tu	0.533	6.84	870												
########	w	0.51	6.85	910												
########	th	0.534	6.82	890	5.2	1	23.14	10	1.1	44.5	0.3	0.1				
########	f	0.506	6.83	950												
########	sat	0.471	7.02	980												
########	sun	0.448	7.08	980												
########	m	0.567	7.09	980												
########	tu	0.553	6.93	950												
########	w	0.511	6.82	940												
########	th	0.531	6.89	940	4.1	1	18.143	8.2	1.1	36.285	n/d	0.1				
########	F	0.541	6.93	950												
########	sat	0.506	6.92	960												
########	sun	0.417	6.96	960												
########	m	0.593	7.02	980												
########	tu	0.558	6.89	980												
########	w	0.513	6.94	950												

SECONDARY EFFLUENT CONSTITUENT											
Annually											
General Minerals (October)											
Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiu (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphoru (P)	Total Alkalinity	Hardnes	Cation Anion

DATE	DAY	INFLUENT CONSTITUENT Daily Parshall Flume Flow MGD	Recircu lated Grit Flow MGD	TOTAL FLOW (calc.)	Weekly BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L	SECONDARY EFFLUENT CONSTITUENT Daily FLOW MGD (Q)	pH	EC umhos/	Weekly BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	mmonia (To (as N) mg/L	Quarterly NITRATE (as N) mg/L	MDL	SECONDARY EFFLUENT CONSTITUENT Annually General Minerals (October) Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiu (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphoru (P)	Total Alkalinity	Hardnes	Cation Anion
########	thur	0.65	0.217	0.433	190	100	560	28										0.433	6.95	950	4.8	1	17.32	4.2	1.1	15.155	n/d	0.1																
########	fri	0.69	0.209	0.481														0.481	6.98	850																								
########	sat	0.66	0.21	0.45														0.45	6.94	830																								
2/1/2015	Sun	0.66	0.204	0.456														0.3	6.9	710																								
2/2/2015	Mon	0.65	0.191	0.499														0.34	6.87	890																								
2/3/2015	Tu	0.69	0.199	0.491	100	210	7.5	920										0.061	6.84	840			5.6	13	ND																			
2/4/2015	Wen	0.64	0.212	0.428														0.407	6.86	810						0.18	1.9	16																
2/5/2015	Thur	0.75	0.218	0.532														0.371	6.89	770																								
2/6/2015	Fri	0.61	0.205	0.405														0.395	6.94	740																								
2/7/2015	Sat	0.68	0.226	0.454														0.306	6.89	730																								
2/8/2015	Sun	0.59	0.222	0.368														0.277	7.01	680																								
2/9/2015	Mon	0.52	0.208	0.312														0.3	6.96	640																								
########	Tu	0.59	0.204	0.386	160	320	7.3	890										0.263	6.89	640			3.9	7.4	ND																			
########	Wen	0.58	0.211	0.369														0.283	6.9	680																								
########	Thur	0.58	0.199	0.381														0.377	6.8	690									16															
########	Fri	0.65	0.206	0.444														0.444	6.81	690																								
########	Sat	0.79	0.209	0.581														0.284	6.8	690																								
########	Sun	0.64	0.213	0.427														0.358	6.81	680																								
########	Mon	0.68	0.194	0.486														0.438	6.93	730																								
########	Tu	0.75	0.207	0.543														0.323	6.75	820																								
########	Wen	0.75	0.205	0.545	250	320	7.7	920										0.2	6.85	950			14	14	ND																			
########	Thur	0.76	0.218	0.542														0.064	6.83	910																								
########	Fri	0.76	0.218	0.542														0.109	6.8	890																								
########	Sat	0.66	0.225	0.435														0.256	6.88	870																								
########	Sun	0.84	0.205	0.635														0.418	6.82	870																								
########	Mon	0.77	0.206	0.564														0.446	6.87	810																								
########	Tu	0.83	0.199	0.631	140	270		650										0.325	6.62	730			5.1	9.4	0.2																			
########	Wen	0.77	0.214	0.556			7.5											0.325	6.75	790																								
########	Thur	0.76	0.214	0.546														0.25	6.9	850																								
########	Fri	0.74	0.205	0.535														0.153	6.8	870																								
########	Sat	0.73	0.191	0.539														0.277	6.91	880																								
3/1/2015	S	0.73	0.204	0.526	66													0.278	6.87	880																								
3/2/2015	M	0.63	0.193	0.567														0.37	6.97	860																								
3/3/2015	Tu	0.76	0.227	0.533	52		40		8	21	47	950	0.1				9.9	0.372	6.86	850	7.8			16					0	2.3	13		0.1	38		17			47		4.1			
3/4/2015	W	0.7	0.204	0.496														0.368	6.94	860																								
3/5/2015	Th	0.76	0.222	0.538	110	180		930										0.448	6.5	860																								
3/6/2015	F	0.77	0.232	0.538														0.477	6.76	850			9.9	39.3525	20	79.5	n/d																	
3/7/2015	S	0.76	0.225	0.535			7.49											0.39	6.82	880																								
3/8/2015	S	0.67	0.211	0.459	29													0.407	6.99	890																								
3/9/2015	M	0.69	0.202	0.488														0.427	6.98	870																								
########	Tu	0.78	0.206	0.574	110		98		7.6	16	67	1000	2.3	7.9			12	0.424	6.86	900	70			22					0.31	0.23	15		0.11	40	0.29	17			56		4.7			
########	W	0.78	0.212	0.568														0.492	6.8	910																								
########	Th	0.8	0.23	0.57	150	210	7.64	1100										0.49	6.83	1000			4.9	20.00833	19	77.583	0.3	0.24	15		2.6	15		660	0.14	88								
########	F	0.74	0.218	0.522														0.503	6.86	980																								
########	S	0.75	0.206	0.544														0.499	6.89	930																								
########	S	0.71	0.196	0.514														0.506	6.97	890																								
########	M	0.7	0.185	0.515														0.508	7.04	880																								
########	Tu	0.79	0.182	0.608	140													0.557	7.03	850																								
########	W	0.78	0.187	0.593		240	7.71	870										0.537	6.97	840			6.2	27.745	12	53.7	0.1																	
########	Th	0.73	0.189	0.541	68													0.519	6.97	840																								
########	F	0.77	0.195	0.575	23													0.528	6.88	830																								
########	S	0.88	0.223	0.657														0.566	6.93	830																								
########	S	0.73	0.209	0.521														0.501	7.03	810																								
########	M	0.69	0.213	0.477														0.481	6.98	800																								
########	Tu	0.77	0.222	0.548	110													0.535	6.93	790																								
########	W	0.79	0.231	0.559	170	380	7.83	910										0.534	6.89	780			4.7	20.915	5.6	24.92	n/d																	
########	Th	0.79	0.22	0.57														0.551	6.84	790																								
########	F	0.79	0.22	0.57														0.548	6.81	810																								
########	S	0.82	0.227	0.593														0.518	6.77	830																								
########	S	0.77	0.265	0.505	84													0.304	6.89	820																								
########	M	0.72	0.211	0.509														0.334	6.84	810																								
########	Tu	0.77	0.205	0.565														0.374	6.83	880																								
4/1/2015	W	0.8	0.225	0.575			7.68											0.425	6.85	860																								
4/2/2015	Th	0.76	0.201	0.559	100	180		920										0.268	7.49	940			3.5	6	0.1																			
4/3/2015	F	0.76	0.217	0.543														0.429	7.44	950																								
4/4/2015	S	0.77	0.228	0.542														0.202	7.36	920																								
4/5/2015	S	0.69	0.209	0.481														0.105	6.98	860																								
4/6/2015	M	0.69	0.216	0.474														0.295	6.91	830																								
4/7/2015	Tu	0.78	0.227	0.553	99													0.317	7.09	810																								
4/8/2015	W	0.82	0.218	0.602	130	230	7.88	800										0.343	6.92	800			4.1	5.6	ND	0.093	1.2	14	8.1		15	570	0.15	36	0.015	14	9.1	110	39	0.017	3.7	42	150	16
4/9/2015	Th	0.77	0.209	0.561	110													0.237	6.83	770																								
########	F	0.77	0.208	0.562														0.207	6.79	780																								
########	S	0.71	0.198	0.512														0.232	6.81	770																								
########	S	0.73	0.222	0.508	54													0.361	6.79	770																								
########	M	0.68	0.192	0.488														0.256	6.81	800																								
########	Tu	0.78	0.188	0.592	81													0.426	6.8	800																								
########	W	0.77	0.194	0.576			7.56											0.429	6.73	790																								
########	Th	0.78	0.194	0.586	58	100		910										0.313	6.68	810			4.4	8.6	ND																			
########	F	0.77	0.189	0.581														0.298	6.75	820																								
########	S	0.76	0.195	0.565														0.261	6.71	810																								
########	S	0.7	0.19	0.51	32													0.164	6.71	810																								
########	M	0.74	0.197	0.543														0.236	6.82	830																								
########	Tu	0.77	0.193	0.577														0.426	6.83	830																								
########	W	0.66	0.198	0.462	400	1300	8.05	850										0.189	6.79	820			5.2	6.4	ND																			
########	Th	0.71	0.211	0.499														0.225	6.83	840																								
########	F	0.73	0.204	0.526														0.418	6.79	880																								
########	S	0.81	0.22	0.59														0.489	6.78	850																								

DATE	DAY	INFLUENT CONSTITUENT Daily Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW (calc.)	Weekly BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	Ammonia (Total) (as N) mg/L	Chloride mg/L	EC umhos/cm	NITRATE (as N) mg/L	Phosphorus (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L
########	S	0.77	0.215	0.555													
########	M	0.72	0.199	0.521													
########	Tu	0.75	0.179	0.571													
########	W	0.8	0.193	0.607	100	230	7.92	810									
########	Th	0.79	0.191	0.599													
5/1/2015	F	0.76	0.191	0.579													
5/2/2015	S	0.77	0.21	0.56													
5/3/2015	S	0.71	0.205	0.505													
5/4/2015	M	0.78	0.208	0.572													
5/5/2015	Tu	0.78	0.213	0.567													
5/6/2015	W	0.78	0.211	0.569													
5/7/2015	Th	0.74	0.222	0.518	120	260	7.77	860									
5/8/2015	F	0.77	0.205	0.565													
5/9/2015	S	0.72	0.22	0.5													
########	S	0.64	0.213	0.427													
########	M	0.73	0.208	0.522													
########	Tu	0.61	0.217	0.393	95	140	7.96	870									
########	W	0.58	0.215	0.365													
########	Th	0.62	0.236	0.384													
########	F	0.58	0.221	0.359													
########	S	0.6	0.239	0.361													
########	S	0.57	0.227	0.343													
########	M	0.64	0.238	0.402													
########	Tu	0.61	0.222	0.388	210	350	7.99	790									
########	W	0.59	0.224	0.366													
########	Th	0.68	0.238	0.442													
########	F	0.74	0.232	0.508													
########	S	0.65	0.222	0.428													
########	S	0.69	0.219	0.471													
########	M	0.76	0.219	0.541													
########	Tu	0.76	0.205	0.555													
########	W	0.79	0.21	0.58	80	160	7.68	1100									
########	Th	0.83	0.216	0.614													
########	F	0.78	0.204	0.576													
########	S	0.76	0.209	0.551													
########	S	0.69	0.196	0.494													
6/1/2015	M	0.74	0.199	0.531													
6/2/2015	Tu	0.73	0.201	0.529	95	200	7.62	1100									
6/3/2015	W	0.74	0.192	0.548													
6/4/2015	Th	0.73	0.191	0.539													
6/5/2015	F	0.81	0.192	0.618													
6/6/2015	S	0.77	0.213	0.557													
6/7/2015	S	0.79	0.208	0.582													
6/8/2015	M	0.86	0.214	0.646													
6/9/2015	Tu	0.91	0.222	0.688	95	250	7.71	910									
########	W	0.82	0.224	0.596													
########	Th	0.81	0.216	0.594													
########	F	0.84	0.22	0.62													
########	S	0.78	0.226	0.554													
########	S	0.73	0.215	0.515													
########	M	0.75	0.209	0.541													
########	Tu	0.73	0.209	0.521	140	270	7.88	840									
########	W	0.8	0.225	0.575													
########	Th	0.76	0.204	0.556													
########	F	0.69	0.175	0.515													
########	S	0.74	0.205	0.535													
########	S	0.68	0.197	0.483													
########	M	0.77	0.211	0.559													
########	Tu	0.72	0.192	0.528	94	220	7.67	900									
########	W	0.78	0.203	0.577													
########	Th	0.77	0.198	0.572													
########	F	0.73	0.206	0.524													
########	S	0.78	0.2	0.58													
########	S	0.74	0.216	0.524													
########	M	0.79	0.204	0.586													
########	Tu	0.84	0.206	0.634													
7/1/2015	W	0.83	0.225	0.575													
7/2/2015	Th	0.8	0.203	0.597	100	160	7.64	760									
7/3/2015	F	0.78	0.234	0.546													
7/4/2015	S	0.86	0.242	0.618													
7/5/2015	S	0.79	0.254	0.536													
7/6/2015	M	0.79	0.233	0.557													
7/7/2015	Tu	0.79	0.214	0.576	72	130	7.66	1000									
7/8/2015	W	0.79	0.216	0.574													
7/9/2015	Th	0.79	0.208	0.582													
########	F	0.84	0.222	0.618													
########	S	0.75	0.225	0.525													
########	S	0.78	0.266	0.514													
########	M	0.75	0.252	0.498													
########	Tu	0.85	0.296	0.554													
########	W	0.84	0.271	0.569													
########	Th	0.85	0.248	0.602	120	380	7.74	840									
########	F	0.8	0.214	0.586													
########	S	0.62	0.239	0.381													
########	S	0.72	0.233	0.487													
########	M	0.85	0.235	0.615													
########	Tu	0.87	0.238	0.632	37	31	7.58	990									

DATE	DAY	SECONDARY EFFLUENT CONSTITUENT Daily FLOW MGD (Q)	pH	EC umhos/cm	Weekly BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	Ammonia (Total) (as N) mg/L	Quarterly NITRATE (as N) mg/L	MDL	Annually General Minerals (October) Boron (B)	Calcium (Ca)	Iron (Fe)	Magnesium (Mg)	Potassium (K)	Sodium (Na)	Chloride	Manganese (Mn)	Phosphorus (P)	Total Alkalinity	Hardness	Cation Anion
########	S	0.422	6.86	790																								
########	M	0.44	6.9	790																								
########	Tu	0.501	6.81	780																								
########	W	0.499	6.85	800			7.3	10	ND																			
########	Th	0.529	6.77	800																								
5/1/2015	F	0.615	6.89	800																								
5/2/2015	S	0.476	6.9	830																								
5/3/2015	S	0.431	6.92	810																								
5/4/2015	M	0.507	6.84	810																								
5/5/2015	Tu	0.481	6.86	920																								
5/6/2015	W	0.474	6.83	850																								
5/7/2015	Th	0.414	6.89	1000			3.7	6.4	ND	0.2	1.3	18	8.7		19	670	0.13	94										
5/8/2015	F	0.428	6.91	970																								
5/9/2015	S	0.402	6.87	890																								
########	S	0.261	6.86	860																								
########	M	0.427	6.82	780																								
########	Tu	0.193	7.02	750			6.3	13	ND																			
########	W	0.252	6.95	800																								
########	Th	0.24	6.57	760																								
########	F	0.168	6.55	830																								
########	S	0.144	6.54	820																								
########	S	0.144	6.73	770																								
########	M	0.288	6.71	730																								
########	Tu	0.314	6.77	750			5.4	53	0.2																			
########	W	0.335	6.62	730																								
########	Th	0.413	6.81	710																								
########	F	0.421	6.64	710																								
########	S	0.382	6.78	660																								
########	S	0.444	6.81	650																								
########	M	0.5	6.89	680																								
########	Tu	0.526	6.87	740																								
########	W	0.563	6.84	930			5.9	12	ND																			
########	Th	0.553	6.9	880																								
########	F	0.527	6.89	830																								
########	S	0.515	6.92	820																								
########	S	0.477	7.06	810																								
6/1/2015	M	0.5	6.91	840																								
6/2/2015	Tu	0.456	7.16	980			1.3	4.4	ND	0.11	1.5	15	14		17	680	0.15	38										
6/3/2015	W	0.465	6.95	910																								
6/4/2015	Th	0.478	6.9	890																								
6/5/2015	F	0.529	6.85	880																								
6/6/2015	S	0.393	7.13	850																								
6/7/2015	S	0.414	7.06	810																								
6/8/2015	M	0.562	7.03	790																								
6/9/2015	Tu	0.53	7.26	800			ND	4	0.2																			
########	W	0.428	7.32	820																								
########	Th	0.49	7.29	810																								
########	F	0.47	7.04	860																								
########	S	0.344	7.16	790																								
########	S	0.222	7.14	860																								
########	M	0.473	7.13	830																								
########	Tu	0.336	7.23	890			2.8	5.6	0.1																			
########	W	0.437	7.06	880																								
########	Th	0.409	6.96	940																								
########	F	0.348	7.08	920																								
########	S	0.286	7.06	940																								
########	S	0.262	7.2	920																								
########	M	0.5	7.1	900																								
########	Tu	0.486	7.03	930			6.7	8	ND																			
########	W	0.482	7.1	890																								
########	Th	0.543	6.91	940																								
########	F	0.59	6.97	930																								
########	S	0.444	6.97	1000																								
########	S	0.486	7.19	1000																								
########	M	0.56	7.14	970																								
########	Tu	0.621	6.98	960																								
7/1/2015	W	0.523	6.93	980																								
7/2/2015	Th	0.549	6.78	960			3.6	8.4	0.1	0.15	2.9	16	13		19	640	0.15	79										
7/3/2015	F	0.345	6.86	900																								
7/4/2015	S	0.458	7.03	970																								
7/5/2015	S	0.389	7.01	860																								
7/6/2015	M	0.53	7	770																								
7/7/2015	Tu	0.504	6.83	770			2.9	8.8	0.2																			
7/8/2015	W	0.499	6.98	790																								
7/9/2015	Th	0.521	6.87	800																								
########	F	0.532	6.88	810																								
########	S	0.458	6.89	840																								
########	S	0.404	7.03	800																								
########	M	0.43	6.99	780																								
########	Tu	0.534	6.88	770																								
########	W	0.534	6.9	790																								
########	Th	0.443	6.92	790			7.6	8	0.1																			
########	F	0.545	6.94	810																								
########	S	0.33	6.83	830																								
########	S	0.439	7.07	810																								
########	M	0.574	6.9	750																								
########	Tu	0.583	6.86	800			7.1	11	n/d																			

DATE	DAY	INFLUENT CONSTITUENT																SECONDARY EFFLUENT CONSTITUENT															SECONDARY EFFLUENT CONSTITUENT											
		Daily			Weekly													Daily			Weekly										Quarterly		Annually											
																																	General Minerals (October)											
		Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW (calc.)	BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L	FLOW MGD (Q)	pH	EC umhos/	BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	nmonia (To (as N) mg/L	NITRATE (as N) mg/L	MDL	Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiu (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphoru (P)	Total Alkalinity	Hardnes	Cation Anion
########	W	0.84	0.233	0.607														0.538	6.94	810																								
########	Th	0.83	0.233	0.597														0.538	6.83	800																								
########	F	0.81	0.23	0.58														0.519	7.05	810																								
########	S	0.81	0.252	0.558														0.48	7.05	820																								
########	S	0.74	0.233	0.507														0.438	7.07	810																								
########	M	0.84	0.236	0.604														0.6	7.11	800																								
########	Tu	0.87	0.238	0.632	71	27	7.27	920										0.593	6.86	840			3.6	11	n/d																			
########	W	0.84	0.227	0.613														0.606	7.03	840																								
########	Th	0.84	0.225	0.615														0.634	6.95	820																								
########	F	0.84	0.225	0.615														0.55	6.91	840																								
8/1/2015	F	0.79	0.226	0.564														0.521	6.92	870																								
8/2/2015	S	0.78	0.23	0.55														0.488	7	840																								
8/3/2015	S	0.88	0.267	0.613														0.566	7.03	830																								
8/4/2015	M	0.81	0.243	0.567														0.496	7.03	840																								
8/5/2015	Tu	0.82	0.234	0.586	110	190	7.78	920										0.52	7.01	830			3.8	6.8	0.4	0.16	0.47	15	23		15	590	0.13	42										
8/6/2015	W	0.83	0.243	0.587														0.532	7	880																								
8/7/2015	Th	0.82	0.245	0.575														0.524	7.06	860																								
8/8/2015	F	0.8	0.248	0.552														0.504	7.21	860																								
8/9/2015	S	0.77	0.28	0.49														0.483	7.08	880																								
########	S	0.8	0.232	0.568														0.553	7.07	830																								
########	M	0.81	0.232	0.578	95	190	7.37	940										0.555	7.01	870			3.1	7.2	0.3																			
########	Tu	0.8	0.228	0.572														0.536	6.98	870																								
########	W	0.8	0.228	0.572														0.593	6.99	870																								
########	Th	0.81	0.226	0.584														0.586	6.91	880																								
########	F	0.88	0.247	0.633														0.573	7.14	880																								
########	S	0.74	0.206	0.534														0.541	7	810																								
########	S	0.76	0.213	0.547														0.517	7.05	810																								
########	M	0.92	0.229	0.691	140	200	7.68	860										0.739	7.06	800			3.3	8.8	0.2																			
########	Tu	0.87	0.245	0.625														0.605	6.96	820																								
########	W	0.84	0.235	0.605														0.565	6.92	840																								
########	Th	0.81	0.217	0.593														0.525	6.9	820																								
########	F	0.77	0.217	0.553														0.473	6.83	820																								
########	S	0.87	0.237	0.633														0.478	6.86	800																								
########	S	0.75	0.199	0.551														0.581	7.03	790																								
########	M	0.84	0.217	0.623	120	280	7.96	820										0.521	7	810			N/D	4.4	N/D																			
########	Tu	0.96	0.229	0.731														0.619	6.91	830																								
########	W	0.97	0.237	0.733														0.676	6.86	890																								
########	Th	0.86	0.231	0.629														0.594	6.91	880																								
########	F	0.81	0.251	0.559														0.436	6.92	850																								
########	S	0.78	0.239	0.541														0.432	7.05	840																								
########	S	0.78	0.241	0.539														0.729	6.98	830																								
9/1/2015	M	0.85	0.236	0.614														0.544	7.03	890																								
9/2/2015	Tu	0.83	0.232	0.598	240	430	7.6	890										0.539	7.02	880	3.2			2.4	0	0.15	0.65	14	3.6		15	610	0.16	42										
9/3/2015	W	0.81	0.234	0.576														0.495	7.17	870																								
9/4/2015	Th	0.8	0.233	0.567														0.494	7.02	870																								
9/5/2015	F	0.75	0.229	0.521														0.447	7.1	880																								
9/6/2015	S	0.78	0.244	0.536			7.66											0.464	7.06	890																								
9/7/2015	S	0.78	0.254	0.526														0.468	6.85	840																								
9/8/2015	M	0.85	0.232	0.618														0.552	6.96	840																								
9/9/2015	Tu	0.82	0.227	0.593	70	110	7.62	920										0.536	6.95	860	3.5			8	0																			
########	W	0.83	0.228	0.602														0.558	6.96	870																								
########	Th	0.82	0.217	0.603														0.547	7.03	880																								
########	F	0.8	0.219	0.581														0.487	7.04	860																								
########	S	0.55	0.226	0.324														0.27	7.06	860																								
########	S	0.69	0.228	0.462			7.41											0.368	6.86	850																								
########	M	0.75	0.216	0.534	140	440		1000										0.462	6.88	800	0			7.2	0																			
########	Tu	0.79	0.205	0.585			7.83											0.67	6.97	810																								
########	W	0.73	0.21	0.52														0.314	6.94	840																								
########	Th	0.86	0.238	0.622														0.478	7.11	920																								
########	F	0.7	0.208	0.492														0.461	7.07	860																								
########	S	0.6	0.21	0.39			7.84											0.32	7.01	870																								
########	S	0.61	0.196	0.414														0.36	7.03	840																								
########	M	0.64	0.207	0.433	96	140	7.07	950										0.363	7.02	820	1.5			7.6	0.2																			
########	Tu	0.63	0.217	0.413														0.326	6.97	830																								
########	W	0.64	0.219	0.421														0.358	6.96	790																								
########	Th	0.73	0.226	0.504			7.72											0.483	6.89	760																								
########	F	0.87	0.248	0.622														0.549	6.88	750																								
########	S	0.76	0.239	0.521			7.81											0.496	7.09	830																								
########	S	0.8	0.232	0.568			7.42											0.538	7	830																								
########	M	0.85	0.256	0.594														0.491	6.98	850																								
########	Tu	0.85	0.239	0.611	ND	230	7.33	1100										0.523	6.95	880	0			4	0.2																			
########				0.538														0.481	6.96	930																								
########				0.595														0.517	7.06	900																								
########				0.574														0.497	6.95	880																								
########				0.507														0.436	6.9	860																								
########				0.569														0.522	6.88	950																								
########				0.566	79		220		7.14								30	0.522	6.96	930	ND			5.6			ND			ND	13		0.15						60					
########				0.533														0.522	6.78	900																								
########				0.621														0.517	6.74	880																								
########				0.62														0.548	6.86	920																								
########				0.595														0.551	6.87	860																								
########				0.55														0.52	6.85	840																								
########				0.634														0.589	6.96	840																								
########				0.589	280		200		7.48									0.579	6.86	840	18			6.4			ND																	
########				0.628														0.57	7.01	860																								
########				0.628														0.522	6.9	850																								
########				0.585														0.484	6.81	830																								

INFLUENT CONSTITUENT

DATE	DAY	Daily: Parshall Flume Flow MGD	Daily: Recirculated Grit Flow MGD	Daily: TOTAL FLOW (calc.)	Weekly: BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L
########				0.581													
########				0.523													
########				0.542													
########				0.571	42		32		7.71								
########				0.575													
########				0.58													
########				0.556													
########				0.564													
########				0.555													
########				0.59													
########				0.601	110		200		7.58								
########				0.588													
########				0.575													
########				0.566													
########				0.44													
########				0.44													
########				0.557													
########				0.668													
########				0.603	160		250										21
########				0.545					7.61								
########				0.573													
########				0.544													
########				0.514													
########				0.572													
########				0.542	150		290										
########				0.525					7.79								
########				0.531													
########				0.566													
########				0.495													
########				0.51													
########				0.513													
########				0.535	150		210		7.6								
########				0.534													
########				0.512													
########				0.527													
########				0.514													
########				0.499													
########				0.285													
########				0.688	220		260		7.77								
########				0.551													
########				0.53													
########				0.469													
########				0.473													
########				0.47					7.51								
########				0.454													
########				0.504					7.68								
########				0.519	120		120										8.7
########					96		120			18	57	950	0.58	6.8	0.13	0.94	10
########																	
########				0.552													
########				0.514													
########				0.494													
########				0.44													
########				0.498													
########				0.496	190		190										
########				0.498					7.8								
########				0.58													
########				0.618													
########				0.374													
########				0.494													
########				0.506													
########				0.48	140		340										
########				0.459					7.93								
########				0.469													
########				0.464													
########				0.483													
########				0.394													
########				0.656													
########				0.587	150		710		7.63								
########				0.538													
########				0.504													
########				0.441													
########				0.422													
########				0.454													
########				0.507													
########				0.503	150		260		7.3								
########				0.442													
########				0.46													
########					60		74			15	45	860	0	4.8	0.16	0.9	9.8
########					77		67			12	40	790	0	3.5	0.15	0.59	6.7
########					49		60			11	70	870	0.05	3	0.15	0.89	40
Minimum		0.413	-0.057	0.23	23		2		7.14	11	40	790	0	3	0.13	0.59	6.7

SECONDARY EFFLUENT CONSTITUENT (Daily / Weekly / Quarterly) — SECONDARY EFFLUENT CONSTITUENT Annually, General Minerals (October)

DATE	Daily: FLOW MGD (Q)	pH	EC umhos/	Weekly: BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	nmonia (Tot (as N) mg/L	Quarterly: NITRATE (as N) mg/L	MDL	Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiu (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphoru (P)	Total Alkalinity	Hardnes	Cation Anion
########	0.484	6.86	840																								
########	0.484	6.93	820																								
########	0.448	6.93	820																								
########	0.467	6.76	890	ND			3.2			ND																	
########	0.517	6.91	880																								
########	0.515	6.82	870																								
########	0.505	6.78	860																								
########	0.456	6.77	860																								
########	0.464	7.01	860																								
########	0.507	7	850																								
########	0.515	6.8	840	ND			8			ND																	
########	0.504	6.86	890																								
########	0.493	6.83	880																								
########	0.478	6.8	860																								
########	0.432	6.77	860																								
########	0.432	6.86	840																								
########	0.422	7	830																								
########	0.544	6.88	790																								
########	0.49	6.82	790	ND			4			ND			ND	14		0.18						42					
########	0.453	6.91	810																								
########	0.449	6.87	830																								
########	0.445	6.86	830																								
########	0.391	6.89	830																								
########	0.427	7.02	830																								
########	0.451	6.94	830	5.7			5.8			ND																	
########	0.441	6.95	860																								
########	0.407	6.88	860																								
########	0.453	6.9	870																								
########	0.397	6.78	860																								
########	0.396	6.92	870																								
########	0.381	7.13	820																								
########	0.439	6.94	830	5.2			6.4			ND																	
########	0.437	6.88	840																								
########	0.403	7.03	860																								
########	0.436	6.23	880																								
########	0.423	6.88	950																								
########	0.402	6.85	910																								
########	0.197	6.92	920																								
########	0.633	6.96	900	2.3			6			ND																	
########	0.441	6.88	860																								
########	0.405	6.93	820																								
########	0.341	7.01	810																								
########	0.366	6.95	810																								
########	0.36	6.86	800																								
########	0.353	6.91	800																								
########	0.449	6.97	880																								
########	0.403	6.86	850	3.1			6			ND			0.26	16		0.12						54					
########																											
########			860	3.4			8					0.46	0.15	17		0.13		0.18				52		4.9			
########	0.398	6.87	850																								
########	0.445	6.87	870																								
########	0.427	6.83	990																								
########	0.399	7.12	860																								
########	0.352	7	830																								
########	0.445	6.83	840	1.5			2.00			ND																	
########	0.433	6.89	870																								
########	0.43	6.87	850																								
########	0.485	6.82	810																								
########	0.431	6.88	820																								
########	0.364	7.04	820																								
########	0.387	6.97	800																								
########	0.387	7.16	850	2.2			4.40			ND																	
########	0.393	6.87	930																								
########	0.351	6.99	950																								
########	0.441	6.87	930																								
########	0.454	6.83	930																								
########	0.42	6.75	850																								
########	0.329	6.76	820																								
########	0.606	6.86	790	4.3			4.00			ND																	
########	0.492	6.78	750																								
########	0.428	6.77	800																								
########	0.351	6.91	790																								
########	0.264	6.92	790																								
########	0.254	6.97	790																								
########	0.281	6.84	790																								
########	0.402	7.18	810	ND			7.20			ND																	
########	0.389	7.93	960																								
########	0.357	6.69	990																								
########			750	7			7					0.21	0.2	16				0.14				42		2.8			
########			770	3.3			7.6					0.89	0.041	12				0.15				42		2.8			
########			830	3.6			9					0.46	0	12				0.16				74		2.7			
Minimum	0.061	6.23	340	0			1.2		0	0		0	0	2.6		0.1	30	0.015	13	7.7	91	28	0.0018	1.6	42	130	0.0011

DATE	DAY	INFLUENT CONSTITUENT															
		Daily			Weekly												
		Parshall Flume Flow MGD	Recirculated Grit Flow MGD	TOTAL FLOW (calc.)	BOD mg/L weekly	MDL	TSS mg/L weekly	MDL	pH	mmonia (Tota (as N) mg/L	Chloride mg/L	EC umhos/c	NITRATE (as N) mg/L	hosphoru (P) mg/L	Boron (B) mg/L	Iron (Fe) mg/L	O&G mg/L
Maximum		1.28	0.526	1.123	890		2500		8	21	70	1000	2.3	7.9	0.16	0.94	40
Average		0.7781	0.2109	0.5651	144.34		244.1468		7.6331	15.5	54.333333	903.333	0.505	5.2	0.1475	0.83	16.456
St. Dev		0.1079	0.0542	0.088	96.873		281.3778		0.2161	3.7282704	12.323419	76.8548	0.9065	2.10594	0.01258	0.16145	11.525
Number		1369	1369	1461	245		226		16	6	6	6	6	5	4	4	9
lb/day					680.64		1151.31			73.09251	256.21676	4259.8	2.3814	24.5214	0.69556	3.91399	77.599
% Removal at average					98.13%		96.98%			97.07%	12%		#######		6.05%	83.59%	54.97%
lbs/day removed																	

DATE	SECONDARY EFFLUENT CONSTITUENT														
	Daily			Weekly										Quarterly	
	FLOW MGD (Q)	pH	EC umhos/	BOD mg/L	MDL	BOD lb/d (calc.)	TSS mg/L	MDL	TSS lb/d (calc.)	SS ml/L	MDL	O&G mg/L	nmonia (Tot (as N) mg/L	NITRATE (as N) mg/L	MDL
Maximum	1.123	8	1900	70			77		332.38	2.9		23	2.3	64	
Average	0.5349	7.2978	793.79	2.703056			7.365534		30.819	0.164		7.4093	0.454429	17.948	
St. Dev	0.1197	0.3707	121.29	5.556188			8.013674		35.204	0.4458		7.6563	0.819466	13.195	
Number	1461	1036	1465	203			244		1139	179		14	9	27	
lb/day				12.74665			34.73325		145.33			34.94	2.142924	84.637	

DATE	SECONDARY EFFLUENT CONSTITUENT												
	Annually												
	General Minerals (October)												
	Boron (B)	Calcium (Ca)	Iron (Fe)	agnesiu (Mg)	otassiur (K)	Sodium (Na)	Chloride	angane (Mn)	Phosphorus (P)	Total Alkalinity	Hardnes	Cation Anion
Maximum	0.18	660	0.29	88	9.7	110	74	0.017	4.9	140	150	16
Average	0.1386	102.73	0.1362	27.167	8.8333	103.66667	47.75	0.0072	3.377778	93.667	136.67	5.4704
St. Dev	0.0211	185.95	0.0788	29.849	1.0263	10.969655	12.234	0.0085	1.063929	49.217	11.547	9.1212
Number	14	11	9	6	3	3	12	3	9	3	3	3
lb/day	0.6535	484.43	0.6424	128.11	41.655	488.85528	225.17	0.034	15.9284			

	Influent	Effluent		Influent	Effluent		Influent	Effluent		Influent	Effluent		Influent	Effluent	
	Cyanide (total	Cyanide (total)		MBAS	MBAS		Arsenic	Arsenic		Cadmium	Cadmium		Calcium	Calcium	
	mg/L	mg/L	Removal %	mg/L	mg/L	Removal %	mg/L	mg/L	Removal %	mg/L	mg/L	Removal %	mg/L	mg/L	Removal
12/2/2015	0.006	<0.0028	76.67%	2.1	0.062	97.05%	0.014	0.0096	31.43%	0.0013	0.00066	49.23%			
3/10/2015	0.0071	0.005	29.58%				<0.0023	<0.0023	100.00%	0.0021	0.0007	66.67%	38	40	0.00%
3/3/2015	0.0066	0.0092	0.00%				0.0068	0.0046	32.35%	<0.0002	0.0002	0.00%	38	38	0.00%
3/23/2016	<0.0028	<0.0028	0.00%	6.3	0.1	98.41%	0.0061	0.0035	42.62%	0.0012	0.00051	57.50%			
5/10/2016	0.0033	0.0087	0.00%	3.3	<0.16	97.58%	0.017	0.0023	86.47%	0.0011	0.00089	19.09%			
6/14/2016	<0.0028	<0.0028	0.00%	1.8	0.085	95.28%	0.0081	0.006	25.93%	0.00087	0.00076	12.64%			
Average Conc.	0.0043	0.00452	69%	3.38	0.08	97%	0.009	0.005	53%	0.00111	0.00062	34%	38.00	39.00	0%
Lbs/day	0.02	0.02		15.92	0.39		0.04	0.02		0.01	0.00		179.19	183.91	

Use EPA 69%
Median

Use EPA 67%
Median

Assume 0.5 detection limit

	Influent Chromium mg/L	Effluent Chromium mg/L	Removal	Influent Copper mg/L	Effluent Copper mg/L	Removal	Influent Lead mg/L	Effluent Lead mg/L	Removal
12/2/2015	0.011	0.0032	70.91%	0.05	0.029	44.23%	0.0036	0.0032	11.11%
3/10/2015	0.015	0.0067	55.33%	0.37	0.038	89.73%	0.0063	0.002	68.25%
3/3/2015	0.0056	0.0035	37.50%	0.01	0.023	0.00%	<0.0014	<0.0091	0.00%
3/23/2016	0.0088	0.003	65.91%	0.04	0.012	72.09%	0.0033	<0.0014	78.79%
5/10/2016	0.0065	0.0028	56.92%	0.02	0.010	34.00%	0.0069	<0.0014	89.86%
6/14/2016	0.011	0.0028	74.55%	0.03	0.012	62.50%	<0.0014	<0.0014	0.00%
Average Conc.	0.00965	0.00367	60%	0.08750	0.02065	86%	0.00358	0.00198	61%
Lbs/day	0.05	0.02		0.41	0.10		0.02	0.01	
					Use EPA	86%		Use EPA	61%
						Median			Median

	Influent Magnesium mg/L	Effluent Magnesium mg/L	Removal	Influent Nickel mg/L	Effluent Nickel mg/L	Removal	Influent Silver mg/L	Effluent Silver mg/L	Removal
12/2/2015				0.0043	0.0014	67.44%	<0.0022	<0.0011	100.00%
3/10/2015	17	17	0.00%	0.0072	0.0042	41.67%	<0.0011	<0.0011	100.00%
3/3/2015	16	17	0.00%	0.0036	0.0064	0.00%	<0.0011	<0.0011	100.00%
3/23/2016				0.0044	0.0044	0.00%	<0.0011	<0.0011	100.00%
5/10/2016				0.003	0.0025	16.67%	<0.0022	<0.0011	100.00%
6/14/2016				0.0033	0.0023	30.30%	<0.0011	<0.0011	100.00%
Average Conc.	16.50	17.00	0%	0.00430	0.00353	26%	0.00073	0.00000	100%
Lbs/day	77.81	80.17		0.02	0.02		0.00	0.00	

	Influent Zinc mg/L	Effluent Zinc mg/L	Removal	Influent Mercury ng/L	Effluent Mercury ng/L	Removal	Influent Selenium ug/L	Effluent Selenium ug/L	Removal	Influent Barium mg/L	Effluent Barium mg/L	Removal	Influent Molybden mg/L	Effluent Molybdenum mg/L	Removal
12/2/2015	0.16	0.11	31.25%	<0.1	<0.52	0.00%	0.019	<0.018	52.63%	0.099	0.057	42.42%	0.033	0.034	0.00%
3/10/2015	1.8	0.12	93.33%	<0.1	<0.035	65.00%									
3/3/2015	0.13	0.074	43.08%	<0.035	<0.035	0.00%	0.012	0.006	50.00%	0.079	0.032	59.49%	0.037	0.027	27.03%
3/23/2016	0.18	0.1	44.44%	<0.1	<0.035	65.00%	0.0083	0.0032	61.45%	0.083	0.04	51.81%	0.062	0.075	0.00%
5/10/2016	0.11	0.087	20.91%	0.28	0.051	81.79%	0.018	0.016	11.11%	0.072	0.055	23.61%	0.039	0.04	0.00%
6/14/2016	0.15	0.086	42.67%	0.18	0.062	65.56%	0.0096	0.0061	36.46%	0.1	0.064	36.00%	0.0092	0.0079	14.13%
Average Conc.	0.42167	0.09617	46%	0.10	0.07	60%	0.01	0.01	42%	0.09	0.05	43%	0.0360	0.04	8%
Lbs/day	1.99	0.45		########	0.00		0.06	0.04		0.41	0.23		0.17	0.17	

Use EPA 60%
Median

	Influent Aluminum mg/L	Effluent Aluminum mg/L	Removal %	Influent Boron mg/L	Effluent Boron mg/L	Removal %
12/2/2015	0.75	0.095	87.33%			
3/10/2015	1.1	0.65	40.91%	0.13	0.11	15.38%
3/3/2015	0.39	0.3	23.08%	0.17	0.1	41.18%
3/23/2016	0.84	0.1	88.10%	0.16	0.16	0.00%
5/10/2016	0.44	0.12	72.73%	0.15	0.16	0.00%
6/14/2016	0.79	0.14	82.28%	0.15	0.15	0.00%
Average Conc.	0.72	0.23	66%	0.1520	0.1360	14%
Lbs/day	3.39	1.10		0.72	0.64	

	Influent	Effluent		Influent	Effluent		Influent	Effluent	
	Chloroform	Chloroform		Toluene	Toluene		Benzyl Alcoho	Benzyl Alcohol	
Det. Limit	0.014 ug/L	0.014 ug/L	Removal %	0.27 ug/L	0.27 ug/L	Removal %	1 ug/L	1 ug/L	Removal %
12/2/2015	0.44	0.74	0.00%	1	<0.27	86.50%			
3/3/2015	0.45	<0.14	84.44%	1.5	<0.27	91.00%	4.8	<0.6	93.75%
3/10/2015	2.4	<0.14	97.08%	1.8	<0.27	92.50%			
3/23/2016	<0.14	<0.14	0.00%	1.4	<0.27	90.36%			
5/10/2016	0.52	<0.14	86.54%	1.5	<0.27	91.00%			
5/10/2016	<0.14	<0.14	0.00%	1	<0.27	86.50%			
Average	0.6583	0.1817	44.68%	1.3667	0.1350	89.64%	4.8000	0.3000	93.75%
Lbs/day	3.1045E-03	8.5668E-04		6.4447E-03	6.3661E-04		2.2635E-02	1.4147E-03	

	Influent	Effluent		Influent	Effluent		Influent	Effluent	
	4 Methylphenc	4 Methylphenol		Phenol	Phenol		Bis (2-ethylhexyl) ph	Bis (2-ethylhexyl) phthalate	
Det. Limit	2 ug/L	2 ug/L	Removal %	5 ug/L	5 ug/L	Removal %	1 ug/L	1 ug/L	Removal %
12/2/2015									
3/3/2015	2.5	<1.1	78.00%	0.92	<0.63	65.76%	12	0.95	92.08%
3/10/2015									
3/23/2016				<0.63	0.73	0.00%			
5/10/2016									
5/10/2016									
Average	2.5000	0.5500	78.00%	0.6175	0.5225	32.88%	12.0000	0.9500	92.08%
Lbs/day	1.1789E-02	2.5936E-03		2.9119E-03	2.4639E-03		5.6588E-02	4.4799E-03	

Assume 0.5 detection limit

0.5 Detection Limit Assume detection limit

	Hex. Chromium			Cyanide (total)			Antimony			Arsenic		
	mg/kg		kg/year	mg/kg		kg/year	mg/kg		kg/year	mg/kg		kg/year
1/14/2015							19	19.0000	1.9	15	15.0000	1.5
11/4/2015	<0.02	0.0100	0.0									
11/9/2015	<0.02	0.0100	0.0									
12/4/2015				2.5	2.5000	0.3				11	11.0000	1.1
5/13/2016				2.6	2.6000	0.3				9.2	9.2000	0.9
	Average		Average	Average		Average	Average		Average	Average		Average
	(mg/kg)		(kg/yr)	(mg/kg)		(kg/yr)	(mg/kg)		(kg/yr)	(mg/kg)		(kg/yr)
	0.01	2.00	0.00	2.55	2.00	0.26	19.00	1.00	1.90	11.73	3.00	1.17
		Readings			Readings			Readings			Readings	

	Barium			Beryllium			Bis (2-ethylhexyl) phthalate			Boron		
	mg/kg		kg/year	mg/kg		kg/year	mg/kg		kg/year	mg/kg		kg/year
1/14/2015	970	970.0000	97.0	0.23	0.2300	0.0	0.97	0.9700	0.1			
11/4/2015												
11/9/2015												
12/4/2015	800	800.0000	80.0							33	33.0000	3.3
5/13/2016	530	530.0000	53.0							17	17.0000	1.7
	Average		Average	Average		Average	Average		Average	Average		Average
	(mg/kg)		(kg/yr)	(mg/kg)		(kg/yr)	(mg/kg)		(kg/yr)	(mg/kg)		(kg/yr)
	766.67	3.00	76.67	0.23	1.00	0.02	0.97	1.00	0.10	25.00	2.00	2.50
		Readings			Readings			Readings			Readings	

Metric Tons			Solids
100	not disposed yet	12/4/2015	86%
100		11/9/2015	87.00%
100		11/4/2015	66%
100		1/14/2015	86.00%
100		5/13/2016	64.00%
100			81%

Overall average

	Hex. Chromium			Cyanide (total)			Antimony			Arsenic		
	mg/L			mg/L			mg/L			mg/L		
1/14/2015												
5/13/2016							0.3	0.3100		0.6	0.6300	
11/5/2008												
7/21/2009												
	Average			Average			Average			Average		
	(mg/L)			(mg/L)			(mg/L)			(mg/L)		
							0.31	1.00		0.63	1.00	

	Barium			Beryllium			Bis (2-ethylhexyl) phthalate			Boron		
	mg/L			mg/L			mg/L			mg/L		
1/14/2015												
5/13/2016	26.0	26.0000		0.0	0.0073							
11/5/2008												
7/21/2009												
	Average			Average			Average			Average		
	(mg/L)			(mg/L)			(mg/L)			(mg/L)		
	26.00	1.00		0.01	1.00					#DIV/0!		

	Antimony	Arsenic	Barium	Beryllium
STLC (mg/L)	15	5	100	0.75
TTLC (mg/wet kg)	500	500	10000	75
Sample TTLC (mg/dry kg)	23.38462	14.44103	943.589744	0.283077
Solubility Ratio STLC/wet TTLC	0.016316	0.053693	0.03391304	0.031739
Predicted Max. Sample STLC (100%) (mg/L)	0.381538	0.775385	32	0.008985
Ratio Title 22 STLC/ Predicted Max. Sample STLC	39.31452	6.448413	3.125	83.47603
Max Allowable TTLC (dry) to meet STLC	919.3548	93.12169	2948.71795	23.63014
Limiting TTLC Value	500	93.12169	2948.71795	23.63014
Limiting TTLC/% solids at disposal	615.3846	114.6113	3629.19132	29.08325

	Cadmium			Chloride			Chromium			Cobalt		
	mg/kg		kg/year	mg/kg		kg/year	mg/kg		kg/year	mg/kg		kg/year
1/14/2015	8.5	8.5000	0.9				160	160.0000	16.0	3.9	3.9000	0.4
11/4/2015							120.0	120.0000	12.0			
11/9/2015							150	150.0000	15			
12/4/2015	6.7	6.7000	0.7	470	470.0000	47	140	140.0000	14.0			
5/13/2016	5.4	5.4000	0.5	920	920.0000	92	95	95.0000	9.5			
	Average (mg/kg)		Average (kg/yr)	Average (mg/kg)		Average (kg/yr)	Average (mg/kg)		Average (kg/yr)	Average (mg/kg)		Average (kg/yr)
	6.87	3.00	0.69	695.00	2.00	69.50	133.00	5.00	13.30	3.90	1.00	0.39
		Readings						Readings			Readings	

	Copper			Iron			Lead			Mercury		
	mg/kg		kg/year	mg/kg		kg/year	mg/kg		kg/year	mg/kg		kg/year
1/14/2015	610	610.0000	61.0				57	57.0000	5.7	0.011	0.0110	0.0
11/4/2015	480.0	480.0000	24.0				44.0	44.0000	4.4	0.1	0.1300	0.0
11/9/2015	550	550.0000	55				59	59.0000	5.9	0.22	0.2200	0.022
12/4/2015	510	510.0000	51.0	19000	19000.0000	1900	46	46.0000	4.6	0.15	0.1500	0.0
5/13/2016	390	390.0000	39.0	14000	14000.0000	1400	33	33.0000	3.3	0.14	0.1400	0.0
	Average (mg/kg)		Average (kg/yr)	Average (mg/kg)		Average (kg/yr)	Average (mg/kg)		Average (kg/yr)	Average (mg/kg)		Average (kg/yr)
	508.00	5.00	46.00	16500.00	2.00	1650.00	47.80	5.00	4.78	0.13	5.00	0.01
		Readings			Readings			Readings			Readings	

	Cadmium			Chloride			Chromium			Cobalt		
	mg/L			mg/L			mg/L			mg/L		
1/14/2015							11	11.0000				
5/13/2016	0.2	0.2400					6.7	6.7000		0.2	0.1500	
11/5/2008												
7/21/2009												
	Average (mg/L)			Average (mg/L)			Average (mg/L)			Average (mg/L)		
	0.24	1.00					8.85	2.00		0.15	1.00	

	Copper			Iron			Lead			Mercury		
	mg/L			mg/L			mg/L			mg/L		
1/14/2015	2.2	2.2000					0.64	0.6400				
5/13/2016	0.2	0.1700					1.4	1.4000		<0.0093	0.0047	
11/5/2008												
7/21/2009												
	Average (mg/L)			Average (mg/L)			Average (mg/L)			Average (mg/L)		
	1.19	2.00		#DIV/0!			1.02	2.00		0.00	1.00	

	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury
STLC (mg/L)	1	560	80	25	5	0.2
TTLC (mg/wet kg)	100	2500	8000	2500	1000	20
Sample TTLC (mg/dry kg)	8.451282	163.6923	4.8	625.230769	58.83077	0.160246
Solubility Rati STLC/wet TT	0.034951	0.066541	0.038462	0.00233268	0.021339	0.035714
Predicted Ma: Sample STLC (mg/L)	0.295385	10.89231	0.184615	1.45846154	1.255385	0.005723
Ratio Title 22 Predicted Ma:	3.385417	51.41243	433.3333	17.1413502	3.982843	34.94624
Max Allowable to meet STL(	28.61111	8415.819	2080	10717.2996	234.3137	5.6
Limiting TTL(	28.61111	2500	2080	2500	234.3137	5.6
Limiting TTL(at disposal	35.21368	3076.923	2560	3076.92308	288.3861	6.892308

	Molybdenum			Nickel			Nitrate (NO3)		
	mg/kg		kg/year	mg/kg		kg/year	mg/kg		kg/year
1/14/2015	22	22.0000	2.2	34	34.0000	3.4			
11/4/2015	16.0	16.0000	1.6	29.0	29.0000	2.9	35.0	35.0000	3.5
11/9/2015	21	21.0000	2.1	38	38.0000	3.8	28	28.0000	2.8
12/4/2015	24	24.0000	2.4	38	38.0000	3.8	1200	1200.0000	120
5/13/2016	12	12.0000	1.2	28	28.0000	2.8	0.97	0.9700	0.097
	Average		Average	Average		Average	Average		Average
	(mg/kg)		(kg/yr)	(mg/kg)		(kg/yr)	(mg/kg)		(kg/yr)
	19.00	5.00	1.90	33.40	5.00	3.34	315.99	4.00	31.60
		Readings			Readings			Readings	

	Nitrogen (Ammonia)			Potassium			Phosphorus		
	mg/kg		kg/year	mg/kg		kg/year	mg/kg		kg/year
1/14/2015									
11/4/2015	890.0	890.0000	89.0	2000.0	2000.0000	200.0			
11/9/2015	980	980.0000	98	2600	2600.0000	260	100	100.0000	10
12/4/2015	1500	1500.0000	150				8100	8100.0000	810
5/13/2016	730	730.0000	73				5800	5800.0000	580
	Average		Average	Average		Average	Average		Average
	(mg/kg)		(kg/yr)	(mg/kg)		(kg/yr)	(mg/kg)		(kg/yr)
	1025.00	4.00	102.50	2300.00	2.00	230.00	4666.67	3.00	466.67
		Readings			Readings			Readings	

	Selenium			Silver			Sodium		
	mg/kg		kg/year	mg/kg		kg/year	mg/kg		kg/year
1/14/2015	3.8	3.8000	0.4	1.4	1.4000	0.1			
11/4/2015	2.3	2.3000	0.2						
11/9/2015	3.5	3.5000	0.4						
12/4/2015	3.4	3.4000	0.3	1.6	1.6000	0.2			
5/13/2016	2	2.0000	0.2	0.88	0.8800	0.1			
	Average		Average	Average		Average	Average		Average
	(mg/kg)		(kg/yr)	(mg/kg)		(kg/yr)	(mg/kg)		(kg/yr)
	3.00	5.00	0.30	1.29	3.00	0.13	#DIV/0!		#DIV/0!
		Readings			Readings			Readings	

	Molybdenum			Nickel			Nitrate (NO3)		
	mg/L			mg/L			mg/L		
1/14/2015									
5/13/2016	0.5	0.5200		1.0	1.0000				
11/5/2008									
7/21/2009									
	Average			Average			Average		
	(mg/L)			(mg/L)			(mg/L)		
	0.52	1.00		1.00	1.00				

	Nitrogen (Ammonia)			Potassium			Phosphorus		
	mg/L			mg/L			mg/L		
1/14/2015									
5/13/2016									
11/5/2008									
7/21/2009									
	Average			Average			Average		
	(mg/L)			(mg/L)			(mg/L)		

	Selenium			Silver			Sodium		
	mg/L			mg/L			mg/L		
1/14/2015									
5/13/2016	0.3	0.2800		0.0	0.0120				
11/5/2008									
7/21/2009									
	Average			Average			Average		
	(mg/L)			(mg/L)			(mg/L)		
	0.28	1.00		0.01	1.00				

	Molybdenum	Nickel	Selenium	Silver
STLC (mg/L)	350	20	1	5
TTLC (mg/wet kg)	3500	2000	100	500
Sample TTLC (mg/dry kg)	23.38462	41.10769	3.692308	1.591795
Solubility Rati STLC/wet TT	0.027368	0.02994	0.093333	0.009278
Predicted Ma: Sample STLC (mg/L)	0.64	1.230769	0.344615	0.014769
Ratio Title 22 Predicted Ma:	546.875	16.25	2.901786	338.5417
Max Allowable to meet STL(	12788.46	668	10.71429	538.8889
Limiting TTL(	3500	668	10.71429	500
Limiting TTL(at disposal	4307.692	822.1538	13.18681	615.3846

	Thallium			Vanadium			Zinc		
	mg/kg		kg/year	mg/kg		kg/year	mg/kg		kg/year
1/14/2015	<5	2.5000	0.3	200	200.0000	20.0	1700	1700.0000	170.0
11/4/2015							1200.0	1200.0000	120.0
11/9/2015							1500	1500.0000	150.0
12/4/2015							1200	1200.0000	120.0
5/13/2016							880	880.0000	88.0
	Average (mg/kg)		Average (kg/yr)	Average (mg/kg)		Average (kg/yr)	Average (mg/kg)		Average (kg/yr)
	2.50	1.00	0.25	200.00	1.00	20.00	1296.00	5.00	129.60
		Readings			Readings			Readings	

	Thallium			Vanadium			Zinc		
	mg/L			mg/L			mg/L		
1/14/2015									
5/13/2016	0.2	0.1900		9.9	9.9000		71.0	71.0000	
11/5/2008									
7/21/2009									
	Average (mg/L)			Average (mg/L)			Average (mg/L)		
	0.19	1.00		9.90	1.00		71.00	1.00	

	Thallium	Vanadium	Zinc
STLC (mg/L)	7	24	250
TTLC (mg/wet kg)	700	2400	5000
Sample TTLC (mg/dry kg)	3.076923	246.1538	1595.077
Solubility Rati STLC/wet TT	0.076	0.0495	0.054784
Predicted Ma: Sample STLC (mg/L)	0.233846	12.18462	87.38462
Ratio Title 22 Predicted Ma:	29.93421	1.969697	2.860915
Max Allowable to meet STLC	92.10526	484.8485	4563.38
Limiting TTLC	92.10526	484.8485	4563.38
Limiting TTLC at disposal	113.3603	596.7366	5616.468

	Flow	Ec	pH	nonia (a	lb/day	rate (as	lb/day	BOD	lb/day	TSS	lb/day	Chloride	lb/day	Cyanide	lb/day	MBAS	lb/day	hosphor	lb/day	Al		As		Ba		B		Cd		Cr	lb/day	Cu	lb/day	Fe	lb/day	Pb	lb/day	Hg		Mo		Ni		Se		Ag		Zn		O&G		Chloromethane		Method 6	ethod 6	Log of	Proof of
	gpd	950 umho	Max 9.0	mg/l		mg/l		Max 1,000 mg/l		Max 1,000 mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l		mg/l					
			Min 6.0																																																						
PPG Permit No. 1038																																																									
2011																																																									
January - PPG results	50405																																																					0	
January - MCWD results																																																									
February - PPG results	47713																																																					7050	
February - MCWD results																																																									
March - PPG results	58833																																																					####	
March - MCWD results																																																									
April - PPG results	75679																																																					0	
April - MCWD results																																																									
May - PPG results	58246																																																						
May - MCWD results																																																									
June - PPG results																																																					1325 gallons of oil fine 6-16-11			
June - MCWD results																																																									
Semi Annual 1 - PPG results	91528	600	8.05					7.70	5.88	7.20	5.50																					0.02	0.01	0.08	0.06	0.00	0.00																				
Semi Annual 1 - MCWD results																																																									
July - PPG results	95031																																																					0	
July - MCWD results																																																									
August - PPG results	83179																																																					2550	
August - MCWD results																																																									
September - PPG results	77945																																																					1000	
September - MCWD results																																																									
October - PPG results	71030	890	7.12					1.50	0.89	8.20	4.86																					0.03	0.02	0.24	0.14																					2900	
October - MCWD results																																																									
November - PPG results	54582																																																					1546	
November - MCWD results																																																									
December - PPG results	47311																																																					3860	
December - MCWD results																																																									
Semi Annual 2 - PPG results																																																									
Semi Annual 2 - MCWD results																																																									
Annual																																																									
PPG Permit No. 1038																																																									
2012																																																									
January - PPG results	51024																																																					2350	
January - MCWD results		670																																																						
February - PPG results	46881																																																					2853	
February - MCWD results		710																																																						
March - PPG results	50845																																																					3675	
March - MCWD results																																																									
April - PPG results	89736																																																					1845	####
April - MCWD results			8.70																													0.01	0.01			0.00	0.00																				
May - PPG results	75847																																																					4950	
May - MCWD results		730																																																						
June - PPG results	70199																																																					3025	
June - MCWD results																																																									
Semi Annual 1 - PPG results																																																									
Semi Annual 1 - MCWD results		14000																																																						
July - PPG results	78935																																																					4125	
July - MCWD results																																																									
August - PPG results	77277																																																					6269	
August - MCWD results																																																									
September - PPG results																																																							1960	
September - MCWD results																																																									
October - PPG results	78100																																																						
October - MCWD results		15000																																																							
November - PPG results	73722																																																						
November - MCWD results		760																																																							
December - PPG results	54881																																																						
December - MCWD results		760																																																							
Semi Annual 2 - PPG results	81814	830	8.20					10.00	6.83	9.80	6.69																					0.04	0.03	0.41	0.28	0.01	0.01																				
Semi Annual 2 - MCWD results																																																									
Annual																																																									
PPG Permit No. 1038																																																									
2013																																																									
January - PPG results	71347																																																						
January - MCWD results		600																																																							
February - PPG results																																																									
February - MCWD results		620																												0.00	0.00	0.01	0.00			0.00	0.00					0.00	0.00					0.03	0.00								
March - PPG results	62283																																																						
March - MCWD results		1100																																																							
April - PPG results	67213																																																					6565	
April - MCWD results		3200																																																							
April - MCWD results 2		690																																																							
May - PPG results	77228																																																					2800	
May - MCWD results		760																																																							
June - PPG results	84471																																																						
June - MCWD results		630																																																							
Semi Annual 1 - PPG results	91944							5.90	4.53	20.00	15.34																					0.04	0.03	0.46	0.35	0.00	0.00																				
Semi Annual 1 - MCWD results																																																									
July - PPG results																																																									
July - MCWD results		700																																																							
August - PPG results	67345																																																						
August - MCWD results		750																																																							
September - PPG results	58164																																																					4359	
September - MCWD results		780																																																							
October - PPG results	52289																																																						
October - MCWD results		820																																																							
November - PPG results	35857																																																					1300	
November - MCWD results																																																									
December - PPG results	36211																																																						
December - MCWD results		920																																																							
Semi Annual 2 - PPG results	74649	800	7.65					39.00	24.29	56.00	34.88																					0.08	0.05	3.00	1.87	0.07	0.04																				
Semi Annual 2 - MCWD results																																																									
Annual																																																									
PPG Permit No. 1038																																																									
2014																																																									
January - PPG results	42724																																																					2050	
January - MCWD results																																																									
February - PPG results	43837																																																						
February - MCWD results																																																									
March - PPG results	62614																																																						
March - MCWD results																																																									
April - PPG results	53392																																																						
April - MCWD results																																																									
April - MCWD results 2																																																									
May - PPG results	47994	830	8,74					22.00	8.81	30.00	12.01									0.11	0.04	0.01	0.01	0.13	0.05	0.10	0.04	0.00	0.00	0.01	0.00	0.02	0.01			0.00	0.00	0.00	0.00			0.00	0.00	0.05	0.02	0.00	0.00	0.09	0.04							400	
May - MCWD results																																																									
June - PPG results	53275																																																						
June - MCWD results																																																									
Semi Annual 1 - PPG results																																																									
Semi Annual 1 - MCWD results																																																									
July - PPG results	47519																																																						
July - MCWD results																																																									
August - PPG results	59875																																																						
August - MCWD results																																																									
September - PPG results	68875																																																						
September - MCWD results																																																									

October - PPG results	66384																																																								
October - MCWD results																																																									
November - PPG results																																																									
November - MCWD results																																																									
December - PPG results																																																									
December - MCWD results																																																									
Semi Annual 2 - PPG results																																																									
Semi Annual 2 - MCWD results																																																									
Annual																																																									

PPG Permit No. 1038
2015

January - PPG results	103992	926																																																					
January - MCWD results																																																									
February - PPG results																																																									
February - MCWD results																																																									
March - PPG results																																																									
March - MCWD results																																																									
April - PPG results																																																									
April - MCWD results																																																									
April - MCWD results 2																																																									
May - PPG results																																																									
May - MCWD results																																																									
June - PPG results																																																									
June - MCWD results																																																									
Semi Annual 1 - PPG results																																																									
Semi Annual 1 - MCWD results																																																									
July - PPG results																																																									
July - MCWD results																																																									
August - PPG results																																																									
August - MCWD results																																																									
September - PPG results																																																									
September - MCWD results																																																									
October - PPG results	54714																																																								
October - MCWD results																																																									
November - PPG results																																																									
November - MCWD results																																																									
December - PPG results																																																									
December - MCWD results																																																									
Semi Annual 2 - PPG results																																																									
Semi Annual 2 - MCWD results																																																									
Annual																																																									
10/22/2015		760		0.16	0.09	8.70	4.73	0.00	0.00	1.20	0.65	29.00	15.75	0.00	0.00	0.00	0.00	0.44	0.24	0.15	0.08	0.01	0.00	0.10	0.05	0.08	0.04	0.00	0.00	0.01	0.01	0.01	0.00	0.24	0.13	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.00	0.00			0.00	0.00		
5/24/2016		590		0.00	0.00	5.40	2.93	0.00	0.00	0.00	0.00	22.00	11.95	0.00	0.00	0.00	0.00	0.10	0.05	0.02	0.01	0.01	0.01	0.05	0.03	0.05	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	2.00	1.09			0.00	0.00		
65103	average flow (gpd)																																																								

Air Products Permit No. 1140
2011

January - Air Products results	20715	680	8.05					5.00	0.86	13.00	2.25																					0.03	0.01	0.45	0.08																						
January - MCWD results																																																									
February - Air Products results	21687																																																								
February - MCWD results																																																									
March - Air Products results	25125																																																								
March - MCWD results																																																									
April - Air Products results	26797	790	6.95					3.70	0.83	2.60	0.58																					0.02	0.00	0.17	0.04																						
April - MCWD results																																																									
May - Air Products results	24303																																																								
May - MCWD results																																																									
June - Air Products results																																																									
June - MCWD results																																																									
Semi Annual 1 - Air Products results	32153	780	8.15					1.50	0.40	2.20	0.59																					0.03	0.01	0.23	0.06																						
Semi Annual 1 - MCWD results																																																									
July - Air Products results	34205																																																								
July - MCWD results																																																									
August - Air Products results	33371																																																								
August - MCWD results																																																									
September - Air Products results	35238																																																								
September - MCWD results																																																									
October - Air Products results	32563	890	7.12					1.50	0.41	8.20	2.23																					0.03	0.01	0.24	0.07																						
October - MCWD results																																																									
November - Air Products results	22179																																																								
November - MCWD results																																																									
December - Air Products results	540882																																																								
December - MCWD results																																																									
Semi Annual 2 - Air Products results																																																									
Semi Annual 2 - MCWD results																																																									
Annual																																																									

Air Products Permit No. 1140
2012

January - Air Products results	18214	830	8.51					12.00	1.82	8.90	1.35																					0.03	0.00	0.26	0.04																						
January - MCWD results																																																									
February - Air Products results	18013																																																								
February - MCWD results																																																									
March - Air Products results	19758																																																								
March - MCWD results																																																									
April - Air Products results	21780	760	8.49					8.00	1.45	8.40	1.53																					0.02	0.00	0.32	0.06																						
April - MCWD results		600	7.40					0.00	0.00	0.00	0.00																					0.01	0.00																								
May - Air Products results	24144																																																								
May - MCWD results			7.60																													0.01	0.00																								
June - Air Products results																																																									
June - MCWD results																																																									
Semi Annual 1 - Air Products results	29660	810	8.50					5.00	1.24	4.00	0.99																					0.02	0.00	0.26	0.06																						
Semi Annual 1 - MCWD results																																																									
July - Air Products results	38225																																																								
July - MCWD results																																																									
August - Air Products results	45054																																																								
August - MCWD results																																																									
September - Air Products results																																																									
September - MCWD results																																																									
October - Air Products results	43013																																																								
October - MCWD results																																																									
November - Air Products results	39370																																																								
November - MCWD results																																																									
December - Air Products results	37013																																																								
December - MCWD results																																																									
Semi Annual 2 - Air Products results	46556	810	9.00					7.50	2.91	5.80	2.25																					0.02	0.01	0.25	0.10																						
Semi Annual 2 - MCWD results																																																									
Annual																																																									

Air Products Permit No. 1140
2013

January - Air Products results																																																									
January - MCWD results																																																									
February - Air Products results	32504																																																								
February - MCWD results																																																									
March - Air Products results	34114																																																								
March - MCWD results																																																									
April - Air Products results	40267	820	8.12					2.10	0.71	20.00	6.72																					0.02	0.01	0.52	0.17																						
April - MCWD results																																																									
May - Air Products results	53410																																																								
May - MCWD results																																																									
June - Air Products results	43860																																																								
June - MCWD results																																																									

Semi Annual 1 - Air Products results	58038	830	7.51					1.50	0.73	0.70	0.34																					0.01	0.00	0.10	0.05
Semi Annual 1 - MCWD results
July - Air Products results
July - MCWD results
August - Air Products results	45463
August - MCWD results
September - Air Products results	40036
September - MCWD results
October - Air Products results	37753
October - MCWD results
November - Air Products results	37052
November - MCWD results
December - Air Products results	30667
December - MCWD results
Semi Annual 2 - Air Products results	47858	800	7.71					2.30	0.92	0.80	0.32																					0.01	0.00	0.12	0.05
Semi Annual 2 - MCWD results
Annual

Air Products Permit No. 1140
2014

January - Air Products results	31394	770	7.68					3.90	1.02	13.00	3.41																					0.01	0.00			0.23	0.06
January - MCWD results
February - Air Products results	31799
February - MCWD results
March - Air Products results
March - MCWD results
April - Air Products results	35646
April - MCWD results
May - Air Products results	33485
May - MCWD results
June - Air Products results	35840
June - MCWD results
Semi Annual 1 - Air Products results	36056	820	7.90					8.10	2.44	4.00	1.20																					0.01	0.00
Semi Annual 1 - MCWD results
July - Air Products results	48547
July - MCWD results
August - Air Products results	19780
August - MCWD results
September - Air Products results	25395
September - MCWD results
October - Air Products results	19447
October - MCWD results
November - Air Products results	13282
November - MCWD results
December - Air Products results
December - MCWD results
Semi Annual 2 - Air Products results
Semi Annual 2 - MCWD results
Annual

Air Products Permit No. 1140
2015

January - Air Products results
January - MCWD results
February - Air Products results	13939
February - MCWD results
March - Air Products results	17374
March - MCWD results
April - Air Products results	20014
April - MCWD results
May - Air Products results
May - MCWD results
June - Air Products results
June - MCWD results
Semi Annual 1 - Air Products results
Semi Annual 1 - MCWD results
July - Air Products results
July - MCWD results
August - Air Products results
August - MCWD results
September - Air Products results
September - MCWD results
October - Air Products results	23923
October - MCWD results
November - Air Products results
November - MCWD results
December - Air Products results
December - MCWD results
Semi Annual 2 - Air Products results
Semi Annual 2 - MCWD results
Annual
11/5/2015
33590	average flow (gpd)	870		0.28	0.08	7.00	1.96	19.00	5.33	2.80	0.78	22.00	6.17	0.01	0.00	0.12	0.03	1.60	0.45	0.06	0.02	0.01	0.00	0.09	0.03	0.06	0.02	0.00	0.00	0.01	0.00	0.01	0.00	0.20	0.06	0.00	0.00	0.00	0.00	0.78	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.02			0.00	0.00		0.00
5/19/2016		800		0.10	0.03	5.90	1.65	2.10	0.59	13.00	3.64	40.00	11.21	0.01	0.00	0.00	0.00	0.31	0.09	0.03	0.01	0.01	0.00	0.08	0.02	0.07	0.02	0.00	0.00	0.01	0.00	0.01	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.07	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.08	0.02			0.00	0.00		0.00

Rio Bravo Permit No. 1005
2011

January - Rio Bravo results	119337	923
January - MCWD results
February - Rio Bravo results	106221	894
February - MCWD results
March - Rio Bravo results	124645	932
March - MCWD results
April - Rio Bravo results	130735	931
April - MCWD results
May - Rio Bravo results	98670	863
May - MCWD results
June - Rio Bravo results		932
June - MCWD results
Semi Annual 1 - Rio Bravo results	133433		7.97					0.00	0.00	0.00	0.00
Semi Annual 1 - MCWD results
July - Rio Bravo results	121508	889
July - MCWD results
August - Rio Bravo results	126380	920
August - MCWD results
September - Rio Bravo results	145757	939
September - MCWD results
October - Rio Bravo results	130053	915
October - MCWD results
November - Rio Bravo results	120523	940
November - MCWD results
December - Rio Bravo results	116033	935
December - MCWD results
Semi Annual 2 - Rio Bravo results			8.20					0.00	0.00	0.00	0.00
Semi Annual 2 - MCWD results
Annual

Rio Bravo Permit No. 1005
2012

January - Rio Bravo results	119860	931
January - MCWD results		800
February - Rio Bravo results	107991	871
February - MCWD results		850
March - Rio Bravo results	120812	932
March - MCWD results
April - Rio Bravo results	138148	932

April - MCWD results		960	8.00																																																						
May - Rio Bravo results	120143	869	8.05					3.40	3.41	12.00	12.03																																														
May - MCWD results		450																																																							
June - Rio Bravo results		925																																																							
June - MCWD results																																																									
Semi Annual 1 - Rio Bravo results	131137		7.80					1.50	1.64	1.80	1.97																																															
Semi Annual 1 - MCWD results																																																									
July - Rio Bravo results		927																																																							
July - MCWD results																																																									
August - Rio Bravo results	107654	926																																																							
August - MCWD results																																																									
September - Rio Bravo results	98240	802																																																							
September - MCWD results																																																									
October - Rio Bravo results	123222	937																																																							
October - MCWD results		1000																																																							
November - Rio Bravo results	86166	823																																																							
November - MCWD results		350																																																							
December - Rio Bravo results	72230	918																																																							
December - MCWD results		990																																																							
Semi Annual 2 - Rio Bravo results	124873		7.80					1.50	1.56	1.80	1.88																																															
Semi Annual 2 - MCWD results																																																									
Annual																																																									

Rio Bravo Permit No. 1005
2013

January - Rio Bravo results	59614	910																																																							
January - MCWD results		1000																																																							
February - Rio Bravo results	13803	381																																																							
February - MCWD results		900																											0.00	0.00	0.02	0.00			0.00	0.00					0.00	0.00					0.05	0.01								
March - Rio Bravo results	111150	860																																																							
March - MCWD results		1100																																																							
April - Rio Bravo results	121208	934																																																							
April - MCWD results		1800																																																							
May - Rio Bravo results	113073	850	7.85					0.00	0.00	2.60	2.45																																															
May - MCWD results		1000																																																							
June - Rio Bravo results	117395	925																																																							
June - MCWD results		820																																																							
Semi Annual 1 - Rio Bravo results																																																									
Semi Annual 1 - MCWD results																																																									
July - Rio Bravo results		944																																																							
July - MCWD results		880																																																							
August - Rio Bravo results	122585	939																																																							
August - MCWD results		870																																																							
September - Rio Bravo results	105744	843																																																							
September - MCWD results		1000																																																							
October - Rio Bravo results	117742	941																																																							
October - MCWD results		1000																																																							
November - Rio Bravo results	95159	841																																																							
November - MCWD results																																																									
December - Rio Bravo results	102797	925																																																							
December - MCWD results		1000																																																							
Semi Annual 2 - Rio Bravo results	127035		7.96					4.70	4.98	16.00	16.96																																															
Semi Annual 2 - MCWD results																																																									
Annual																																																									

Rio Bravo Permit No. 1005
2014

January - Rio Bravo results	103789	942																																																							
January - MCWD results																																																									
February - Rio Bravo results	61221	689																																																							
February - MCWD results																																																									
March - Rio Bravo results	112452	945																																																							
March - MCWD results																																																									
April - Rio Bravo results	110214	946																																																							
April - MCWD results																																																									
May - Rio Bravo results	90421	762																																																							
May - MCWD results																																																									
June - Rio Bravo results	128105	935																																																							
June - MCWD results																																																									
Semi Annual 1 - Rio Bravo results																																																									
Semi Annual 1 - MCWD results																																																									
July - Rio Bravo results	129574	944																																																							
July - MCWD results																																																									
August - Rio Bravo results	118907	941																																																							
August - MCWD results																																																									
September - Rio Bravo results	97442	914																																																							
September - MCWD results																																																									
October - Rio Bravo results	114656	942																																																							
October - MCWD results																																																									
November - Rio Bravo results	106038	932																																																							
November - MCWD results																																																									
December - Rio Bravo results	106292	911																																																							
December - MCWD results																																																									
Semi Annual 2 - Rio Bravo results																																																									
Semi Annual 2 - MCWD results																																																									
Annual																																																									

Rio Bravo Permit No. 1005
2015

January - Rio Bravo results	103992	926																																																							
January - MCWD results																																																									
February - Rio Bravo results	77973	736																																																							
February - MCWD results																																																									
March - Rio Bravo results	117575	947																																																							
March - MCWD results																																																									
April - Rio Bravo results	113358	937																																																							
April - MCWD results																																																									
May - Rio Bravo results	77768	727																																																							
May - MCWD results																																																									
June - Rio Bravo results	109896	945																																																							
June - MCWD results																																																									
Semi Annual 1 - Rio Bravo results																																																									
Semi Annual 1 - MCWD results																																																									
July - Rio Bravo results	127156																																																								
July - MCWD results																																																									
August - Rio Bravo results	127156	946																																																							
August - MCWD results																																																									
September - Rio Bravo results	101524	901																																																							
September - MCWD results																																																									
October - Rio Bravo results	137121	940																																																							
October - MCWD results																																																									
November - Rio Bravo results																																																									
November - MCWD results																																																									
December - Rio Bravo results																																																									
December - MCWD results																																																									
Semi Annual 2 - Rio Bravo results																																																									
Semi Annual 2 - MCWD results																																																									
Annual																																																									
10/20/2015		990		0.33	0.30	8.60	7.92	4.50	4.15	18.00	16.58	30.00	27.64	0.00	0.00	0.00	0.00	2.20	2.03	0.40	0.37	0.01	0.01	0.11	0.10	0.09	0.09	0.00	0.00	0.01	0.01	0.02	0.02	0.60	0.55	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.06	0.05	0.87	0.80			0.00	0.00		
5/20/2016		860		0.12	0.11	6.40	5.90	0.00	0.00	2.80	2.58	30.00	27.64	0.00	0.00	0.00	0.00	3.20	2.95	0.03	0.03	0.00	0.00	0.09	0.08	0.06	0.06	0.00	0.00	0.01	0.01	0.01	0.01	0.11	0.10	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.03	0.03	0.00	0.00			0.00	0.00		
110409	flow (gpd)																																																								

ADM Stratas Permit No. 1008
2011

January - Stratas results	14413	503	6.50					144.00	17.32	28.00	3.37																																							34.00	4.09					####	
January - MCWD results																																																									
February - Stratas results	16987	571	6.60					147.00	20.84	30.00	4.25																																							33.00	3.97					####	

February - MCWD results																				
March - Stratas results	16169	822	6.80	236.00	31.84	24.00	3.24											**52.00**	6.25	####
March - MCWD results																				
April - Stratas results	18356	681	6.80	203.00	31.09	25.00	3.83											44.00	5.29	0
April - MCWD results																				
May - Stratas results	14803	601	6.30	203.00	25.08	27.00	3.34											74.00	8.90	####
May - MCWD results																				
June - Stratas results	14022	655	6.80	214.00	25.04	60.00	7.02											75.00	9.02	####
June - MCWD results																				
July - Stratas results	11125	551	6.40	178.00	16.52	33.00	3.06											56.00	6.74	0
July - MCWD results																				
August - Stratas results	12269	774	6.40	263.00	26.93	44.00	4.50											61.00	7.34	####
August - MCWD results																				
September - Stratas results	13715	653	6.70	298.00	34.10	21.00	2.40											85.00	10.22	####
September - MCWD results																				
October - Stratas results	14707	475	6.50	215.00	26.39	47.00	5.77											35.00	4.21	####
October - MCWD results																				
November - Stratas results	12234	678	5.60	566.00	57.78	42.00	4.29											96.00	11.55	####
November - MCWD results																				
December - Stratas results	13962	565	6.50	282.00	32.85	15.00	1.75											96.00	11.55	####
December - MCWD results																				
Annual																				

ADM Stratas Permit No. 1008
2012

January - Stratas results	10157	607	6.00	238.00	20.17	44.00	3.73											**93.00**	11.19	####
January - MCWD results																				
February - Stratas results	8984	674	6.30	848.00	63.57	39.00	2.92											**77.00**	9.26	####
February - MCWD results		780																		
March - Stratas results	10457	1188	6.30	460.00	40.14	45.00	3.93											**124.00**	14.91	####
March - MCWD results																				
April - Stratas results	0	473	6.50	408.00		36.00												79.00	9.50	####
April - MCWD results		820	5.80																	
May - Stratas results	9545	809	6.20	#####	90.00	112.00	8.92											168.00	20.21	####
May - MCWD results		1300																		
June - Stratas results	9634	586	6.50	215.00	17.28	67.00	5.39											106.00	12.75	####
June - MCWD results																				
July - Stratas results	10823	566	6.60	300.00	27.09	67.00	6.05											84.00	10.10	####
July - MCWD results																				
August - Stratas results	13214	764	6.20	125.00	13.78	81.00	8.93											92.00	11.06	####
August - MCWD results																				
September - Stratas results	8836	566	6.20	318.00	23.45	92.00	6.78											166.00	19.96	####
September - MCWD results																				
October - Stratas results	6705	913	6.70	520.00	29.09	67.00	3.75											217.00	26.10	####
October - MCWD results		1500																		
November - Stratas results	5451	675	6.90	196.00	8.92	177.00	8.05											132.00	15.88	####
November - MCWD results		1000																		
December - Stratas results	9922	367	6.10	161.00	13.33	74.00	6.13											152.00	18.28	####
December - MCWD results		350																		
Annual																				

ADM Stratas Permit No. 1008
2013

January - Stratas results	12743	503	7.30	162.00	17.23	54.00	5.74											**78.00**	9.38	####
January - MCWD results		720																		
January - MCWD results 2		1000																		
February - Stratas results	11233	753	7.00	116.00	10.87	59.00	5.53											**40.00**	4.81	####
February - MCWD results		3600						0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.04	0.00			
March - Stratas results	7107	537	6.90	215.00	12.75	67.00	3.97											**71.00**	8.54	####
March - MCWD results		1100																		
April - Stratas results	9826	459	7.00	473.00	38.78	62.00	5.08											121.00	14.55	9140
April - MCWD results		430																		
May - Stratas results	10984	540	6.30	154.00	14.12	52.00	4.77											53.00	6.37	####
May - MCWD results		650																		
June - Stratas results	11576	658	6.40	401.00	38.73	74.00	7.15											96.00	11.55	####
June - MCWD results		870																		
July - Stratas results	9580	533	7.00	307.00	24.54	58.00	4.64											55.00	6.61	####
July - MCWD results		600																		
August - Stratas results	9426	566	7.60	464.00	36.50	66.00	5.19											80.00	9.62	####
August - MCWD results		720																		
August - MCWD results 2		470																		
September - Stratas results	7318	635	6.70	655.00	40.00	79.00	4.82											150.00	18.04	0
September - MCWD results		1500																		
September - MCWD results 2		1700																		
October - Stratas results	7232	555	8.10	436.00	26.31	110.00	6.64											119.00	14.31	####
October - MCWD results		740																		
November - Stratas results	6083	704	7.20	206.00	10.46	72.00	3.65											58.00	6.98	0
November - MCWD results																				
December - Stratas results	4776	531	7.30	328.00	13.07	68.00	2.71											77.00	9.26	####
December - MCWD results		570																		
Annual																				

ADM Stratas Permit No. 1008
2014

January - Stratas results	3712	792	6.80	844.00	26.14	122.00	3.78											**182.00**	21.89	####
January - MCWD results																				
January - MCWD results 2																				
February - Stratas results	5157	690	6.90	485.00	20.87	75.00	3.23											**99.00**	11.91	
February - MCWD results																				
March - Stratas results	3433	700	7.40	375.00	10.74	115.00	3.29											**142.00**	17.08	0
March - MCWD results																				
April - Stratas results	4008	724	6.70	317.00	10.60	43.00	1.44											63.00	7.58	####
April - MCWD results																				
May - Stratas results	4924	786	6.60	494.00	20.30	117.00	4.81											181.00	21.77	####
May - MCWD results																				
June - Stratas results	6072	637	7.60	250.00	12.67	58.00	2.94											65.00	7.82	####
June - MCWD results																				
July - Stratas results	4965	652	7.40	448.00	18.56	70.00	2.90											96.00	11.55	####
July - MCWD results																				
August - Stratas results	5221	714	7.70	365.00	15.90	34.00	1.48											56.00	6.74	####
August - MCWD results																				
August - MCWD results 2																				
September - Stratas results	4966	826	7.40	313.00	12.97	113.00	4.68											53.00	6.37	####
September - MCWD results																				
September - MCWD results 2																				
October - Stratas results	3921	708	7.60	312.00	10.21	109.00	3.57											78.00	9.38	####
October - MCWD results																				
November - Stratas results	4364	687	7.70	405.00	14.75	78.00	2.84											74.00	8.90	####
November - MCWD results																				
December - Stratas results	5382	622	7.30	414.00	18.59	113.00	5.07											118.00	14.19	0
December - MCWD results																				
Annual																				

ADM Stratas Permit No. 1008
2015

January - Stratas results	4570	611	7.60	300.00	11.44	133.00	5.07											**58.00**	6.98	####
January - MCWD results																				
January - MCWD results 2																				
February - Stratas results	5354	645	7.40	233.00	10.41	52.00	2.32											**37.00**	4.45	####
February - MCWD results																				
March - Stratas results	3675	765	7.50	310.00	9.51	161.00	4.94											**80.00**	9.62	####
March - MCWD results																				
April - Stratas results																				
April - MCWD results																				
May - Stratas results																				

May - MCWD results																																																									
June - Stratas results																																																									
June - MCWD results																																																									
July - Stratas results																																																									
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August - Stratas results																																																									
August - MCWD results																																																									
August - MCWD results 2																																																									
September - Stratas results																																																									
September - MCWD results																																																									
September - MCWD results 2																																																									
October - Stratas results	3621	854	7.60					204.00	6.16	96.00	2.90																																									88.00	10.58						
October - MCWD results																																																									
November - Stratas results																																																									
November - MCWD results																																																									
December - Stratas results																																																									
December - MCWD results																																																									
Annual																																																									
10/19/2015		1100		0.24	0.02	0.23	0.02	110.00	8.08	42.00	3.08	73.00	5.36	0.01	0.00	0.15	0.01	19.00	1.40	0.06	0.00	0.00	0.00	0.04	0.00	0.81	0.06	0.00	0.00	0.00	0.00	0.02	0.00	1.70	0.12	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.01	11.00	0.81			0.00	0.00		

8802 average flow (gpd)

Calpine - Permit No. 1001
2011

January - Calpine results																																																									
January - MCWD results																																																									
February - Calpine results																																																									
February - MCWD results																																																									
March - Calpine results																																																									
March - MCWD results																																																									
Quarter 1																																																									
April - Calpine results																																																									
April - MCWD results																																																									
May - Calpine results																																																									
May - MCWD results																																																									
June - Calpine results																																																									
June - MCWD results																																																									
Quarter 2																																																									
Semi Annual 1 - Calpine results																																																									
Semi Annual 1 - MCWD results																																																									
July - Calpine results																																																									
July - MCWD results																																																									
August - Calpine results																																																									
August - MCWD results																																																									
September - Calpine results																																																									
September - MCWD results																																																									
Quarter 3																																																									
October - Calpine results																																																									
October - MCWD results																																																									
November - Calpine results																																																									
November - MCWD results																																																									
December - Calpine results																																																									
December - MCWD results																																																									
Quarter 4																																																									
Semi Annual 2 - Calpine results																																																									
Semi Annual 2 - MCWD results																																																									
Annual																																																									

RockTenn - Permit No. 1001
2013

January - RockTenn results																																																									
Week 1	16557	440	8.30					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 2	6028	510	8.40					1.60	0.08	0.00	0.00																							0.00	0.00																						
Week 3	6550	450	8.30					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 4	6816	520	8.40					0.00	0.00	0.00	0.00																							0.00	0.00																						
January - MCWD results																																																									
1/4/2013	16557	510						1.80	0.25	0.00	0.00																																														
1/30/2013	6816	580						1.30	0.07	2.60	0.15																																														
February - RockTenn results																																																									
Week 1	7028	470	8.40					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 2	7257	510	8.40					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 3	7700	550	8.30					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 4	6385	580	8.40					1.30	0.07	0.00	0.00																							0.00	0.00																						
February - MCWD results																																																									
2/13/2013	7257																													0.00	0.00	0.01	0.00															0.03	0.00								
March - RockTenn results																																																									
Week 1	7000	480	8.50					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 2	7100	470	8.40					2.30	0.14	0.00	0.00																							0.00	0.00																						
Week 3	6386	480	8.40					2.00	0.11	5.00	0.27																							0.00	0.00																						
Week 4	6388	500	8.40					0.00	0.00	0.00	0.00																							0.00	0.00																						
Quarter 1																																																							####	
April - RockTenn results																																																									
Week 1	4913	540	8.40					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 2	4871	500	8.50					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 3	6057	590	8.50					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 4	6243	610	8.50					0.00	0.00	0.00	0.00																							0.00	0.00																						
April - MCWD results																																																									
4/8/2013	4871	360						0.00	0.00	0.00	0.00																																														
May - RockTenn results																																																									
Week 1	11743	600	8.40					0.00	0.00	0.00	0.00																							0.59	0.06																						
Week 2	14743	560	8.40					0.00	0.00	0.00	0.00																							0.03	0.00																						
Week 3	15200	480	8.40					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 4	13966	620	8.40					0.00	0.00	0.00	0.00																							0.03	0.00																						
June - RockTenn results																																																									
Week 1	14500	530	8.40					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 2	26466	580	8.50					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 3	12971	560	8.50					0.00	0.00	5.00	0.54																							0.00	0.00																						
Week 4	12971	480	8.50					0.00	0.00	0.00	0.00																							0.00	0.00																						
Quarter 2																																																							####	
Semi Annual 1 - RockTenn results	26466																			0.00	0.00	0.00	0.00	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00															0.00	0.00								
July - RockTenn results																																																									
Week 1	22571	550	8.50					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 2	21771	580	8.50					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 3	20071	670	8.50					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 4	22087	620	8.40					0.00	0.00	0.00	0.00																							0.00	0.00																						
July - MCWD results																																																									
7/2/2013	22571	630						0.00	0.00	0.00	0.00																																														
August - RockTenn results																																																									
Week 1	21533	560	8.50					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 2	17400	600	8.40					4.00	0.58	0.00	0.00																							0.00	0.00																						
Week 3	16542	620	8.40					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 4	11625	590	8.50					0.00	0.00	0.00	0.00																							0.00	0.00																						
August - MCWD results																																																									
8/6/2013	21533	540						0.00	0.00	0.00	0.00																																														
September - RockTenn results																																																									
Week 1	14966	570	8.50					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 2	15842	570	8.50					4.00	0.53	0.00	0.00																							0.00	0.00																						
Week 3	13057	600	8.40					0.00	0.00	0.00	0.00																							0.00	0.00																						
Week 4	11900	590	8.50					0.00	0.00	0.00	0.00																							0.00	0.00																						
Quarter 3																																																							6915	
September - MCWD results																																																									
9/7/2013	15842	610						0.00	0.00	0.00	0.00																																														

October - RockTenn results																											
Week 1	13628	590	8.50	0.00	0.00	0.00	0.00															0.00	0.00				
Week 2	12237	560	8.40	0.00	0.00	0.00	0.00															0.00	0.00				
Week 3	5433	560	8.40	0.00	0.00	5.00	0.23															0.00	0.00				
Week 4	5975	540	8.40	0.00	0.00	0.00	0.00															0.00	0.00				
October - MCWD results																											
10/10/2013	12237	620		8.50	0.87	0.00	0.00																				
November - RockTenn results																											
Week 1	4942	510	8.30	2.00	0.08	5.50	0.23															0.05	0.00				
Week 2	5378	630	8.30	0.00	0.00	9.00	0.40															0.00	0.00				
Week 3	5378	450	8.30	1.00	0.04	0.00	0.00															0.05	0.00				
Week 4	4143	450	8.30	0.00	0.00	0.00	0.00															0.00	0.00				
December - RockTenn results																											
Week 1	3714	490	8.30	0.00	0.00	5.50	0.17															0.00	0.00				
Week 2	3900	580	8.30	0.00	0.00	5.00	0.16															0.00	0.00				
Week 3	1400	520	8.40	0.00	0.00	0.00	0.00															0.00	0.00				
Week 4	3912	490	8.40	0.00	0.00	7.00	0.23															0.25	0.01				
Quarter 4																										0	
Semi Annual 2 - RockTenn results	3912							0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00			0.00	0.00		
Annual																											####

RockTenn - Permit No. 1001
2014

January - RockTenn results																								
Week 1	4592	38	7.0	0.00	0.00	0.00	0.00																	
Week 2	4592	570	8.4	0.00	0.00	0.00	0.00																	
Week 3	5075	530	8.4	0.00	0.00	0.00	0.00																	
Week 4	3814	540	8.4	0.00	0.00	0.00	0.00																	
February - RockTenn results																								
Week 1	3943	550	8.4	0.00	0.00	0.00	0.00																	
Week 2	4243	540	8.4	0.00	0.00	0.00	0.00																	
Week 3	4200	500	8.3	0.00	0.00	0.00	0.00																	
Week 4	5129	560	8.4	0.00	0.00	0.00	0.00																	
March - RockTenn results																								
Week 1	4814	530	8.4	0.00	0.00	0.00	0.00																	
Week 2	5029	480	8.4	0.00	0.00	0.00	0.00																	
Week 3	5714	580	8.4	0.00	0.00	0.00	0.00																	
Week 4	4086	300	8.3	0.00	0.00	0.00	0.00																	
Quarter 1																								
April - RockTenn results																								
Week 1	6057	480	8.4	0.00	0.00	0.00	0.00																	
Week 2	3143	450	8.4	0.00	0.00	0.00	0.00																	
Week 3	3057	480	8.4	0.00	0.00	0.00	0.00																	
Week 4	3429	480	8.4	0.00	0.00	0.00	0.00																	
May - RockTenn results																								
Week 1	22715	470	8.4	0.00	0.00	0.00	0.00																	
Week 2	3472	460	8.4	0.00	0.00	0.00	0.00																	
Week 3	3822	590	8.8	0.00	0.00	0.00	0.00																	
Week 4	5917	430	8.5	5.00	0.25	5.00	0.25																	
June - RockTenn results																								
Week 1	6950	630	8.8	0.00	0.00	6.00	0.35																	
Week 2	7471	660	8.7	0.00	0.00	0.00	0.00																	
Week 3	6500	640	8.7	0.00	0.00	0.00	0.00																	
Week 4	6367	610	8.7	1.00	0.05	5.00	0.27																	
Quarter 2																								
Semi Annual 1 - RockTenn results								0.00	0.00	0.01	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	
July - RockTenn results																								
Week 1	7900	710	8.7	1.00	0.07	0.00	0.00																	
Week 2	7329	670	8.8	0.00	0.00	0.00	0.00																	
Week 3	8515	660	8.8	0.00	0.00	0.00	0.00																	
Week 4	8443	660	8.8	0.00	0.00	0.00	0.00																	
August - RockTenn results																								
Week 1	8029	660	8.8	1.00	0.07	0.00	0.00																	
Week 2	7222	660	8.8	0.00	0.00	0.00	0.00																	
Week 3	7222	660	8.8	0.00	0.00	0.00	0.00																	
Week 4	6375	690	8.8	0.00	0.00	0.00	0.00																	
September - RockTenn results																								
Week 1	6125	680	8.7	0.00	0.00	0.00	0.00																	
Week 2	6067	690	8.8	0.00	0.00	0.00	0.00																	
Week 3	5715	670	8.7	6.00	0.29	0.00	0.00																	
Week 4	5372	680	8.7	0.00	0.00	0.00	0.00																	
Quarter 3																								
October - RockTenn results																								
Week 1	5700	680	8.8	0.00	0.00	0.00	0.00																	
Week 2	5943	610	8.7	0.00	0.00	0.00	0.00																	
Week 3	5300	640	8.8	0.00	0.00	0.00	0.00																	
Week 4	5250	640	8.8	0.00	0.00	0.00	0.00																	
November - RockTenn results																								
Week 1	5250	630	8.6	0.00	0.00	0.00	0.00																	
Week 2	4758	630	8.6	0.00	0.00	0.00	0.00																	
Week 3	4200	630	8.6	2.00	0.07	5.00	0.18																	
Week 4	3722	640	8.6	0.00	0.00	0.00	0.00																	
December - RockTenn results																								
Week 1	3722	670	8.6	0.00	0.00	0.00	0.00																	
Week 2	4029	540	8.4	0.00	0.00	0.00	0.00																	
Week 3	3643	590	8.4	0.00	0.00	0.00	0.00																	
Week 4	3543	560	8.4	0.00	0.00	0.00	0.00																	
Quarter 4																								
Semi Annual 2 - RockTenn results								0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	
Annual																								

RockTenn - Permit No. 1001
2015

January - RockTenn results							
Week 1	3543	490	8.20	2.00	0.06	0.00	0.00
Week 2	3843	590	7.90	0.00	0.00	0.00	0.00
Week 3	3713	630	8.30	0.00	0.00	5.50	0.17
Week 4	3683	540	8.20	0.00	0.00	0.00	0.00
February - RockTenn results							
Week 1	6815	590	8.30	0.00	0.00	0.00	0.00
Week 2	3843	540	8.20	0.00	0.00	0.00	0.00
Week 3	3890	550	8.30	0.00	0.00	5.50	0.18
Week 4	3890	570	8.40	0.00	0.00	0.00	0.00
March - RockTenn results							
Week 1	3850	690	8.60	0.00	0.00	0.00	0.00
Week 2	4314	710	8.60	0.00	0.00	0.00	0.00
Week 3	4614	680	8.60	0.00	0.00	0.00	0.00
Week 4	3175	740	8.70	0.00	0.00	0.00	0.00
Quarter 1							
April - RockTenn results							
Week 1	3643	670	8.60	0.00	0.00	0.00	0.00
Week 2	3743	640	8.50	0.00	0.00	0.00	0.00
Week 3	2900	410	8.50	0.00	0.00	0.00	0.00
Week 4	2986	480	8.70	0.00	0.00	0.00	0.00
May - RockTenn results							
Week 1	4038	530	8.40	0.00	0.00	0.00	0.00
Week 2	4984	670	8.60	0.00	0.00	0.00	0.00
Week 3	5486	680	8.70	0.00	0.00	0.00	0.00
Week 4	4350	670	8.70	0.00	0.00	0.00	0.00
June - RockTenn results							
Week 1	4929	530	8.50	0.00	0.00	0.00	0.00

Week 2	6143	700	8.70					0.00	0.00	0.00	0.00																																																
Week 3	7057	700	8.80					0.00	0.00	0.00	0.00																																																
Week 4	7889	670	8.60					0.00	0.00	0.00	0.00																																																
Quarter 2																																																											
Semi Annual 1 - RockTenn results																				0.00	0.00	0.01	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.04	0.00															0.01	0.00										
July - WestRock results																																																											
Week 1	6929	710	8.80					0.00	0.00	0.00	0.00																																																
Week 2	7786	700	8.70					0.00	0.00	0.00	0.00																																																
Week 3	8275	650	8.70					0.00	0.00	0.00	0.00																																																
Week 4	8634	730	8.80					0.00	0.00	0.00	0.00																																																
August - WestRock results																																																											
Week 1	8600	660	8.80					0.00	0.00	0.00	0.00																																																
Week 2	9057	640	8.70					0.00	0.00	0.00	0.00																																																
Week 3	8414	660	8.70					0.00	0.00	0.00	0.00																																																
Week 4	8729	730	8.80					0.00	0.00	0.00	0.00																																																
September - WestRock results																																																											
Week 1	7675	640	8.70																																																								
Week 2	7300	670	8.80					0.00	0.00	0.00	0.00																																																
Week 3	8233	700	8.80					0.00	0.00	0.00	0.00																																																
Week 4	8672	620	8.70					0.00	0.00	8.50	0.62																																																
Quarter 3								0.00	0.00	0.00	0.00																																																
October - WestRock results																																																											
Week 1	8758	660	8.60					0.00	0.00	0.00	0.00																																																
Week 2	8700	580	8.60					0.00	0.00	0.00	0.00																																																
Week 3	9514	630	8.60					0.00	0.00	0.00	0.00																																																
Week 4	9272	610	8.50					2.00	0.15	0.00	0.00																																																
November - WestRock results																																																											
Week 1	9286	640	8.60					0.00	0.00	0.00	0.00																																																
Week 2	9672	600	8.60					0.00	0.00	0.00	0.00																																																
Week 3	6800	610	8.30					0.00	0.00	0.00	0.00																																																
Week 4	3543	680	8.30					0.00	0.00	0.00	0.00																																																
December - WestRock results																																																											
Week 1	3686	570	8.20					0.00	0.00	0.00	0.00																																																
Week 2	3500	630	8.20					0.00	0.00	0.00	0.00																																																
Week 3	3491	570	8.20					0.00	0.00	0.00	0.00																																																
Week 4	3491																																																										
Quarter 4																																																											
Semi Annual 2 - WestRock results																				0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00															0.00	0.00										
Annual																																																											
10/26/2015		640		0.00	0.00	5.60	0.37	3.70	0.24	7.20	0.47	24.00	1.58	0.00	0.00			0.10	0.01	0.00	0.00	0.01	0.00	0.05	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00			0.00	0.00				
6/2/2016		730		0.33	0.02	7.60	0.50	0.00	0.00	1.20	0.08	30.00	1.97	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.01	0.00	0.07	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00			0.00	0.00				
7871	average flow (gpd)																																																										
	Total (mgd)	umhos/cm	SU	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day						
Max		15000	9	0		9		1130		177		73		0		0		19		0		0		0		1		0		0		0		3	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	217	26	0	0						
Average (sum/number)	36336.43	802.22	8.00	0.17	0.09	6.16	3.59	76.48	5.56	16.98	1.69	33.33	15.10	0.00	0.00	0.03	0.01	2.99	1.03	0.05	0.04	0.01	0.00	0.07	0.03	0.09	0.02	0.00	0.00	0.01	0.00	0.02	0.01	0.15	0.06	0.02	0.01	0.00002	0.00	0.13	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.04	0.01	82.68	9.62	0.00	0.00						
Number	367	345	225	9	7	9	7	238	235	238	235	9	7	9	7	8	7	9	7	16	14	16	14	16	14	16	14	16	14	20	18	41	39	73	73	17	19	8	10	7	9	11	13	8	10	8	10	18	20	57	59	2	2						
	Flow	Ec	pH	nonia (a	lb/day	rate (as	lb/day	BOD	lb/day	TSS	lb/day	Chloride	lb/day	Cyanide	lb/day	MBAS	lb/day	hosphor	lb/day	Al		As		Ba		B		Cd		Cr	lb/day	Cu	lb/day	Fe	lb/day	Pb	lb/day	Hg		Mo		Ni		Se		Ag		Zn		O&G		Chloromethane		Method 6	ethod 6	Log of	Proof of		
Fresno Truck Wash (26 units)																																																				Chloroform							
10/27/2015	6000	2200		0.93	0.05	2.60	0.13	160.00	8.01	100.00	5.01	12.00	0.60	0.00	0.00	1.90	0.10			0.88	0.04	0.00	0.00	0.05	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.44	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	36.00	1.80	0.01	0.00						
6/7/2016	6000	780		8.30	0.42	2.50	0.13	1800.00	90.12	1700.00	85.11	19.00	0.95	0.00	0.00	36.00	1.80	3.90	0.20	5.10	0.26	0.01	0.00	0.17	0.01	0.05	0.00	0.01	0.00	0.02	0.00	0.09	0.00	6.00	0.30	0.01	0.00	0.00	0.00	0.02	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.64	0.03	2300.00	115.15	0.00	0.00						
Speedy																																																											
10/29/2015	2300	1200		0.93	0.02	0.00	0.00	82.00	1.57	160.00	3.07	16.00	0.31	0.00	0.00	1.00	0.02	23.00	0.44	5.70	0.11	0.01	0.00	0.20	0.00	0.08	0.00	0.01	0.00	0.02	0.00	0.07	0.00	5.60	0.11	0.01	0.00	0.00	0.00	0.02	0.00	0.04	0.00	0.01	0.00	0.00	0.00	1.00	0.02	17.00	0.33								
Imperial Truck Wash																																																											
10/30/2015	1614	1900		2.30	0.03	3.30	0.04	490.00	6.60	290.00	3.91	62.00	0.84	0.00	0.00	0.00	0.00	81.00	1.09	31.00	0.42	0.02	0.00	0.62	0.01	0.13	0.00	0.04	0.00	0.12	0.00	0.20	0.00	23.00	0.31	0.04	0.00	0.00	0.00	0.03	0.00	0.12	0.00	0.01	0.00	0.00	0.00	3.00	0.04	8.80	0.12								
Georgia Pacific (14 units)																																																						Phenol		Styrene		Napthalene	
11/5/2015	120	2800		300.00	0.30	1.10	0.00	180.00	0.18	14.00	0.01	490.00	0.49	5.30	0.01	0.33	0.00	0.00	0.00	0.15	0.00	0.01	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.76	0.00	18.00	0.02			0.04	0.00	0.0055	0.00	0.0038	0.00
11/16/2015	120	2400		160.00	0.16		0.00	220.00	0.22	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	0.22	0.00	32.00	0.03				0.00		0.00		0.00
5/18/2016	120	2600		210.00	0.21	0.00	0.00	250.00	0.25	2.00	0.00	330.00	0.33	0.02	0.00	1.40	0.00	0.44	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00	1.00	0.00	13.00	0.01			0.05	0.00	0.016	0.00		0.00
5th Wheel Truck Wash																																																											
11/5/2015	3578	1300		0.00	0.00	0.03	0.00	180.00	5.37	70.00	2.09	15.00	0.45	0.00	0.00	1.10	0.03	28.00	0.84	7.60	0.23	0.01	0.00	0.15	0.00	0.07	0.00	0.02	0.00	0.02	0.00	0.10	0.00	5.10	0.15	0.01	0.00	0.00	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	0.00	2.40	0.07	25.00	0.75								
5/25/2016	3578	1100		0.83	0.02	1.60	0.05	150.00	4.48	220.00	6.57	18.00	0.54	0.00	0.00	17.00	0.51	22.00	0.66	24.00	0.72	0.01	0.00	0.35	0.01	0.11	0.00	0.03	0.00	0.08	0.00	0.23	0.01	13.00	0.39	0.02	0.00	0.00	0.00	0.02	0.00	0.13	0.00	0.00	0.00	0.00	0.00	2.20	0.07	47.00	1.40								
Kinder Morgan																																																											
11/2/2015	6320	1900		91.00	4.80	1.60	0.08	61.00	3.22	15.00	0.79	85.00	4.48	14.00	0.74	0.08	0.00			0.03	0.00	0.01	0.00	0.12	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.08	0.00	1.10	0.06								
12/17/2015	10500	700	5.90					940.00	49.57																																																
	Total (mgd)	umhos/cm	SU	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day
Average (sum/number)	0.04	1716.36		77.43	0.60	1.41	0.04	410.27	12.00	257.10	10.66	116.33	0.90	2.15	0.07	6.53	0.25	22.62	0.40	8.28	0.18	0.01	0.00	0.19	0.00	0.09	0.00	0.01	0.00	0.03	0.00	0.08	0.00	5.96	0.13	0.01	0.00	0.00	0.00	0.02	0.00	0.05	0.00	0.01	0.00	0.00	0.00	1.14	0.02	249.79	11.97	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.00
Number	11	11		10	10	9	10	11	10	10	10	9	10	9	10	9	10	7	8	9	10	9	10	9	10	9	10	9	10	9	10	9	10	9	10	9	10	9	10	9	10	9	10	9	10	9	10	10	10	10	10	2	2	3	3	3	3	2	3
% of SIU mass																																																											

Pollutant	Industrial	Residentia	Headworks	Controlling H\	Overall Remo	Controlling Di	Effluent	Sludge
	(lb/day)	(lb/day)	(lb/day)	(lb/day)	%	(lb/day)	(lb/day)	(kg/year)
BOD	5.5588119		680.6443	4456	98.13%	83.44	13	
TSS	1.6876556		1151.3098	2766	96.98%	83.44	145	
Ammonia	0.0893783		73.0925	139	97.07%	4.09	2	102.50
FOG	9.6244255		34.9396	#VALUE!	54.97%	#VALUE!	35	
Aluminum	0.0399167		3.3874	2	65.74%	0.73	1.10	
Antimony				#DIV/0!	#DIV/0!	35.88	0.00	1.90
Arsenic	0.0024429		0.0418	2	53.13%	0.83	0.00	1.17
Barium	0.0282728		0.4084	#VALUE!	42.67%	#VALUE!	0.23	76.67
Beryllium				#DIV/0!	#DIV/0!	0.83	0.00	0.02
Boron	0.0249952		0.6535	6	0.00%	5.84	0.65	2.50
Cadmium	0.0000468		0.0052	0.03	34.19%	0.02	0.00	0.69
Calcium				#VALUE!	34.19%	#VALUE!	484.43	
Chromium	0.0024686		0.0455	2.10	60.19%	0.83	0.02	13.30
Cobalt				#DIV/0!	#DIV/0!	0.42	#DIV/0!	0.39
Copper	0.0069469		0.4126	0.39	86.00%	0.05	0.10	46.00
Iron	0.0622757		3.9140	51	83.59%	8.34	0.64	1650.00
Lead	0.0059308		0.0169	0.036	61.00%	0.01	0.01	4.78
Magnesium				#VALUE!	0.00%	#VALUE!	128.11	
Manganese				#DIV/0!	#DIV/0!	1.67	#DIV/0!	
Mercury	0.0000108		0.0000	0	60.00%	0.0064	0.00	0.01
Molybdenum	0.0298689		0.1700	0	8.23%	0.08	0.17	1.90
Nickel	0.0006096		0.0203	1	26.01%	0.38	0.02	3.34
Potassium					#DIV/0!	#VALUE!	#DIV/0!	230.00
Selenium	0.0048577		0.0631	0	42.33%	0.04	0.04	0.30
Silver	0.0000000		0.0035	73.43	99.99%	0.01	0.00	0.13
Sodium				#DIV/0!	#DIV/0!	575.77	#DIV/0!	#DIV/0!
Thallium				#DIV/0!	#DIV/0!	0.05	0.00	0.25
Vanadium				#DIV/0!	#DIV/0!	0.83	#DIV/0!	20.00
Zinc	0.0101417		1.9884	2	45.95%	0.83	0.45	129.60
Chloride	15.1034702		256.2168	1006	12.12%	884.52	225.17	69.50
Cyanide	0.0005373		0.0203	0.11	69.00%	0.04	0.02	0.26
MBAS	0.0063790		15.9153	#VALUE!	97.08%	?????	0.39	
Pentachlorophenol								
1,4-Dichlorobenzene								
Chloroform								
Ethylbenzene								
m,p - xylene								
o- xylene								
Tetrachloroethene								
Toluene								
Xylene								
Chloromethane								
2-methylphenol								
3,4-methylphenol								
4-methylphenol								
Phenol								
Acetophenone								
Dimethyl phthalate								
Butyl benzyl phthalate								
Diethyl phthalate								
Di-n-butyl phthalate								
Edosulfan II								
Endrin								
Heptachlor								
Methylene chloride								
Bromomethane								
Bromodichloromethane								
Benzoic Acid								
Benzyl alcohol								
Bromoform								
Nitrate	3.5874446		2.3814	#REF!	0.00%	#REF!	84.64	31.60
Sulfate								
4,4' DDE								
alpha-chlordane								
PCBs								

A	Effluent conc more than half of effluent standard
B	Sludge conc more than half of sludge disposal st
C	Influent conc more than 25% of inhibition value
D	WDR Discharge Limit
	Existing Local Limit

Pollutant	POC?	POC Reason	Inf Loading > 60% MAHL
			Local Limit Needed?
BOD	YES	D	
TSS	YES	D	Yes
Ammonia	YES	D, A?	Yes
FOG	NO	No WQS	
EC	YES	D, A	Yes
Aluminum	YES	A	
Antimony	NO	No samples	
Arsenic	YES		Yes
Barium	YES	No WQS	
Beryllium	NO	No samples	
Boron	YES	A	
Cadmium	YES		
Calcium	NO	No WQS	
Chromium	YES	B	
Cobalt	NO	No samples	
Copper	YES	D, A, B	Yes
Iron	YES		
Lead	YES	A	
Magnesium	NO	No WQS	
Manganese	NO		
Mercury	YES		Yes
Molybdenum	YES	A	
Nickel	YES		
Potassium	NO	No WQS	
Selenium	YES		Yes
Silver	YES		
Sodium	NO		
Thallium	NO	No samples	
Vanadium	NO	No samples	
Zinc	YES	A, B, C	Yes
Chloride	NO		
Cyanide	YES	C	
Bis (2-ethylhexyl) phthala	NO		
Pentachlorophenol	NO		
1,4-Dichlorobenzene	NO		
Chloroform	NO		
Ethylbenzene	NO		
m,p - xylene	NO	No WQS	
o- xylene	NO	No WQS	
Tetrachloroethene	NO		
Toluene	NO		
Xylene	NO	No WQS	
Chloromethane	NO		
2-methylphenol	NO	No WQS	
3,4-methylphenol	NO	No WQS	
4-methylphenol	NO	No WQS	
Phenol	NO		
Acetophenone	NO	No WQS	
Dimethyl phthalate	NO		
Butyl benzyl phthalate	NO		
Diethyl phthalate	NO		
Di-n-butyl phthalate	NO		
Edosulfan II	NO		
Endrin	NO		
Heptachlor	NO		
Methylene chloride	NO		
Bromomethane	NO		
Bromodichloromethane	NO		
Benzoic Acid	NO	No WQS	
Benzyl alcohol	NO	No WQS	
Bromoform	NO		
Nitrate	NO	No WQS	
Sulfate	NO	No WQS	
4,4' DDE	NO		
alpha-chlordane	NO	No WQS	
PCBs	NO		

Primary Compound Name	CAS #	Controlling Effluent Limit (ppb)	Source	Inhibition Criteria (ppb)	Treatment Process
Aluminum	7429-90-5	87	Fresh Water Aquatic 4-day average (USEPA)		
Ammonia	766441-7	490	Fresh Water Aquatic 4-day average (USEPA)	480,000	Activated Sludge
Arsenic	7440-38-2	100	Agricultural WQ Limit	100	Activated Sludge
Boron	7440-42-8	700	Agricultural WQ Limit		
Cadmium	7440-43-9	2.20	Fresh Water Aquatic 4-day average (CTR)	1,000	Activated Sludge
Chloride	16887-00-6	106,000	Agricultural WQ Limit		
Chromium VI	18540-29-9	100	Agricultural WQ Limit	1,000	Activated Sludge
Copper	7440-50-8	6.5	Fresh Water Aquatic 4-day average (CTR)	1,000	Activated Sludge
Cyanide (total)	57-12-5	4.2	Fresh Water Aquatic 4-day average (CTR)	100	Activated Sludge
Iron	7439-89-6	1,000	Fresh Water Aquatic 4-day average (USEPA)		
Lead	7439-92-1	1.7	Fresh Water Aquatic 4-day average (CTR)	1,000	Activated Sludge
Manganese	7439-96-5	200	Agricultural WQ Limit		
Mercury	7439-97-6	0.8	Fresh Water Aquatic 4-day average (USEPA)	100	Activated Sludge
Molybdenum	7439-98-7	10	Agricultural WQ Limit		
Nickel	7440-02-0	45.0	Fresh Water Aquatic 4-day average (CTR)	1,000	Activated Sludge
Oil and Grease			#N/A		
Pentachlorophenol	87-86-5	4.0	Fresh Water Aquatic 4-day average (CTR)	200	Anaerobic Digestion
Selenium	7782-49-2	5.0	Fresh Water Aquatic 4-day average (CTR)		
Silver	7440-22-4	0.9	Fresh Water Aquatic Instantaneous Max (CTR)	13,000	Anaerobic Digestion
Sodium	7440-23-5	69,000	Agricultural WQ Limit		
Sulfate	14808-79-8		#N/A	500,000	Anaerobic Digestion
Zinc	7440-66-6	100	Fresh Water Aquatic 4-day average (CTR)	300	Activated Sludge
Biochemical Oxygen Demand (BOD)		10,000	Waste Discharge Requirements		
Total Suspended Solids (TSS)		10,000	Waste Discharge Requirements		
Antimony	7440-36-0	4,300	Human Health - Aquatic Organism Consumption		
Barium	7440-39-3		#N/A		
Beryllium	7440-41-7	100	Agricultural WQ Limit		
Calcium			#N/A		
Cobalt	7440-48-4	50	Agricultural WQ Limit		
Magnesium			#N/A		
Phosphate			#N/A		
Potassium			#N/A		
Thallium	7440-28-0	6.3	Human Health - Aquatic Organism Consumption		
Vanadium	7440-62-2	100.0	Agricultural WQ Limit		
Bis (2-ethylhexyl) phthalate	117-81-7	5.9	Human Health - Aquatic Organism Consumption		
1,4-Dichlorobenzene	106-46-7	2,600	Human Health - Aquatic Organism Consumption	1,400	Anaerobic Digestion
Chloroform	67-66-3	60	Exposure Limits	1,000	Anaerobic Digestion
Ethylbenzene	100-41-4	1,659	Exposure Limits	200,000	Activated Sludge
m,p-xylene	1300-20-7		#N/A		
o- xylene	1300-20-7		#N/A		
Tetrachloroethene	127-18-4	8.9	Human Health - Aquatic Organism Consumption	20,000	Anaerobic Digestion
Toluene	108-88-3	2,075	Exposure Limits	200,000	Activated Sludge
Xylene	1330-20-7		#N/A		
Chloromethane	74-87-3	557	Exposure Limits	3,300	Anaerobic Digestion
2-methylphenol	95-48-7		#N/A		
3-methylphenol	108-39-4		#N/A		
4-methylphenol	106-44-5		#N/A		
Phenol	108-95-2	4,600,000	Human Health - Aquatic Organism Consumption	50,000	Activated Sludge
Acetophenone	98-86-2		#N/A		
Dimethyl phthalate	131-11-3	2,900,000	Human Health - Aquatic Organism Consumption		
Butyl benzyl phthalate	85-68-7	5,200	Human Health - Aquatic Organism Consumption		
Diethyl phthalate	84-66-2	120,000	Human Health - Aquatic Organism Consumption		
Di-n-butyl phthalate	84-74-2	12,000	Human Health - Aquatic Organism Consumption		
Endosulfan II	115-29-7	0.056	Fresh Water Aquatic 4-day average (CTR)		
Endrin	72-20-8	0.036	Fresh Water Aquatic 4-day average (CTR)		
Heptachlor	76-44-8	0.00021	Human Health - Aquatic Organism Consumption		
Methylene chloride	75-09-2	1,100	Human Health - Aquatic Organism Consumption		
Bromomethane	74-83-9	305	Exposure Limits		
Bromodichloromethane	75-27-4	46	Human Health - Aquatic Organism Consumption		
Benzoic Acid	65-85-0		#N/A		
Benzyl alcohol			#N/A		
Bromoform	75-25-2	227	Exposure Limits		
Nitrate	14797-55-8	10,000	Waste Discharge Requirements		
4,4' DDE	72-55-9	0.00059	Human Health - Aquatic Organism Consumption		
alpha-chlordane			#N/A		
PCBs		0.00017	Human Health - Aquatic Organism Consumption		

Table 1 - Unit Operations (X if present)

Activated Sludge Present?	Trickling Filter Present?	Nitrification Present?	Anaerobic Digestion Present?	Sludge Incineration Present?
X		X		

TABLE 2 - Flow and Receiving Stream Data

wwtf Flow (MGD) (Qwwtf)	IU Flow (MGD) (Qind)	Sludge Flow to Digester (MGD) (Qdig)	Sludge Flow to Disposal (MTD) (Qsldg)	Stream Flow for Chronic WQS (MGD) (Qstr1)	Stream Flow for Acute WQS (MGD) (Qstr2)	Stream Flow for Threshold Human Health WQS (MGD) (Qstr3)	Stream Flow for Carcinogen Human Health WQS (MGD) (Qstr4)	Receiving Stream Hardness (mg/l) (H)	Hauled Waste Flow (MGD) (Qhw)	Incinerator Dispersion Factor (ug/m^3/g/sec) (DF)	Sludge Flow to Incineration (MTD) (Qinc)
0.57	0.25	0.04	0.27	0.00	0.00	0.00	0.00	85			

(Qwwtf)	wwtf's average flow in Million Gallons per Day (user entered).
(Qind)	Average Industrial User total discharge flow in MGD (user entered).
(Qdig)	Average sludge flow to digester in MGD (user entered).
(Qsldg)	Average sludge flow to disposal in dry metric tons per day (user entered).
(Qstr1)	Receiving stream (upstream) flow used with chronic water quality standards in MGD (user entered).
(Qstr2)	Receiving stream (upstream) flow used with acute water quality standards in MGD (user entered).
(Qstr3)	Receiving stream (upstream) flow used with threshold human health water quality standards in MGD (user entered).
(Qstr4)	Receiving stream (upstream) flow used with carcinogen human health water quality standards in MGD (user entered).
(H)	Receiving stream hardness in mg/l (user entered).
(Qhw)	Hauled waste flow in MGD (user entered).
(DF)	Incinerator dispersion factor in ug/m^3/g/sec (user entered).
(Qinc)	Average sludge flow to incineration in dry metric tons per day (user entered).

TABLE 3 - Local Limits Determination Based on WDR Effluent Limits

	LOCAL LIMITS CALCULATION DATA				MAXIMUM LOADING		
Pollutant	wwtf Flow (MGD) (Qwwtf)	WDR Limit (mg/l) (Cwdr)	Select Removal Efficiency (from list)	Removal Efficiency (%) (Rwwtf)	Allowable Headworks (lbs/day)	User Entered Removal Efficiency (%)	EPA %
Arsenic	0.57		User Entered	53.13	-	53.13	45
Cadmium	0.57		User Entered	34.19	-	34.19	67
Chromium	0.57		User Entered	60.19	-	60.19	82
Copper	0.57	0.0065	User Entered	86.00	0.22	86.00	86
Cyanide	0.57	0.0042	User Entered	69.00	0.06	69.00	69
Lead	0.57		User Entered	61.00	-	61.00	61
Mercury	0.57		User Entered	60.00	-	60.00	60
Iron	0.57		User Entered	83.59	-	83.59	
Nickel	0.57		User Entered	26.01	-	26.01	42
Selenium	0.57		User Entered	42.33	-	42.33	50
Silver	0.57		User Entered	99.99	-	99.99	75
Zinc	0.57		User Entered	45.95	-	45.95	
Ammonia	0.57	0.66	User Entered	97.07	106.10	97.07	
BOD	0.57	10	User Entered	98.13	2516.70	98.13	
TSS	0.57	10	User Entered	96.98	1562.26	96.98	
Boron	0.57	1	User Entered	0.00	4.71	0.00	
Chloride	0.57	175	User Entered	12.12	938.51	12.12	
FOG	0.57		User Entered	54.97	-	54.97	
EC	0.57	800	User Entered	0.00	3770.48	0.00	
Aluminum	0.57	0.341	User Entered	65.74	4.69	65.74	
MBAS	0.57		User Entered	97.08	-	97.08	

(Qwwtf) wwtf's average flow in MGD (from Table 2, cell B26).
(Ccrit) NPDES permit limit for a particular pollutant in mg/l (user entered)
(Rwwtf) Removal efficiency across wwtf as percent (from 'Monitoring Data' sheet - Inf/Eff Removal (row 47), Inf/Sldg Removal (row 48), Daily Removal (row 43) - or EPA default for specified treatment process or user entered in column G).
(Lhw) Allowable headworks pollutant loading to the wwtf in pounds per day (lbs/day - calculated).
Lhw = (8.34 * Ccrit * Qwwtf) / (1-Rwwtf/100)
8.34 Unit conversion factor

TABLE 4 - Local Limits Determination Based on Chronic Water Quality Standards

	LOCAL LIMITS CALCULATION DATA					MAXIMUM LOADING
Pollutant	wwtf Flow (MGD) (Qwwtf)	Receiving Stream Flow (MGD) (Qstr1)	Receiving Stream Concentration (mg/l) (Cstr)	Chronic WQS (mg/l) (Cwq)	Removal Efficiency (%) (Rwwtf)	Allowable Headworks (lbs/day)
Arsenic	0.57	0.00	0.00056	0.15000	53.13	1.51
Cadmium	0.57	0.00	0	0.00220	34.19	0.02
Copper	0.57	0.00	0.002	0.00650	86.00	0.22
Cyanide	0.57	0.00	0.0043	0.00420	69.00	0.06
Lead	0.57	0.00	0.00031	0.00170	61.00	0.02
Mercury	0.57	0.00	0.00026	0.00077	60.00	0.01
Nickel	0.57	0.00	0.0023	0.04500	26.01	0.29
Selenium	0.57	0.00	0	0.00500	42.33	0.04
Silver	0.57	0.00	0	0.00088	99.99	41.48
Zinc	0.57	0.00	0	0.10000	45.95	0.87
Chloride	0.57	0.00	1.2	230.00000	12.12	1233.47
FOG	0.57	0.00	0	90.00000	54.97	942.08

(Qwwtf)	wwtf's average flow in MGD (from Table 2, cell B26).
(Qstr1)	Receiving stream (upstream) flow used with chronic water quality standards in MGD (from Table 2, cell F26).
(Cstr)	Receiving stream background concentration in mg/l (user entered based on 2013 data
(Cwq)	State chronic water quality standard for a particular pollutant in mg/l (user entered)
(Rwwtf)	Removal efficiency across wwtf as percent (from Table 3, column E).
(Lhw)	Allowable headworks pollutant loading to the wwtf in pounds per day (lbs/day - calculated).
Lhw =	8.34 * (Ccrit * (Qstr1 + Qwwtf) - (Cstr * Qstr1)) / (1-Rwwtf/100)
8.34	Unit conversion factor

TABLE 5 - Local Limits Determination Based on Agricultural Water Quality Standards

	LOCAL LIMITS CALCULATION DATA					MAXIMUM LOADING
Pollutant	wwtf Flow (MGD) (Qwwtf)	Receiving Stream Flow (MGD) (Qstr2)	Receiving Stream Concentration (mg/l) (Cstr)	Agricultural WQS (mg/l) (Cwq)	Removal Efficiency (%) (Rwwtf)	Allowable Headworks (lbs/day)
Arsenic	0.57	0.00	0.00056	0.10	53.13	1.01
Cadmium	0.57	0.00	0	0.01	34.19	0.07
Chromium	0.57	0.00	0	0.10	60.19	1.18
Copper	0.57	0.00	0.002	0.20	86.00	6.73
Lead	0.57	0.00	0.00031	5.00	61.00	60.42
Molybdenum	0.57	0.00	0	0.01	83.59	0.29
Nickel	0.57	0.00	0.0023	0.20	26.01	1.27
Selenium	0.57	0.00	0	0.02	42.33	0.16
Zinc	0.57	0.00	0	2.00	45.95	17.44
Boron	0.57	0.00	0	0.70	0.00	3.30
Chloride	0.57	0.00	1.2	106.00	12.12	568.47
Aluminum	0.57	0.00	0.14	5.00	65.74	68.78

(Qwwtf)	wwtf's average flow in MGD (from Table 2, cell B26).
(Qstr2)	Receiving stream (upstream) flow used with acute water quality standards in MGD (from Table 2, cell G26).
(Cstr)	Receiving stream background concentration in mg/l (from Table 3, column D).
(Cwq)	State acute water quality standard for a particular pollutant in mg/l (user entered)
(Rwwtf)	Removal efficiency across wwtf as percent (from Table 3, column E).
(Lhw)	Allowable headworks pollutant loading to the wwtf in pounds per day (lbs/day - calculated).
Lhw =	8.34 * (Ccrit * (Qstr2 + Qwwtf) - (Cstr * Qstr2)) / (1-Rwwtf/100)
8.34	Unit conversion factor

TABLE 6 - Local Limits Determination Based on Human Health Water Quality Standards

	LOCAL LIMITS CALCULATION DATA						MAXIMUM LOADING
Pollutant	wwtf Flow (MGD) (Qwwtf)	Receiving Stream Flow (MGD) (Qstr3 or Qstr4)	Receiving Stream Concentration (mg/l) (Cstr)	Human Health WQS (mg/l) (Cwq)	Select Basis of Standard (from list)	Removal Efficiency (%) (Rwwtf)	Allowable Headworks (lbs/day) (Lhw)
Arsenic	0.565120465	0.00	0.00056	0.01	hreshold Human Health	53.13	0.1006
Cadmium	0.565120465	0.00	0	0.005	hreshold Human Health	34.19	0.0358
Chromium	0.565120465	0.00	0	0.01	hreshold Human Health	60.19	0.1184
Copper	0.565120465	0.00	0.002	1.3	hreshold Human Health	86.00	43.7645
Cyanide	0.565120465	0.00	0.0043	0.15	hreshold Human Health	69.00	2.2805
Lead	0.565120465	0.00	0.00031	0.15	hreshold Human Health	61.00	1.8127
Mercury	0.565120465	0.00	0.00026	0.002	hreshold Human Health	60.00	0.0236
Molybdenum	0.565120465	0.00	0		Threshold Human Health	83.59	-
Nickel	0.565120465	0.00	0.0023	0.1	hreshold Human Health	26.01	0.6370
Selenium	0.565120465	0.00	0	0.05	hreshold Human Health	42.33	0.4086
Silver	0.565120465	0.00	0		Threshold Human Health	99.99	-
Zinc	0.565120465	0.00	0		Threshold Human Health	45.95	-
Ammonia	0.565120465	0.00	0	30	hreshold Human Health	97.07	4822.7462
BOD	0.565120465	0.00	0		Threshold Human Health	98.13	-
TSS	0.565120465	0.00	0		Threshold Human Health	96.98	-
Boron	0.565120465	0.00	0		Threshold Human Health	0.00	-
Chloride	0.565120465	0.00	1.2		Threshold Human Health	12.12	-
FOG	0.565120465	0.00	0		Threshold Human Health	54.97	-
Aluminum	0.565120465	0.00	0.14	1	hreshold Human Health	65.74	13.7556
MBAS	0.565120465	0.00	0	0.15	hreshold Human Health	97.08	24.1984
Electroconductivity	0.565120465	0.00	0		Threshold Human Health	0.00	-

(Qwwtf)	wwtf's average flow in MGD (from Table 2, cell B26).
(Qstr3)	Receiving stream (upstream) flow used with human health water quality standards in MGD (from Table 2, cell H26 or I26).
(Cstr)	Receiving stream background concentration in mg/l (from Table 4, column D).
(Cwq)	State human health water quality standard for a particular pollutant in mg/l (user entered)
(Rwwtf)	Removal efficiency across wwtf as percent (from Table 3, column E).
(Lhw)	Allowable headworks pollutant loading to the wwtf in pounds per day (lbs/day - calculated).
Lhw =	8.34 * (Ccrit * (Qstr3 + Qwwtf) - (Cstr * Qstr3)) / (1-Rwwtf/100)
8.34	Unit conversion factor

TABLE 7 - Comparison of Water Quality Allowable Headworks Loadings

Pollutant	Allowable Headworks (NPDES) (lbs/day)	Allowable Headworks (CHRONIC) (lbs/day)	Allowable Headworks (AGRICULTURAL) (lbs/day)	Allowable Headworks (HUMAN HEALTH) (lbs/day)	Allowable Headworks (WATER QUALITY) (lbs/day)
Arsenic	-	1.51	1.01	0.10	0.10
Cadmium	-	0.02	0.07	0.04	0.02
Chromium	-	-	1.18	0.12	0.12
Copper	0.22	0.22	6.73	43.76	0.22
Cyanide	0.06	0.06	-	2.28	0.06
Lead	-	0.02	60.42	1.81	0.02
Mercury	-	0.01	-	0.02	0.01
Molybdenum	-	-	0.29	-	0.29
Nickel	-	0.29	1.27	0.64	0.29
Selenium	-	0.04	0.16	0.41	0.04
Silver	-	41.48	-	-	41.48
Zinc	-	0.87	17.44	-	0.87
Ammonia	106.10	-	-	4822.75	106.10
BOD	2516.70	-	-	-	2516.70
TSS	1562.26	-	-	-	1562.26
Boron	4.71	-	3.30	-	3.30
Chloride	938.51	1233.47	568.47	-	568.47
FOG	-	942.08	-	-	942.08
EC	3770.48	-	-	-	3770.48
Aluminum	4.69	-	68.78	13.76	4.69
MBAS	-	-	-	24.20	24.20

Allowable Headworks (NPDES) from Table 3, column F.
Allowable Headworks (CHRONIC) from Table 4, column G.
Allowable Headworks (AGRICULTURAL) from Table 5, column G.
Allowable Headworks (HUMAN HEALTH) from Table 6, column H.
Allowable Headworks (WATER QUALITY) is lowest value from columns B through E.

TABLE 8 - Local Limits Determination Based on Activated Sludge Inhibition Level

	LOCAL LIMITS CALCULATIONS DATA				MAXIMUM LOADING	
Pollutant	wwtf Flow (MGD) (Qwwtf)	Activated Sludge Inhibition Level (mg/l) (Cact)	Select Removal Efficiency (from list)	Removal Efficiency (%) (Rprim)	Allowable Headworks (lbs/day) (Lhw)	User Entered Removal Efficiency (%)
Arsenic	0.57	0.1	Default (Through Primary)	15.00	0.55	3.33
Cadmium	0.57	1	Default (Through Primary)	15.00	5.54	15.00
Chromium	0.57	1	Default (Through Primary)	27.00	6.46	11.76
Copper	0.57	1	Default (Through Primary)	22.00	6.04	17.25
Cyanide	0.57	0.1	Default (Through Primary)	27.00	0.65	27.00
Lead	0.57	1	Default (Through Primary)	57.00	10.96	25.00
Mercury	0.57	0.1	Default (Through Primary)	10.00	0.52	56.52
Nickel	0.57	1	Default (Through Primary)	14.00	5.48	8.82
Zinc	0.57	0.3	Default (Through Primary)	27.00	1.94	17.08
Ammonia	0.57	480	Default (Through Primary)	19.12	2797.09	19.12

(Qwwtf) wwtf's average flow in MGD (from Table 2, cell B26).
(Ccrit) Activated sludge threshold inhibition level, mg/l (EPA default or user entered).
(Rprim) Removal efficiency prior to activated sludge treatment unit as percent (EPA default or user entered).
(Lhw) Allowable headworks pollutant loading to the wwtf in pounds per day (lbs/day - calculated).
Lhw = 8.34 * (Ccrit * Qwwtf) / (1-Rprim/100)
8.34 Unit conversion factor

TABLE 9 - Local Limits Determination Based on Trickling Filter Inhibition Level

	LOCAL LIMITS CALCULATIONS DATA				MAXIMUM LOADING	
Pollutant	wwtf Flow (MGD) (Qwwtf)	Trickling Filter Inhibition Level (mg/l) (Ctric)	Select Removal Efficiency (from list)	Removal Efficiency (%) (Rprim)	Allowable Headworks (lbs/day) (Lhw)	User Entered Removal Efficiency (%)
Chromium	0.565120465	-	Default (Through Primary)	11.76	-	
Cyanide	0.565120465	-	Default (Through Primary)	57.00	-	
Lead	0.565120465	-	Default (Through Primary)	-	-	
Mercury	0.565120465	-	Default (Through Primary)	-	-	
Nickel	0.565120465	-	Default (Through Primary)	-	-	
Selenium	0.565120465	-	Default (Through Primary)	-	-	
Silver	0.565120465	-	Default (Through Primary)	-	-	
Zinc	0.565120465	-	Default (Through Primary)	-	-	

(Qwwtf)	wwtf's average flow in MGD (from Table 2, cell B26).
(Ccrit)	Trickling filter threshold inhibition level, mg/l (EPA default or user entered).
(Rprim)	Removal efficiency prior to trickling filter treatment unit as percent (user entered).
(Lhw)	Allowable headworks pollutant loading to the wwtf in pounds per day (lbs/day - calculated).
Lhw =	8.34 * (Ccrit * Qwwtf) / (1-Rprim/100)
8.34	Unit conversion factor

TABLE 10 - Local Limits Determination Based on Nitrification Inhibition Level

	LOCAL LIMITS CALCULATIONS DATA				MAXIMUM LOADING
Pollutant	wwtf Flow (MGD) (Qwwtf)	Nitrification Inhibition Level (mg/l) (Ccrit)	Select Removal Efficiency (from list)	Removal Efficiency (%) (Rsec)	Allowable Headworks (lbs/day) (Lhw)
Arsenic	0.57	1.5	Default (Through Act. Sludg	45.00	12.85
Cadmium	0.57	5.2	Default (Through Act. Sludg	67.00	74.27
Chromium	0.57	0.25	Default (Through Act. Sludg	82.00	6.55
Copper	0.57	0.05	Default (Through Act. Sludg	86.00	1.68
Cyanide	0.57	0.34	Default (Through Act. Sludg	69.00	5.17
Lead	0.57	0.5	Default (Through Act. Sludg	61.00	6.04
Nickel	0.57	0.25	Default (Through Act. Sludg	42.00	2.03
Zinc	0.57	0.08	Default (Through Act. Sludg	79.00	1.80

(Qwwtf) wwtf's average flow in MGD (from Table 2, cell B26).
(Ccrit) Nitrification threshold inhibition level, mg/l (EPA default or user entered).
(Rsec) Removal efficiency prior to nitrification treatment unit as percent (user entered).
(Lhw) Maximum allowable headworks pollutant loading to the wwtf in pounds per day (lbs/day - calculated).
Lhw = (8.34 * Ccrit * Qwwtf) / (1-Rsec/100)
8.34 Unit conversion factor

TABLE 11 - Local Limits Determination Based on Anaerobic Digester Inhibition Level (Conservative Pollutants)

	LOCAL LIMITS CALCULATIONS DATA				MAXIMUM LOADING
Pollutant	wwtf Flow (MGD) (Qwwtf)	Sludge Flow to Digester (MGD) (Qdig)	Anaerobic Digester Inhibition Level (mg/l) (Ccrit)	Removal Efficiency (%) (Rwwtf)	Allowable Headworks (lbs/day) (Lhw)
Arsenic	0.565120465	0.03833	-	53.13	-
Cadmium	0.565120465	0.03833	-	34.19	-
Chromium	0.565120465	0.03833	-	60.19	-
Copper	0.565120465	0.03833	-	86.00	-
Lead	0.565120465	0.03833	-	61.00	-
Nickel	0.565120465	0.03833	-	26.01	-
Silver	0.565120465	0.03833	-	99.99	-
Zinc	0.565120465	0.03833	-	45.95	-

(Qwwtf) wwtf's average flow in MGD (from Table 2, cell B26).
(Qdig) Average sludge flow to digester in MGD (from Table 2, cell D26).
(Ccrit) Anaerobic digester threshold inhibition level in mg/l (EPA default or user entered).
(Rwwtf) Removal efficiency across wwtf as percent (from Table 3, column E).
(Lhw) Maximum allowable headworks pollutant loading to the wwtf in pounds per day (lbs/day - calculated).
Lhw = (8.34 * Ccrit * Qdig) / (Rwwtf/100)
8.34 Unit conversion factor

TABLE 12 - Local Limits Determination Based on Anaerobic Digester Inhibition Level (Non-Conservative Pollutants)

	LOCAL LIMITS CALCULATIONS DATA					MAXIMUM LOADING
Pollutant	wwtf Flow (MGD) (Qwwtf)	Average Influent Concentration (mg/l)	Average Influent Load (lbs/day) (Linf)	Digester Pollutant Concentration (mg/l) (Cdig)	Anaerobic Digester Inhibition Level (mg/l) (Cdiginb)	Allowable Headworks (lbs/day) (Lhw)
Cyanide	0.565120465	2.50	11.7828	3.73	-	-
Ammonia	0.565120465	95.50	450.1015	4214.25	-	-

(Qwwtf)	wwtf's average flow in MGD (from Table 2, cell B26).
(Cinf)	wwtf's average influent concentration in mg/l (from 'Monitoring Data' sheet, row 43 or user entered).
(Linf)	wwtf's average influent loading in pounds per day (lbs/day - calculated).
Linf =	8.34 * Cinf * Qwwtf
8.34	Unit conversion factor
(Cdig)	Average pollutant concentration in sludge sent to the digester in mg/l (user entered).
(Ccrit)	Anaerobic digester threshold inhibition level in mg/l (EPA default or user entered).
(Lhw)	Maximum allowable headworks pollutant loading to the wwtf in pounds per day (lbs/day - calculated).
Lhw =	Linf * (Ccrit/Cdig)

TABLE 13 - Comparison of Inhibition Allowable Headworks Loadings

Pollutant	Allowable Headworks (ACT. SLUDGE) (lbs/day)	Allowable Headworks (TRICK. FILTER) (lbs/day)	Allowable Headworks (NITRIF) (lbs/day)	Allowable Headworks (DIG. - CONSERV.) (lbs/day)	Allowable Headworks (DIG. - NON-CONS.) (lbs/day)	Most Stringent (INHIBITION) (lbs/day)	Maximum Influent Concentration (Cmaxin - mg/l)	Maximum Influent Loading (Lmaxin - lbs/d)	Allowable Headworks (INHIBITION) (lbs/d)
Arsenic	0.55	-	12.85	-	-	0.55	-	-	0.55
Cadmium	5.54	-	74.27	-	-	5.54	-	-	5.54
Chromium	6.46	-	6.55	-	-	6.46	-	-	6.46
Copper	6.04	-	1.68	-	-	1.68	-	-	1.68
Cyanide	0.65	-	5.17	-	-	0.65	-	-	0.65
Lead	10.96	-	6.04	-	-	6.04	-	-	6.04
Mercury	0.52	-	-	-	-	0.52	-	-	0.52
Nickel	5.48	-	2.03	-	-	2.03	-	-	2.03
Zinc	1.94	-	1.80	-	-	1.80	-	-	1.80
Ammonia	2797.09	-	-	-	-	2797.09	-	-	2797.09

Allowable Headworks (ACT. SLUDGE) from Table 8, column E.
Allowable Headworks (TRICK. FILTER) from Table 9, column E.
Allowable Headworks (NITRIF.) from Table 10, column E.
Allowable Headworks (DIG. - CONSERV.) from Table 11 column F.
Allowable Headworks (DIG. - NON_CONS.) from Table 12, column G.
Most Stringent (INHIBITION) is lowest value from columns B through F.
(Cmaxin) Maximum Influent Concentration (from 'Monitoring Data' sheet, row 44).
(Lmaxin) Maximum Influent Loading (calculated).
Lmaxin = 8.34 * Cmaxin * Qwwtf
8.34 Unit conversion factor
(Qwwtf) wwtf's average flow in MGD (from Table 2, cell B26).
Allowable Headworks (INHIBITION) is highest value from column G or I.

TABLE 14 - Local Limits Determination Based on Land Application Sludge Disposal

	LOCAL LIMITS CALCULATIONS DATA				MAXIMUM LOADING
Pollutant	wwtf Flow (MGD) (Qwwtf)	Sludge Flow to Disposal (MTD) (Qbsol)	Land Application Standard (mg/kg) (Cbsol)	Removal Efficiency (%) (Rwwtf)	Allowable Headworks (lbs/day) (Lhw)
Arsenic	0.57	0.27	41	53.13	0.05
Cadmium	0.57	0.27	28.6	34.19	0.05
Chromium	0.57	0.27	2500	60.19	2.50
Copper	0.57	0.27	1500	86.00	1.05
Lead	0.57	0.27	234	61.00	0.23
Mercury	0.57	0.27	5.6	60.00	0.01
Nickel	0.57	0.27	420	26.01	0.97
Selenium	0.57	0.27	10.71	42.33	0.02
Silver	0.57	0.27	500	99.99	0.30
Zinc	0.57	0.27	2800	45.95	3.67

(Qwwtf)	wwtf's average flow in MGD (from Table 2, cell B26).
(Qsldg)	Average sludge flow to disposal in dry metric tons per day (from Table 2, cell E26).
(Cslcrit)	Applicable sludge standard in mg/kg dry sludge (exceptional quality standard for land application or user entered).
(Rwwtf)	Removal efficiency across wwtf as a percent (from Table 3, column E).
(Lhw)	Maximum allowable headworks pollutant loading to the wwtf in pounds per day (lbs/day - calculated).
Lhw =	(0.0022 * Cslcrit * Qsldg) / (Rwwtf/100)
0.0022	Unit conversion factor

TABLE 16 - Comparison of Sludge Allowable Headworks Loadings

Pollutant	Allowable Headworks (LAND APPL.) (lbs/day)	Allowable Headworks (INCINERATION) (lbs/day)	Allowable Headworks (SLUDGE) (lbs/d)
Arsenic	0.0465	-	0.0465
Cadmium	0.0504	-	0.0504
Chromium	2.5039	-	2.5039
Copper	1.0514	-	1.0514
Cyanide	-	-	-
Lead	0.2312	-	0.2312
Mercury	0.0056	-	0.0056
Molybdenum	-	-	-
Nickel	0.9733	-	0.9733
Selenium	0.0153	-	0.0153
Silver	0.3014	-	0.3014
Zinc	3.6735	-	3.6735

Allowable Headworks (LAND APPL.) from Table 14, column F.
Allowable Headworks (INCINERATION) from Table 15, column L.
Allowable Headworks (SLUDGE) is lowest value from column B and C.

TABLE 17 - Comparison of Allowable Headworks Loadings

Pollutant	Allowable Headworks (WATER QUALITY) (lbs/day)	Allowable Headworks (INHIBITION) (lbs/d)	Allowable Headworks (SLUDGE) (lbs/d)	Design Loading (lbs/d)	Maximum Allowable Headworks (MAHL - lbs/d)
Arsenic	0.10	0.55	0.05	-	0.05
Cadmium	0.02	5.54	0.05	-	0.02
Chromium	0.12	6.46	2.50	-	0.12
Copper	0.22	1.68	1.05	-	0.22
Cyanide	0.06	0.65	-	-	0.06
Lead	0.02	6.04	0.23	-	0.02
Mercury	0.01	0.52	0.01	-	0.01
Molybdenum	0.29	-	-	-	0.29
Nickel	0.29	2.03	0.97	-	0.29
Selenium	0.04	-	0.02	-	0.02
Silver	41.48	-	0.30	-	0.30
Zinc	0.87	1.80	3.67	-	0.87
Ammonia	106.10	2797.09	-	-	106.10
BOD	2516.70	-	-	-	2516.70
TSS	1562.26	-	-	-	1562.26
Boron	3.30	-	-	-	3.30
Chloride	568.47	-	-	-	568.47
FOG	942.08	-	-	-	942.08
EC	3770.48	-	-	-	3770.48
Aluminum	4.69	-	-	-	4.69
MBAS	24.20	-	-	-	24.20

Allowable Headworks (WATER QUALITY) from Table 7, column F.
Allowable Headworks (INHIBITION) from Table 13, column J.
Allowable Headworks (SLUDGE) from Table 16, column D.
Design Loading of wwtf treatment plant (user entered).
Maximum allowable headworks loading (MAHL) is lowest value from columns B through E.

TABLE 18 - Calculation of Local Limit

Pollutant	Maximum Allowable Headworks (MAHL - lbs/d)	Safety Factor (%) (SF)	Growth Allowance (%) (GA)	Nonindustrial Concentration (mg/l) (Cdom)	Nonindustrial Flow (MGD) (Qdom)	Nonindustrial Loading (lbs/day) (Ldom)	Hauled Waste Concentration (mg/l) (Chw)	Hauled Waste Flow (MGD) (Qhw)	Hauled Waste Loading (lbs/day) (Lhw)	Allowable Industrial Loading (MAIL - lbs/day)	Local Limit (mg/l) (Cind)	Basis of Limitation
Arsenic	0.05	10	0	0.0061	0.32	0.02	0.00	0.00	0.00	0.03	0.01	Sludge
Cadmium	0.02	10	0	0.0003	0.32	0.00	0.00	0.00	0.00	0.01	0.01	Water Quality
Chromium	0.12	10	0	0.0060	0.32	0.02	0.00	0.00	0.00	0.09	0.04	Water Quality
Copper	0.22	10	0	0.0171	0.32	0.04	0.00	0.00	0.00	0.15	0.07	Water Quality
Cyanide	0.06	10	0	0.0065	0.32	0.02	0.00	0.00	0.00	0.04	0.02	Water Quality
Lead	0.02	10	0	0.0027	0.32	0.01	0.00	0.00	0.00	0.01	0.01	Water Quality
Mercury	0.01	10	0	0.0003	0.32	0.00	0.00	0.00	0.00	0.00	0.00	Sludge
Molybdenum	0.29	10	0	0.0142	0.32	0.04	0.00	0.00	0.00	0.22	0.11	Water Quality
Nickel	0.29	10	0	0.0036	0.32	0.01	0.00	0.00	0.00	0.25	0.12	Water Quality
Selenium	0.02	10	0	0.0040	0.32	0.01	0.00	0.00	0.00	0.00	0.00	Sludge
Silver	0.30	10	0	0.0001	0.32	0.00	0.00	0.00	0.00	0.27	0.13	Sludge
Zinc	0.87	10	0	0.0775	0.32	0.20	0.00	0.00	0.00	0.58	0.28	Water Quality
Ammonia	106.10	10	0	23.9588	0.32	63.01	0.00	0.00	0.00	32.48	15.59	Water Quality
BOD	2516.70	10	0	136.82	0.32	359.84	0.00	0.00	0.00	1905.19	914.61	Water Quality
TSS	1562.26	10	0	82.06	0.32	215.83	0.00	0.00	0.00	1190.20	571.37	Water Quality
Boron	3.30	10	0	0.38	0.32	1.01	0.00	0.00	0.00	1.96	0.94	Water Quality
Chloride	568.47	10	0	62.45	0.32	164.26	0.00	0.00	0.00	347.36	166.76	Water Quality
FOG	942.08	10	0	58.54	0.32	153.97	0.00	0.00	0.00	693.90	333.12	Water Quality
EC	3770.48	10	0	862.27	0.32	2267.82	0.00	0.00	0.00	1125.62	540.37	Water Quality
Aluminum	4.69	10	0	0.30	0.32	0.79	0.00	0.00	0.00	3.43	1.65	Water Quality
MBAS	24.20	10	0	6.81	0.32	17.92	0.00	0.00	0.00	3.86	1.85	Water Quality

(MAHL) Maximum allowable headworks loading (from Table 17, column F).
(SF) Safety factor as a percent (user entered).
(GA) Growth allowance as a percent (user entered).
(Cdom) Average domestic/commercial background concentration for a particular pollutant in mg/l (from 'Monitoring Data sheet row 43 or user entered).
(Qdom) Average domestic/commercial background flow in MGD (calculated).
Qdom = Qwwtf - Qind - Qhw (values from Table 2, cells B26, C26, and K26)
(Ldom) Average domestic/commercial background loading to the wwtf for a particular pollutant in pounds per day (calculated).
Ldom = 8.34 * Cdom * Qdom
8.34 Unit conversion factor
(Chw) Average hauled waste concentration for a particular pollutant in mg/l (from "Monitoring Data" sheet, row 43 or user entered).
(Qhw) Average hauled waste flow in MGD (from Table 2, cell K26).
(Lhw) Average hauled waste loading to the wwtf for a particular pollutant in pounds per day (calculated).
Lhw = 8.34 * Chw * Qhw
(MAIL) Maximum Allowable Industrial Load (calculated).
MAIL = MAHL * (1 - SF) - Ldom - Lhw
(Cind) Industrial allowable local limit for a given pollutant in mg/l (calculated).
Cind = MAIL/(8.34 * Qind)
Basis of Limitation is an identification of the lowest allowable headworks loading from Table 17.

TABLE 19 - Comparison of Allowable Headworks Loadings And Current Influent Loadings

Pollutant	Maximum Allowable Headworks (MAHL - lbs/d)	Average Influent Loading (lbs/day)	Average Percent Loaded (%)	Maximum Influent Loading (lbs/d)	Maximum Percent Loaded (%)
Arsenic	0.05	0.04	89.81	-	-
Cadmium	0.02	0.01	33.27	-	-
Chromium	0.12	0.05	38.44	-	-
Copper	0.22	0.41	188.56	-	-
Cyanide	0.06	0.02	31.76	-	-
Lead	0.02	0.02	82.25	-	-
Mercury	0.01	0.00	0.01	-	-
Molybdenum	0.29	0.17	59.18	-	-
Nickel	0.29	0.02	7.07	-	-
Selenium	0.02	0.06	413.69	-	-
Silver	0.30	0.00	1.15	-	-
Zinc	0.87	1.99	228.05	-	-
Ammonia	106.10	73.09	68.89	-	-
BOD	2516.70	680.64	27.05	-	-
TSS	1562.26	1151.31	73.70	-	-
Boron	3.30	0.65	19.81	-	-
Chloride	568.47	256.22	45.07		0.0000
FOG	942.08	34.94	3.71		0.0000
EC	3770.48	4259.80	112.98		0.0000
Aluminum	4.69	3.39	72.22		0.0000
MBAS	24.1984	15.9153	65.77		0.0000

(MAHL) Maximum Allowable Headworks Loading (from Table 17).
Average Influent Loading from 'Monitoring Data' sheet row 46.
Average Percent Loaded = (Average Influent Loading)/(Maximum Allowable Headworks Loading)*100
Maximum Influent Loading is the Maximum Influent Concentration from 'Monitoring Data' sheet row 44 converted to a loading using the wwtf flow from Table 2, cell B26.
Maximum Percent Loaded = (Maximum Influent Loading)/(Maximum Allowable Headworks Loading)*100

TABLE 20 - Calculation of Influent, Effluent, and Sludge Goals

Pollutant	Maximum Allowable Headworks (MAHL - lbs/d)	wwtf Flow (MGD) (Qwwtf)	Influent Goal (mg/l) (MAHC)	Allowable Headworks (WATER QUALITY) (AHLwq - lbs/day)	Removal Efficiency (%) (Rwwtf)	Effluent Goal (mg/l)	Allowable Headworks (SLUDGE) (AHLs - lbs/day)	Sludge Flow to Disposal (MTD) (Qsldg)	Sludge Goal (mg/kg)
Arsenic	0.0465	0.565120465	0.0099	0.1006	53.13	0.0100	0.0465	0.274	41
Cadmium	0.0158	0.565120465	0.0033	0.0158	34.19	0.0022	0.0504	0.274	29
Chromium	0.1184	0.565120465	0.0251	0.1184	60.19	0.0100	2.5039	0.274	2500
Copper	0.2188	0.565120465	0.0464	0.2188	86.00	0.0065	1.0514	0.274	1500
Cyanide	0.0639	0.565120465	0.0135	0.0639	69.00	0.0042	-	0.274	-
Lead	0.0205	0.565120465	0.0044	0.0205	61.00	0.0017	0.2312	0.274	234
Mercury	0.0056	0.565120465	0.0012	0.0091	60.00	0.0008	0.0056	0.274	6
Molybdenum	0.2872	0.565120465	0.0609	0.2872	83.59	0.0100	-	0.274	-
Nickel	0.2867	0.565120465	0.0608	0.2867	26.01	0.0450	0.9733	0.274	420
Selenium	0.0153	0.565120465	0.0032	0.0409	42.33	0.0050	0.0153	0.274	11
Silver	0.3014	0.565120465	0.0640	41.4753	99.99	0.0009	0.3014	0.274	500
Zinc	0.8719	0.565120465	0.1850	0.8719	45.95	0.1000	3.6735	0.274	2800
Ammonia	106.1004	0.565120465	22.5118	106.1004	97.07	0.6600	-	0.274	-
BOD	2516.6982	0.565120465	533.9788	2516.6982	98.13	10.0000	-	0.274	-
TSS	1562.2621	0.565120465	331.4720	1562.2621	96.98	10.0000	-	0.274	-
Boron	3.2992	0.565120465	0.7000	3.2992	0.00	0.7000	-	0.274	-
Chloride	568.4679	0.565120465	120.6143	568.4679	12.12	106.0000	-	0.274	-
FOG	4.6906	0.565120465	0.9952	942.0757	54.97	90.0000	-	0.274	-

(MAHL)	Maximum allowable headworks loading (from Table 18).
(Qwwtf)	wwtf's average flow in MGD (from Table 2, cell B26).
(MAHC)	Influent concentration necessary to meet effluent, sludge, and inhibition goals (calculated).
MAHC =	MAHL/(Qwwtf * 8.34)
8.34	Unit conversion factor
(AHLwq)	Allowable Headworks (WATER QUALITY) from Table 7, column F.
(Rwwtf)	Removal efficiency across wwtf as percent (from Table 3, column F).
(Effluent Goal)	Discharge concentration necessary to meet NPDES limit or water quality standards (calculated)
Effluent Goal =	(MAHL) * (1-Rwwtf/100)/(8.34 * Qwwtf)
(AHLs)	Allowable Headworks (SLUDGE) from Table 16, column D.
(Qsldg)	Average sludge flow to disposal in dry metric tons per day (from Table 2, cell E26).
(Sludge Goal)	Sludge standard used in headworks calculations for sludge protection (calculated)
Sludge Goal =	AHLs * (Rwwtf/100) / (0.0022 * Qsldg)

Date	As In (mg/l	As Eff (mg/l	As Daily Rem (%	As Sl (mg/kg dry	As Nonindust (mg/l	As Hauled (mg/	Cd In (mg/l	Cd Eff (mg/l	Cd Daily Rem (%	Cd Sl (mg/kg dry	Cd Nonindust (mg/
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			-						-		
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Count	0	0	0	0	0	0	0	0	0	0	0
Average	-	-	0	-	-	-	-	-	0	-	-
Maximum	-	-	-	-	-	-	-	-	-	-	-
Minimum	-	-	-	-	-	-	-	-	-	-	-
Loading	-	-		-			-	-		-	
Inf/Eff Removal (%)		0						0			
Inf/Sldg Removal (%)				0						0	

Actual Sample Result
Non-detect - detection limit used as a surrogate
Non-detect - half the detection limit used as a surrogate
Data point deleted because it was inconsistent with other data points

Date	Cd Hauled (mg/
Count	0
Average	-
Maximum	-
Minimum	-
Loading	
Inf/Eff Removal (%)	
Inf/Sldg Removal (%	

Actual Sample Resu
Non-detect - detectio
Non-detect - half the
Data point deleted b

Date	Cr In (mg/l)	Cr Eff (mg/l)	Cr Daily Rem (%	Cr Sl (mg/kg dry)	Cr Nonindust (mg/l	Cr Hauled (mg/	Cu In (mg/l	Cu Eff (mg/l	Cu Daily Rem (%	Cu Sl (mg/kg dry	Cu Nonindust (mg/
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Count	0	0	0	0	0	0	0	0	0	0	0
Average	-	-	0	-	-	-	-	-	0	-	-
Maximum	-	-	-	-	-	-	-	-	-	-	-
Minimum	-	-	-	-	-	-	-	-	-	-	-
Loading	-	-		-			-	-		-	
Inf/Eff Removal (%)		0						0			
Inf/Sldg Removal (%				0						0	

Actual Sample Resu
Non-detect - detectio
Non-detect - half the
Data point deleted b

Date	Cu Hauled (mg/
Count	0
Average	-
Maximum	-
Minimum	-
Loading	
Inf/Eff Removal (%)	
Inf/Sldg Removal (%	

Actual Sample Resu
Non-detect - detectio
Non-detect - half the
Data point deleted b

Date	CN In (mg/l	CN Eff (mg/l	CN Daily Rem (%	CN Sl (mg/kg dry	CN Nonindust (mg/	CN Hauled (mg/	Pb In (mg/l	Pb Eff (mg/l	Pb Daily Rem (%	Pb Sl (mg/kg dry	Pb Nonindust (mg/
			-						-		
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Count	0	0	0	0	0	0	0	0	0	0	0
Average	-	-	0	-	-	-	-	-	0	-	-
Maximum	-	-	-	-	-	-	-	-	-	-	-
Minimum	-	-	-	-	-	-	-	-	-	-	-
Loading	-	-		-			-	-		-	
Inf/Eff Removal (%)		0						0			
Inf/Sldg Removal (%				Non-conserv poll						0	

Actual Sample Resu
Non-detect - detectic
Non-detect - half the
Data point deleted b

Date	Pb Hauled (mg/
Count	0
Average	-
Maximum	-
Minimum	-
Loading	
Inf/Eff Removal (%)	
Inf/Sldg Removal (%	

Actual Sample Resu
Non-detect - detectic
Non-detect - half the
Data point deleted b

Date	Hg In (mg/l	Hg Eff (mg/l	Hg Daily Rem (%	Hg Sl (mg/kg dry	Hg Nonindust (mg/	Hg Hauled (mg/	Mo In (mg/l	Mo Eff (mg/l	Mo Daily Rem (%	Mo Sl (mg/kg dry	Mo Nonindust (mg/
			-						-		
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Count	0	0	0	0	0	0	0	0	0	0	0
Average	-	-	0	-	-	-	-	-	0	-	-
Maximum	-	-	-	-	-	-	-	-	-	-	-
Minimum	-	-	-	-	-	-	-	-	-	-	-
Loading	-	-		-			-	-		-	
Inf/Eff Removal (%)		0						0			
Inf/Sldg Removal (%				0						0	

Actual Sample Resu
Non-detect - detectic
Non-detect - half the
Data point deleted b

Date	Mo Hauled (mg/l
Count	0
Average	-
Maximum	-
Minimum	-
Loading	
Inf/Eff Removal (%)	
Inf/Sldg Removal (%	

Actual Sample Resu
Non-detect - detectic
Non-detect - half the
Data point deleted b

Date	Ni In (mg/l)	Ni Eff (mg/l)	Ni Daily Rem (%	Ni Sl (mg/kg dry)	Ni Nonindust (mg/l	Ni Hauled (mg/	Se In (mg/l	Se Eff (mg/l	Se Daily Rem (%	Se Sl (mg/kg dry	Se Nonindust (mg/
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Count	0	0	0	0	0	0	0	0	0	0	0
Average	-	-	0	-	-	-	-	-	0	-	-
Maximum	-	-	-	-	-	-	-	-	-	-	-
Minimum	-	-	-	-	-	-	-	-	-	-	-
Loading	-	-		-			-	-		-	
Inf/Eff Removal (%)		0						0			
Inf/Sldg Removal (%				0						0	

Actual Sample Resu
Non-detect - detectio
Non-detect - half the
Data point deleted b

Date	Se Hauled (mg/
Count	0
Average	-
Maximum	-
Minimum	-
Loading	
Inf/Eff Removal (%)	
Inf/Sldg Removal (%	

Actual Sample Resu
Non-detect - detectic
Non-detect - half the
Data point deleted b

Date	Ag In (mg/l	Ag Eff (mg/l	Ag Daily Rem (%	Ag Sl (mg/kg dry	Ag Nonindust (mg/	Ag Hauled (mg/	Zn In (mg/l	Zn Eff (mg/l	Zn Daily Rem (%	Zn Sl (mg/kg dry	Zn Nonindust (mg/l
			-						-		
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Count	0	0	0	0	0	0	0	0	0	0	0
Average	-	-	0	-	-	-	-	-	0	-	-
Maximum	-	-	-	-	-	-	-	-	-	-	-
Minimum	-	-	-	-	-	-	-	-	-	-	-
Loading	-	-		-			-	-		-	
Inf/Eff Removal (%)		0						0			
Inf/Sldg Removal (%				0						0	

Actual Sample Resu
Non-detect - detectic
Non-detect - half the
Data point deleted b

Date	Zn Hauled (mg/l
Count	0
Average	-
Maximum	-
Minimum	-
Loading	
Inf/Eff Removal (%)	
Inf/Sldg Removal (%	

Actual Sample Resu
Non-detect - detectic
Non-detect - half the
Data point deleted b

Date	NH3-N In (mg/l	NH3-N Eff (mg/l	NH3-N Daily Rem (%	NH3-N Sl (mg/kg dr	NH3-N Nonindust (mg/	NH3-N Hauled (mg/	BOD In (mg/l	BOD Eff (mg/l	BOD Daily Rem (%
			-						-
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Count	0	0	0	0	0	0	0	0	0
Average	-	-	0	-	-	-	-	-	0
Maximum	-	-	-	-	-	-	-	-	-
Minimum	-	-	-	-	-	-	-	-	-
Loading	-	-		-			-	-	
Inf/Eff Removal (%)		0						0	
Inf/Sldg Removal (%				Non-conserv poll					

Actual Sample Resu
Non-detect - detectic
Non-detect - half the
Data point deleted b

Date	BOD Sl (mg/kg dry	BOD Nonindust (mg/l	BOD Hauled (mg/
Count	0	0	0
Average	-	-	-
Maximum	-	-	-
Minimum	-	-	-
Loading	-		
Inf/Eff Removal (%)			
Inf/Sldg Removal (%	Non-conserv poll		

Actual Sample Resu
Non-detect - detectic
Non-detect - half the
Data point deleted b

Date	TSS In (mg/	TSS Eff (mg/l	TSS Daily Rem (%	TSS Sl (mg/kg dr	TSS Nonindust (mg/	TSS Hauled (mg/	Be In (mg/l	Be Eff (mg/l	Be Daily Rem (%	Be Sl (mg/kg dry
			-						-	
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Count	0	0	0	0	0	0	0	0	0	0
Average	-	-	0	-	-	-	-	-	0	-
Maximum	-	-	-	-	-	-	-	-	-	-
Minimum	-	-	-	-	-	-	-	-	-	-
Loading	-	-		-			-	-		-
Inf/Eff Removal (%)		0						0		
Inf/Sldg Removal (%				Non-conserv poll						0

Actual Sample Resu
Non-detect - detectio
Non-detect - half the
Data point deleted b

Date	Be Nonindust (mg/l	Be Hauled (mg/l
Count	0	0
Average	-	-
Maximum	-	-
Minimum	-	-
Loading		
Inf/Eff Removal (%)		
Inf/Sldg Removal (%		

Actual Sample Resu
Non-detect - detectic
Non-detect - half the
Data point deleted b

ND = 0

	Wed	Fri	Tues		Tues		Wed		Tue	Wed	Wed		Fri		Mon		Thur	Mon	Fri	Sun	Thur	Thur	Tue	
	10/28/2015	11/13/2015	11/17/2015		11/24/2015		12/9/2015		2/9/2016	2/10/2015	3/16/2016		3/18/2016		4/4/2016		4/7/2016	5/23/2016	5/20/2016	5/22/2016	5/26/2016	6/2/2016	6/7/2016	Average
	CS-02	CS-01	CS-06	CS-03	CS-05	CS-04	CS-01	CS-02	CS-02	CS-01	CS-03	CS-04	CS-05	CS-08	CS-01	CS-02	CS-08	CS-01	CS-02	CS-02	CS-02	CS-01	CS-01	
Test Method 624	ND				ND																			
Chloroform		0.74		2.3		0.84	2.2	7.6	15	0.87											8	0.88	1.4	3.98 ug/L
Toluene		4.9					2.3	2.8	1.1	2.7											1.8	1.9	1.8	2.41 ug/L
Methylene chloride																								#DIV/0! ug/L
Test Method 608																								
Test Method 625					ND																			
m,p-xylene																								#DIV/0! ug/L
Tolune														220			51							135.50 ug/L
Methylene Chloride														5700			1400							3550.00 ug/L
4-methylphenol	12	43		0	0	0	0	46	11	30	0	0	0	0	16	29	0	23	170	39	51		14	23.05 ug/L
3-methylphenol	0	0		65	0	60	53	0	0	0	65	88	0	280	0	19	30					31		40.65 ug/L
Bis (2-ethylhexyl) ph	0	0		0	0	0	0	0	0	0	0	0	0	0	0		0							0.00 ug/L
Diethylphthalate	0	0		0	0	0	0	0	0	0	0	0	0	0	0		0							0.00 ug/L
Phenol	0	5.2		15	0	14	14	6.6	0	2.4	9.8	23	0	660	3.3	7.3	590			5.6		2.5		75.48 ug/L
2,6-dinitrotoluene	0	0		0	0	0	0	0	0	0	0	0	0	0	0									0.00 ug/L
Ammonia as N	26	27			4.9	42	22	22	28	31			4.4		34	25		2	21	27	35	30	26	23.96 mg/L
Nitrate as N	0.12	0.15		0.13	3.5	0.47	0.28	0.21	0		0	0	2.3	0	0	0	0	1.2	0.085	0	0	0.16	0.047	
Cyanide (Total)	0	4.3			4.4	3.2	6	8.4	25	5	6.8	3.2	9.4	14	5.7	4.4	7.9		4.3	5.5	4.7	5.1	3.6	6.55 ug/L
O&G (HEM)	14	170		29	3.9	43	110	67	75	32	47	49	40	83	47	48	24	54	66	28	160	65	33	58.54 mg/L
MBAS	0.62	5.1		3.1	0.43	21	7.4	8.7	11	9.1	2.7	14	0.62	0.74	7.9	6.5	1.8	19	6.7	4.5	8.8	3.2	7	6.81 mg/L
EC	720	690		1000	940	1800	630	700	690	750	920	1400	880	970	780	670	1100	510	670	780	1000	730	640	862.27 mg/L
TDS	430	350		410	620	960	310	350	380	370	400	670	610	420	430	380	600	320	410	430	580	430	380	
Chloride	29	32		62	39	340	81	35	33	36	44	110	36	52	38	33	54	26	36	68	110	41	39	62.45 mg/L
Alumiunum	0.31	0.26		0.16	0.1	0.21		0.31	0.5	0.2	0.18	0.75	0.072		0.19	0.23		0.2	0.34	0.37	0.62	0.42	0.29	0.30 mg/L
Arsenic	0	0		0.012	0.009	0.0074	0.011	0	0	0	0.015	0.0097	0	0	0.0098	0.017	0.019	0	0	0.0035	0.0051	0.0093	0.0064	0.01 mg/L
Barium	0.046	0.039		0.029	0.096	0.037	0.099	0.041	0.038	0.036	0.038	0.031	0.079	0.15	0.032	0.037	0.19	0.031	0.048	0.055	0.083	0.06	0.046	0.06 mg/L
Boron	0.072	0.16		0.079	0.085	0.034	0.1	0.14	0.096	0.14	0.18	0.059	0.097	0.41	0.1	0.11	4.5	1.4	0.13	0.085	0.11	0.17	0.17	0.38 mg/L
Cadmium	0	0		0	0	0.00067	0	0	0	0	0	0	0	0	0	0	0.00098	0.0002	0.00063	0.00054	0.0011	0.00086	0.00083	0.00 mg/L
Chromium	0.004	0.003		0.002	0.0069	0.0026	0.0098	0.0019	0.004	0.0032	0.0026	0.0029	0.007	0.065	0.0035	0.0038	0.04	0.0047	0.0046	0.0052	0.0045	0.0054	0.0049	0.01 mg/L
Copper	0.01	0.0045		0.0096	0.013	0.008	0.067	0.011	0.014	0.011	0.014	0.014	0.013	0.068	0.0084	0.0082	0.033	0.0063	0.011	0.01	0.016	0.014	0.012	0.02 mg/L
Iron	0.62	0.26		0.48	0.21	0.16	1.3	0.39	0.47	0.25	0.58	0.36	0.2	3.6	0.31	0.27	5	0.091	0.66	0.75	0.85	0.95	0.63	0.84 mg/L
Lead	0	0		0.0033	0	0.0029	0	0.003	0	0	0	0.0048	0.003	0.017	0	0	0.019	0.0015	0.0041	0	0	0	0	0.00 mg/L
Mercury	0	0.22		0.36	0.053	0.12	1	0.34	0.39	0.38	0.33	0.18	0.07	0.56	0.25	0.17	0.62	0.1	0.3	0.35	0.5	0.67	0.3	0.33 ug/L
Molybdenum	0.0028	0.0045		0.017	0.053	0.0024	0.0033	0.0028	0.003	0.0087	0.013	0.0025	0.11	0.02	0.0069	0.0069	0.032	0.0039	0.0023	0.0034	0.0042	0.0055	0.0042	0.01 mg/L
Nickel	0.0022	0.0012		0.003	0.00072	0.0027	0.0059	ND	0.0023	0.0013	0.0034	0	0	0.021	0.0027	0.0017	0.019	0.0011	0.0016	0.0019	0.0016	0.0013	0.002	0.00 mg/L
Selenium	0	0		0		0.0099	0	0.0055	0.0025	0	0.0074				0.0041	0.0085		0.0055	0.007	0.0024	0.0058	0.003	0.0057	0.00396 mg/L
Silver	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0011	0	0.00 mg/L
Zinc	0.087	0.061		0.068	0.031	0.058		0.077	0.078	0.065	0.074	0.079	0.047		0.083	0.08		0.07	0.1	0.084	0.1	0.12	0.11	0.08 mg/L
Phosphorous (Total)	7.2	4.4		5.7	2.6	4.7	4.1	4.3	4.5	4.2	6.1	7	2.4	6.2	7.7	3.8	17	0	6.5	4.6	6.9	5.5	5.3	
	CS-02	CS-01	CS-06	CS-03	CS-05	CS-04	CS-01	CS-02	CS-02	CS-01	CS-03	CS-04	CS-05	CS-08	CS-01	CS-02	CS-08	CS-01	CS-02	CS-02	CS-02	CS-01	CS-01	
TSS	62	46		50	7.2	28	66	41	55	57	75	63	9.2	77	140	67	180	120	130	96	56	330	50	82.06 mg/L
BOD	160	110		180	16	56	150	190	120	110	110	190	14	110	200	120	250	130	260	140	170	160	64	136.82 mg/L

Test Method 624	
Chloroform	Chloroform
Toluene	Toluene
Methylene chloride	Ethylbenzene
Test Method 608	
Test Method 625	
m,p-xylene	m,p-xylene
Tolune	Tolune
Methylene Chloride	Methylene Chloride
4-methylphenol	4-methylphenol
3-methylphenol	Benzyl alcohol
Bis (2-ethylhexyl) ph	Bis (2-ethylhexyl) ph
Diethylphthalate	Diethylphthalate
Phenol	Phenol
2,6-dinitrotoluene	2,6-dinitrotoluene
Ammonia as N	Ammonia as N
Nitrate as N	
Cyanide (Total)	Cyanide (Total)
O&G (HEM)	O&G (HEM)
MBAS	MBAS
EC	EC
TDS	
Chloride	Chloride
Alumiunum	Alumiunum
Arsenic	Arsenic
Barium	Barium
Boron	Boron
Cadmium	Cadmium
Chromium	Chromium
Copper	Copper
Iron	Iron
Lead	Lead
Mercury	Mercury
Molybdenum	Molybdenum
Nickel	Nickel
Selenium	Selenium
Silver	Silver
Zinc	Zinc
Phosphorous (Total)	
TSS	TSS
BOD	BOD

ND =	0	Primary to Aeration	WWTF-02
		Aeration Discharge	WWTF-03
		Secondary Effluent	WWTF-04
		Aeration to Digester	WWTF-05
		Midway of Disgester	WWTF-06
		Digester to Drying Bed	WWTF-07

		12/2/2015	3/23/2016	5/10/2016	12/3/2015	3/24/2016	5/11/2016	12/3/2015	3/25/2016	5/11/2016	12/8/2015	3/29/2016
		WWTF-02	WWTF-02	WWTF-02	WWTF-03	WWTF-03	WWTF-03	WWTF-05	WWTF-05	WWTF-05	WWTF-06	WWTF-06
Test Method 624											ND	ND
Chloroforr	ug/L	1.6	0.45	1.2	0.85			0.59				
Methylene	ug/L			15		1.4						
Toluene	ug/L	2.1	2.4	2.8								
1,4-Dichlo	ug/L											
Ethylbenz	ug/L											
Test Method 608												
Test Method 625					ND			ND				ND
m,p-xylene	ug/L											
o-xylene	ug/L											
Xylenes	ug/L											
4-methylp	ug/L	4.5							1.6		2.6	0
Benzyl alc	ug/L											
Benzoic A	ug/L											
Bis (2-eth	ug/L											
Diethylpht	ug/L											
Phenol	ug/L	1.5				0.99			3.3	1.8	1.2	0
2,6-dinitro	ug/L											
Ammonia	mg/L	18	14	9.8	4.2	8	6.3	18	27	22	9.6	14
BOD	mg/L	54	50	46	340	460	420	1300	2100	410	660	560
TSS	mg/L	21	32	45	1200	2000	2300	6400	6400	2700	5400	6200
EC	uS/cm	940	840	1000	860	790	770	920	830	770	930	850
Nitrate as	mg/L	ND	ND	ND	15	12	7.8	11	0.0094	8.9	16	24
Cyanide (ˋ	ug/L	4	0	3.3	7.2	16	4.3	48	44	22	38	0
O&G (HEI	mg/L	6.4		12	4	1.8	3.2	16	21	11	3.8	8.5
MBAS	mg/L	3	4.8	3.6	0.34	0.56	0	1.4	1.6	0.41	1.6	1
Phosphoru	mg/L	1.4	4	3.5	28	36	42	130	130	110	87	87
Chloride	mg/L	60	44	100	53	42	42	52	42	42	56	39
Aluminum	mg/L	0.39	0.34	0.83	11	21	25	54	88	57	53	67
Arsenic	mg/L	0.0095	0.0086	0.0024	0.042	0.03	0.033	0.15	0.1	0.085	0.1	0.082
Barium	mg/L	0.076	0.065	0.086	1.4	1.7	2.1	6.4	6.7	4.7	4.5	4.8
Boron	mg/L	0.13	0.14	0.43	0.18	0.21	0.22	0.4	0.45	0.35	0.29	0.34
Cadmium	mg/L	0.0008	0.00071	0.00067	0.0065	0.013	0.016	0.029	0.054	0.036	0.047	0.049
Chromium	mg/L	0.0054	0.0075	0.0076	0.16	0.19	0.25	0.79	0.78	0.56	0.76	0.65
Copper	mg/L	0.024	0.02	0.035	0.63	0.93	1.1	3.3	4.1	2.6	3.6	3.7
Iron	mg/L	0.49	0.43	1	10	21	24	42	73	50	53	65
Lead	mg/L	0.0025	ND	0.0093	0.05	0.11	0.13	0.24	0.43	0.3	0.27	0.39
Molybden	mg/L	0.035	0.061	0.045	0.048	0.074	0.059	0.093	0.12	0.081	0.19	0.14
Nickel	mg/L	0.0029	0.005	0.0045	0.021	0.045	0.052	0.1	0.17	0.12	0.17	0.18
Selenium	mg/L	0.0064	0.0069	0.0099	0.016	0.029	0.027	0.049	0.034	0.034	0.03	0.034
Silver	mg/L	ND	ND	ND	ND	ND	ND	0.0062	0.0095	0.0043	0.014	0.0091
Zinc	mg/L	0.1	0.1	0.17	0.96	1.9	2.1	4.4	8.1	4.8	7.4	8.8
Mercury	ug/L	ND	0.046	0.098	0.6	1.3	1.3	ND	2.6	1.4	2.5	3.5

		12/4/2015	5/13/2016	6/14/2016	6/15/2016	6/15/2016
		WWTF-07	WWTF-07	WWTF-02	WWTF-03	WWTF-05
Test Method 624		ND			ND	ND
Chloroforr	ug/L			2.2		
Methylene	ug/L			1.5		
Toluene	ug/L		1.1	1.9		
1,4-Dichlo	ug/L					
Ethylbenz	ug/L					
Test Method 608						
Test Method 625				ND	ND	
m,p-xylen	ug/L					
o-xylene	ug/L					
Xylenes	ug/L					
4-methylp	ug/L	23	6.9			
Benzyl alc	ug/L					
Benzoic A	ug/L					
Bis (2-eth	ug/L					
Diethylpht	ug/L					
Phenol	ug/L	4.7	1.9			1.6
2,6-dinitro	ug/L					
Ammonia	mg/L	40	28	11	8.6	51
BOD	mg/L	2400	1300	31	340	1600
TSS	mg/L	24000	17000	21	2400	14000
EC	uS/cm	1000	920	920	830	870
Nitrate as	mg/L	ND	6.6	ND	9	ND
Cyanide (	ug/L	67	48	ND	ND	41
O&G (HEI	mg/L	320	62	7.1	1.8	44
MBAS	mg/L	12	1.1	1.6	ND	3.8
Phosphor	mg/L	370	94	3	30	200
Chloride	mg/L	49	46	91	78	75
Aluminum	mg/L	220	160	0.37	24	170
Arsenic	mg/L	0.34	0.21	0.0053	0.028	0.15
Barium	mg/L	21	13	0.083	1.8	14
Boron	mg/L	0.83	0.57	0.14	0.24	0.81
Cadmium	mg/L	0.21	0.14	0.00092	0.017	0.12
Chromium	mg/L	3.3	1.7	0.0054	0.24	1.8
Copper	mg/L	16	10	0.013	1	7.5
Iron	mg/L	200	150	0.39	21	150
Lead	mg/L	1.2	1	ND	0.1	0.76
Molybden	mg/L	0.46	0.26	0.0081	0.026	0.14
Nickel	mg/L	0.65	0.46	0.0041	0.05	0.37
Selenium	mg/L	0.11	0.062	0.011	0.014	0.11
Silver	mg/L	0.052	0.022	ND	0.0027	0.016
Zinc	mg/L	33	23	0.097	2.2	15
Mercury	ug/L	3.9	ND	0.074	2	0.18

Test Method 624									
Chloroforr	ug/L								
Methylene	ug/L								
Toluene	ug/L								
1,4-Dichlo	ug/L								
Ethylbenz	ug/L								
Test Method 608									
Test Method 625									
m,p-xylen	ug/L								
o-xylene	ug/L								
Xylenes	ug/L								
4-methylp	ug/L								
Benzyl alc	ug/L								
Benzoic A	ug/L								
Bis (2-eth	ug/L								
Diethylpht	ug/L								
Phenol	ug/L								
2,6-dinitro	ug/L								
Ammonia	mg/L								
BOD	mg/L								
TSS	mg/L								
EC	uS/cm								
Nitrate as	mg/L								
Cyanide ('	ug/L								
O&G (HEI	mg/L								
MBAS	mg/L								
Phosphor	mg/L								
Chloride	mg/L								
Aluminum	mg/L								
Arsenic	mg/L								
Barium	mg/L								
Boron	mg/L								
Cadmium	mg/L								
Chromium	mg/L								
Copper	mg/L								
Iron	mg/L								
Lead	mg/L								
Molybden	mg/L								
Nickel	mg/L								
Selenium	mg/L								
Silver	mg/L								
Zinc	mg/L								
Mercury	ug/L								

Test Method 624											
Chloroforr	ug/L										
Methylene	ug/L										
Toluene	ug/L										
1,4-Dichlo	ug/L										
Ethylbenz	ug/L										
Test Method 608											
Test Method 625											
m,p-xylen	ug/L										
o-xylene	ug/L										
Xylenes	ug/L										
4-methylp	ug/L										
Benzyl alc	ug/L										
Benzoic A	ug/L										
Bis (2-eth	ug/L										
Diethylpht	ug/L										
Phenol	ug/L										
2,6-dinitro	ug/L										
Ammonia	mg/L										
BOD	mg/L										
TSS	mg/L										
EC	uS/cm										
Nitrate as	mg/L										
Cyanide ('	ug/L										
O&G (HEI	mg/L										
MBAS	mg/L										
Phosphor	mg/L										
Chloride	mg/L										
Aluminum	mg/L										
Arsenic	mg/L										
Barium	mg/L										
Boron	mg/L										
Cadmium	mg/L										
Chromiun	mg/L										
Copper	mg/L										
Iron	mg/L										
Lead	mg/L										
Molybden	mg/L										
Nickel	mg/L										
Selenium	mg/L										
Silver	mg/L										
Zinc	mg/L										
Mercury	ug/L										

Test Method 624										
Chloroforr	ug/L									
Methylene	ug/L									
Toluene	ug/L									
1,4-Dichlo	ug/L									
Ethylbenz	ug/L									
Test Method 608										
Test Method 625										
m,p-xylen	ug/L									
o-xylene	ug/L									
Xylenes	ug/L									
4-methylp	ug/L									
Benzyl alc	ug/L									
Benzoic A	ug/L									
Bis (2-eth	ug/L									
Diethylpht	ug/L									
Phenol	ug/L									
2,6-dinitro	ug/L									
Ammonia	mg/L									
BOD	mg/L									
TSS	mg/L									
EC	uS/cm									
Nitrate as	mg/L									
Cyanide ('	ug/L									
O&G (HEI	mg/L									
MBAS	mg/L									
Phosphoru	mg/L									
Chloride	mg/L									
Aluminum	mg/L									
Arsenic	mg/L									
Barium	mg/L									
Boron	mg/L									
Cadmium	mg/L									
Chromium	mg/L									
Copper	mg/L									
Iron	mg/L									
Lead	mg/L									
Molybden	mg/L									
Nickel	mg/L									
Selenium	mg/L									
Silver	mg/L									
Zinc	mg/L									
Mercury	ug/L									

IU Allocation Calcs — Use 80 % of available MAIL

#	IU Name	Flow (mgd)
1	Advanced Food Products	0.089
2	ATC Plastics	0.0003
3	Basic Chemical Solutions	0.003
4	California Dairies	1.829
5	JM Eagle	0.011
6	Josten's Printing and Publishing	0.014
7	Kawneer	0.006
8	Mission Uniform and Linen	0.047
9	Pregis Innovative Packaging	0.002
10	Provision Food Company	0.24
11	Visalia Custom Chrome	0.0003
12	Voltage Multipliers	0.034
13	Western Milling	0.005
	TOTAL	2.2806

CADMIUM

Calculated MAIL 0.01348528 lb/day
Uncontrolled Source Concentratic 0.00026409 mg/L

Contributing IUs	Flow (mgd)
3 Basic Chemical Solutions	0.003
6 Josten's Printing and Publishing	0.014
8 Mission Uniform and Linen	0.047
11 Visalia Custom Chrome	0.0003
Total	0.0643

Non-contributing Ius	Flow (mgd)
1 Advanced Food Produ	0.089
2 ATC Plastics	0.0003
4 California Dairies	1.829
5 JM Eagle	0.011
7 Kawneer	0.006
9 Pregis Innovative Pac	0.002
10 Provision Food Comp	0.24
11 Visalia Custom Chrom	0.0003
12 Voltage Multipliers	0.034
13 Western Milling	0.005
Total	2.2166

IU Allocation Limit 0.01 mg/L

Loading 0.004882 lb/day

CHROMIUM

Calculated MAIL 0.09076178 lb/day
Uncontrolled Source Concentratic 0.006 mg/L

Contributing IUs	Flow (mgd)
3 Basic Chemical Solutions	0.003
6 Josten's Printing and Publishing	0.014
7 Kawneer	0.006
8 Mission Uniform and Linen	0.047
11 Visalia Custom Chrome	0.0003
13 Western Milling	0.005
Total	0.0753

Non-contributing Ius	Flow (mgd)
1 Advanced Food Produ	0.089
2 ATC Plastics	0.0003
4 California Dairies	1.829
5 JM Eagle	0.011
9 Pregis Innovative Pac	0.002
10 Provision Food Comp	0.24
12 Voltage Multipliers	0.034
Total	2.2053

IU Allocation Limit -0.06 mg/L

Loading 0.110353 lb/day

COPPER

Calculated MAIL	0.15199054	lb/day
Uncontrolled Source Concentratic	0.01709091	mg/L

Contributing IUs	Flow (mgd)	Non-contributing Ius	Flow (mgd)
2 ATC Plastics	0.0003	1 Advanced Food Produ	0.089
3 Basic Chemical Solutions	0.003	4 California Dairies	1.829
5 JM Eagle	0.011	7 Kawneer	0.006
6 Josten's Printing and Publishing	0.014	10 Provision Food Compa	0.24
8 Mission Uniform and Linen	0.047		
9 Pregis Innovative Packaging	0.002	Total	2.164
11 Visalia Custom Chrome	0.0003		
12 Voltage Multipliers	0.034	Loading	0.308453 lb/day
13 Western Milling	0.005		
Total	0.1166		

IU Allocation Limit -0.19 mg/L

CYANIDE

Calculated MAIL	0.04025581	lb/day
Uncontrolled Source Concentratic	0.006545	mg/L

Contributing IUs	Flow (mgd)	Non-contributing Ius	Flow (mgd)
3 Basic Chemical Solutions	0.003	1 Advanced Food Produ	0.089
11 Visalia Custom Chrome	0.0003	2 ATC Plastics	0.0003
		4 California Dairies	1.829
		5 JM Eagle	0.011
		6 Josten's Printing and	0.014
		7 Kawneer	0.006
		8 Mission Uniform and L	0.047
		9 Pregis Innovative Pac	0.002
		10 Provision Food Compa	0.24
		12 Voltage Multipliers	0.034
		13 Western Milling	0.005
Total	0.0033	Total	2.2773
		Loading	0.124307 lb/day

IU Allocation Limit -3.35 mg/L

LEAD

Calculated MAIL	0.01148438	lb/day
Uncontrolled Source Concentratio	0.00266364	mg/L

Contributing IUs	Flow (mgd)	Non-contributing Ius	Flow (mgd)
2 ATC Plastics	0.0003	1 Advanced Food Produ	0.089
3 Basic Chemical Solutions	0.003	4 California Dairies	1.829
6 Josten's Printing and Publishing	0.014	5 JM Eagle	0.011
8 Mission Uniform and Linen	0.047	7 Kawneer	0.006
11 Visalia Custom Chrome	0.0003	9 Pregis Innovative Pac	0.002
12 Voltage Multipliers	0.034	10 Provision Food Compa	0.24
		13 Western Milling	0.005
Total	0.0986	Total	2.182
IU Allocation Limit	**-0.05 mg/L**	Loading	0.048473 lb/day

MERCURY

Calculated MAIL	0.00419525	lb/day
Uncontrolled Source Concentratio	0.00033014	mg/L

Contributing IUs	Flow (mgd)	Non-contributing Ius	Flow (mgd)
1 Advanced Food Products	0.089	2 ATC Plastics	0.0003
3 Basic Chemical Solutions	0.003	7 Kawneer	0.006
5 JM Eagle	0.011	8 Mission Uniform and L	0.047
6 Josten's Printing and Publishing	0.014	9 Pregis Innovative Pac	0.002
10 Provision Food Company	0.24	11 Visalia Custom Chrom	0.0003
		12 Voltage Multipliers	0.034
		13 Western Milling	0.005
		4 California Dairies	1.829
Total	0.357	Total	1.9236
IU Allocation Limit	**0.00 mg/L**	Loading	0.005296 lb/day

NICKEL

Calculated MAIL	0.24839648	lb/day
Uncontrolled Source Concentratio	0.00364857	mg/L

Contributing IUs	Flow (mgd)	Non-contributing Ius	Flow (mgd)
2 ATC Plastics	0.0003	1 Advanced Food Produ	0.089
3 Basic Chemical Solutions	0.003	4 California Dairies	1.829
6 Josten's Printing and Publishing	0.014	5 JM Eagle	0.011
7 Kawneer	0.006	9 Pregis Innovative Pac	0.002
8 Mission Uniform and Linen	0.047	10 Provision Food Compa	0.24
11 Visalia Custom Chrome	0.0003		
12 Voltage Multipliers	0.034		
13 Western Milling	0.005		
Total	0.1096	Total	2.171

IU Allocation Limit 0.15 mg/L

Loading 0.066062 lb/day

SILVER

Calculated MAIL	0.27115563	lb/day
Uncontrolled Source Concentratio	0.00005	mg/L

	Contributing IUs	Flow (mgd)	Mass (lb/day	Non-contributing Ius	Flow (mgd)
	3 Basic Chemical Solutions	0.003		1 Advanced Food Produ	0.089
	7 Kawneer	0.006		2 ATC Plastics	0.0003
4 mg/L	6 Josten's Printing and Publishing		0.46704	4 California Dairies	1.829
	8 Mission Uniform and Linen	0.047		5 JM Eagle	0.011
	11 Visalia Custom Chrome	0.0003		9 Pregis Innovative Pac	0.002
				10 Provision Food Compa	0.24
1 mg/L	12 Voltage Multipliers		0.28356	13 Western Milling	0.005
	Total	0.0563		Total	2.1763

IU Allocation Limit -1.14 mg/L

Loading 0.000908 lb/day

ZINC

Calculated MAIL	0.580984	lb/day
Uncontrolled Source Concentratic	0.07747368	mg/L

Contributing IUs		Flow (mgd)	Non-contributing Ius		Flow (mgd)
2	ATC Plastics	0.0003	1	Advanced Food Produ	0.089
3	Basic Chemical Solutions	0.003	4	California Dairies	1.829
6	Josten's Printing and Publishing	0.014	5	JM Eagle	0.011
8	Mission Uniform and Linen	0.047	7	Kawneer	0.006
11	Visalia Custom Chrome	0.0003	9	Pregis Innovative Pac	0.002
13	Western Milling	0.005	10	Provision Food Compa	0.24
			12	Voltage Multipliers	0.034
	Total	0.0696		Total	2.211

IU Allocation Limit -1.66 mg/L

Loading 1.428595 lb/day

LOCAL LIMITS

Pollutant	Current ppm	2016 Calculated ppm*	Proposed ppm	Notes	Can SIU meet new limits?	Can non-SIU meet new limits?	
Aluminum	5	5.8	5		Yes	No	Aluminum
Arsenic	5	0.025	0.025		Yes	Yes	Arsenic
Barium	10	Not needed	Remove	No WQS	Yes	Yes	Barium
Benzene	0.02	Not needed	0.02	Need more data	Yes	Yes	Benzene
Boron	8	1.33	1.33	Can be removed.	Yes	Yes	Boron
Cadmium	0.1	0.01	0.01	Can be removed.	Yes	No	Cadmium
Chromium	5	0.73	0.73	Can be removed.	Yes	Yes	Chromium
Copper	5	0.08	0.08		Yes	No	Copper
Iron	1	Not needed	1	No WQS	Yes	No	Iron
Lead	5	0.12	0.12	Can be removed.	Yes	Yes	Lead
Nickel	5	0.19	0.19	Can be removed.	Yes	Yes	Nickel
Phenols	1	Not needed	1	Need more data	Yes	Yes	Phenols
Mercury	0.2	0.004	0.004		Yes	Yes	Mercury
Selenium	1	0.02	0.02		Yes	Yes	Selenium
Silver	5	1.89	1.89	Can be removed.	Yes	Yes	Silver
Zinc	5	0.17	0.17		Yes	No	Zinc
BOD	1000	1015	1000		Yes	Yes	BOD
TSS	1000	511	511		Yes	Yes	TSS
Ammonia		3.1	3.1	New limit	Yes	No	Ammonia
O&G		200	200	New limit	Yes	Yes	O&G
EC		1086	1086		No	No	EC
MBAS		1.7	1.7	New limit	Yes	No	MBAS

* Using Uniform Allocation

Appendix D: Example Local Limits Report

(City of Davis)

City of Davis Local Limits

Verification Report

Discharger:	City of Davis NPDES Permit No. CA0079049 Yolo County
Location:	45400 County Road 28H, Davis, CA 95616
Date:	September 26, 2017
Reviewed By:	Yatasha Moore, EPA Contractor

Contents

Attachments

1. Executive Summary

Central Valley Regional Water Quality Control Board (Water Board) staff conducted a review of the City of Davis (City) *Local Limits Report* (local limits report) dated November 2015. The City was issued a National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079049 (Order No. R5-2013-0127-01) in 2013. The NPDES Permit required the City to evaluate the need to revise its local limits. This verification report presents the conclusions of the review of the City's local limits report.

The City owns and operates the Davis Wastewater Treatment Plant (WWTP). The City's WWTP receives wastewater from the City and unincorporated areas in Yolo County. The WWTP has an average dry weather design capacity of 7.5 million gallons per day (MGD). The WWTP treatment consists of mechanical bar screening, aerated grit removal, primary sedimentation, biological treatment through three facultative ponds, two aerated ponds, overland flow treatment, disinfection, and dechlorination. Per the City's local limits report, the City is currently upgrading the WWTP, including converting the current treatment pond treatment system to a conventional activated sludge process and adding filtration, disinfection, mechanical solids thickening, dewatering, and storage facilities. The upgrades are scheduled to be completed by October 2017.

Based on the local limits report reviewed, the reviewer made the following findings:

- It is recommended that Table 1 of the local limits report be revised to reflect that the WWTP has NPDES permit effluent limits for cadmium and selenium. (Section 2)

- It is recommended that the local limits report document the rationale for not considering electrical conductivity, diazinon, and chlorpyrifos pollutants of concern. (Section 2)

- It is recommended that the maximum pH limit be lower than 12.5 standard units. (Section 3)

- The City is required to provide documentation showing that the current total suspended solids (TSS) local limit, which is proposed to be retained, is protective of the WWTP. (Section 4)

- The City is required to provide documentation showing that the current nickel local limit is protective of the WWTP. (Section 5)

2. Identification of Pollutants of Concern

The local limits report details a screening process from the 2004 *Local Limits Development Guidance* manual to determine which parameters are pollutants of concern. This screening process evaluates the WWTP sampling data to determine the pollutants of concern.

Based on the screening process, Table 1 of the City's local limits report includes cadmium and selenium as pollutants of concern. However, the Table does not state that these two parameters have NPDES permit effluent limitations. Because the City's NPDES permit contains effluent limits for both parameters for Discharge Point No. 001, it is recommended that Table 1 be revised to reflect that the City has NPDES limits for cadmium and selenium.

Additionally, the City has NPDES effluent limits for electrical conductivity, diazinon, and chlorpyrifos. However, these parameters were not evaluated as pollutants of concern. Because there are NPDES permit effluent limits for these parameters, it is recommended that the local limits report include a rationale for why electrical conductivity, diazinon, and chlorpyrifos are not pollutants of concern.

3. pH

Section 4.2.2 of the local limits report states that the upper pH local limit will remain at 12.5 standard units. However, this is the same pH level at which a discharge is subject to the hazardous waste reporting requirements in 40 CFR Part 403.12(p). If the City's intention is to prohibit the discharge of wastes that are subject to this reporting requirement, it is recommended that the maximum pH limit be lower than 12.5 standard units.

4. Total Suspended Solids

Section 6 of the local limits report states that even though both a maximum allowable headworks loading and a maximum allowable industrial loading (MAIL) could be calculated for total suspended solids (TSS), "industrial user compliance with the local limit for TSS will be infeasible." Additionally, the City plans to maintain the current local limit until upgrades to the WWTP are completed. However, local limits calculations should be protective of the WWTP and the collection system and do not consider potential compliance by the industrial users. Because the calculated MAIL indicates that the TSS loadings from industrial users has the potential to cause the WWTP to exceed the design capacity resulting in effluent violations, the City is required to either provide documentation that the current TSS local limit is protective of the WWTP or allocate the MAIL in such a way that limits are protective of the WWTP and the collection system. In order to relieve the compliance burden on industrial users, the MAIL could be allocated on a contributory basis.

5. Nickel

Section 6 of the local limits report states that a MAIL for nickel was not calculated because the WWTP appears to be the source of nickel. Additionally, the City is planning to maintain the current nickel local limit until the WWTP upgrade is completed. The City's Local Limits Sampling Plan (included as Appendix A of the local limits report), does not require effluent sampling to be conducted one detention time after the influent sampling. Therefore, influent and effluent sampling results cannot be paired. The City should take appropriate actions to determine if failure to pair influent and effluent data is the source of the negative removal efficiency for nickel. Additionally, the City is required to provide documentation showing that the current nickel local limit is protective of the WWTP and the collection system.

Attachment A City of Davis Local Limits Report (November 2015)

N O V E M B E R   2 0 1 5

C I T Y   O F   D A V I S

Local Limits Report

Prepared by

LARRY WALKER ASSOCIATES

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LIST OF ACRONYMS

AHL	Allowable headworks loading
BOD	Biochemical Oxygen Demand
CCR	California Code of Regulations
CFR	Code of Federal Regulations
GAC	Granulated activated carbon
MAHL	Maximum allowable headworks loading
MAIL	Maximum allowable industrial loading
MDL	Method detection limit
MGD	Million gallons per day
NIOSH	National Institute for Occupational Safety and Health
NPDES	National Pollutant Discharge Elimination System
POC	Pollutant of concern
POTW	Publicly-owned treatment works
QA/QC	Quality assurance/quality control
RL	Reporting limit
ROS	Regression on order statistics
STLC	Soluble Threshold Limit Concentration
TSS	Total suspended solids
USEPA	United States Environmental Protection Agency
WWTP	Wastewater Treatment Plant

SECTION 1. INTRODUCTION

The City of Davis (City) owns and operates the Wastewater Treatment Plant (Plant), which treats domestic, commercial, and industrial wastewater from the City of Davis and unincorporated areas in Yolo County. The Plant is a secondary-level treatment facility that has an average dry weather design capacity of 7.5 million gallons per day (MGD). Wastewater treatment consists of mechanical bar screening, aerated grit removal, primary sedimentation, biological treatment through three facultative ponds, two aerated ponds, overland flow treatment, and disinfection and dechlorination. During the summer months, final effluent is discharge to Willow Slough Bypass at Discharge Point No. 001. During the winter months, effluent is discharged to the Conaway Ranch Toe Drain via restoration wetlands at Discharge Point No. 002.

Sludge is anaerobically digested and dewatered in sludge lagoons. Dried biosolids are hauled to the Yolo County Landfill for disposal and used as alternative daily cover.

The City is currently renovating and upgrading the Plant. The Plant improvement will include converting the current pond treatment system to a conventional activated sludge process with biological reactor vessels and secondary clarifiers, addition of filtration facilities, addition of disinfection facilities, and mechanical solids thickening, dewatering, and storage facilities. The existing ponds will be used for storage ponds and the overland flow system will no longer be utilized. The City anticipates completing these upgrades by October 2017.

The City operates under the authority of the City of Davis Municipal Code and regulates wastewater through Chapter 33 of the Municipal Code. Current waste discharge requirements impose pretreatment provisions that require implementation of regulatory controls necessary to enact Title 40 of the Code of Federal Regulations (40 CFR) Part 403 requirements. There are currently four significant industrial users, which includes two categorical industrial users, in the Plant service area. The City also tracks food service establishments, dentists, and commercial car washes that discharge non-domestic wastewater to the Plant.

The City is required to develop and implement local limits as part of the National Pretreatment Program (40 CFR Part 403) and its National Pollutant Discharge Elimination System (NPDES) permit (CA0079049, Order No. R5-2013-0127-001), which was adopted by the Central Valley Regional Water Quality Control Board (Regional Water Board) in October 2013, and amended by Order R5-2014-0122 in October 2014.

Local limits development, implementation, and review are part of the City's Pretreatment Program, which involves strategies to control discharge of conventional and toxic pollutants entering the Plant from industrial dischargers (i.e., controllable sources). The objectives of the City's Pretreatment Program are to prevent:

- Interference and/or upset with Plant treatment operations;
- Pass-through of conventional and toxic pollutants;

- Harm to Plant and/or collection system infrastructure;
- Contamination of municipal biosolids; and
- Worker exposure to chemical hazards.

Procedures for deriving local limits are described in the United States Environmental Protection Agency (USEPA) *Local Limits Development Guidance*, 2004 (Local Limits Guidance), which include the following steps:

- Identifying pollutants of concern (POCs);
- Monitoring POCs at various sampling locations;
- Deriving maximum allowable headworks loading (MAHL);
- Calculating maximum allowable industrial loading (MAIL); and
- Developing allocation method of permitted dischargers.

The City developed its current local limits in 1993 using the procedures and recommendations presented in the 1987 *USEPA Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program* (1987 Local Limits Guidance). In 2013, the City adopted new local limits in Section 33.03.080 of the City of Davis Municipal Code for the following pollutants: 1,2-dibromoethane; 1,2-dibromo-3-chloropropane; benzene; carbon tetrachloride; chlorobenzene; 1,2-dichloroethane; 1,2-dichloropropane; 1,3-dichloropropane; and 1,2,3-trichloropropane. The City currently has local limits, in addition to those listed above, for cadmium, chromium (hexavalent), copper, lead, mercury, nickel, selenium, silver, zinc, bromomethane, chloroform, chloromethane, 1,4-dichlorobromomethane, methylene chloride, tetrachloroethylene, toluene, 1,1,1-trichloroethane, bis(2-ethylhexyl)phthalate, tributyltin, biochemical oxygen demand (BOD), and total suspended solids (TSS).

The purpose of this report is to present updated local limits developed to protect Plant treatment processes, meet current NPDES effluent limitations, protect biosolids quality, and protect worker health and safety. The major elements of this report include the following:

- Local limits development;
- Maximum allowable headworks loadings;
- Maximum allowable industrial loadings;
- Public participation; and
- Next steps.

SECTION 2. LOCAL LIMITS DEVELOPMENT

Local limits development consists of identifying pollutants that need to be addressed, collecting sufficient monitoring data to support calculation of local limits, and determining the appropriate local limits. The first two parts of local limits development are addressed in this section of the report and the third part is addressed in the following section.

2.1 Pollutants of Concern

The first step in the local limits development process involved identifying POCs that may prevent the City's Pretreatment Program from achieving its objectives. Local Limits Guidance identifies 15 national POCs that are often found in publicly-owned treatment works (POTW) effluent and biosolids. These national POCs are cadmium, chromium, copper, lead, nickel, zinc, arsenic, cyanide, silver, mercury, molybdenum, selenium, BOD, TSS, and ammonia as N.

A preliminary evaluation of other Plant-specific POCs was conducted during the development of the *City of Davis Local Limits Sampling Plan* (September 2014) (see **Appendix A**). The Plant-specific POCs were updated following Local Limits Monitoring. Potential POCs were identified using the following criteria:

1. The pollutant is limited through the City's NPDES permit, California Code of Regulations (CCR) biosolids restrictions, treatment system design capacities, treatment process inhibition levels, or wastewater collection system concerns (corrosion, headspace toxicity, etc.); and
2. One or more of the following is true:
    a. At least one detected data point was obtained during regular monitoring between January 2012 through May 2015, including the Local Limits Monitoring Program; or
    b. The POC was detected in the effluent discharge of one or more of the City's industrial users; or
    c. The USEPA Matrix of Pollutant Occurrence (**Appendix B**) indicates that a given pollutant is likely to be discharged in a significant quantity from one or more of the City's industrial users.

A summary of the POCs is presented in **Table 1**.

Table 1. City of Davis Wastewater Treatment Plant Pollutants of Concern

Pollutant	National POCs	NPDES Permit Effluent Limitations	Treatment Process Inhibition	Biosolids Restrictions	Detected During Monitoring (1,2)
Conventional					
Ammonia as N	X	X	X		C, I, P, E, D
Biochemical oxygen demand	X	X	X		C, I, E
Sulfate as SO_4			X		I, P, E
Sulfide as S			X		C, I, P
Surfactants (MBAS)			X		I, P, E
Total suspended solids	X	X	X		C, I, E
Metals (Total Recoverable)					
Antimony				X	I, E
Arsenic	X		X	X	C, I, P, E, D
Barium				X	I, E
Beryllium				X	
Cadmium	X		X	X	C, I, P, E, D
Chromium	X		X	X	C, I, P, E, D
Cobalt				X	I, E
Copper	X	X	X	X	C, I, P, E, D
Lead	X		X	X	C, I, P, E, D
Mercury	X	X	X	X	C, I, P, E, D
Molybdenum	X			X	
Nickel	X	X	X	X	C, I, P, E, D
Selenium	X			X	C, I, E, D
Silver	X		X	X	C, I, P, E, D
Thallium				X	
Vanadium				X	I, E
Zinc	X		X	X	C, I, P, E, D
Volatile Trace Organics					
1,2-Dichlorobenzene			X		
1,3-Dichlorobenzene			X		
1,4-Dichlorobenzene			X		
Acrylonitrile			X		
Benzene			X		
Carbon tetrachloride			X		

Pollutant	National POCs	NPDES Permit Effluent Limitations	Treatment Process Inhibition	Biosolids Restrictions	Detected During Monitoring (1,2)
Chlorobenzene			X		
Chloroform			X		
Ethylbenzene			X		
Methyl chloride			X		
Tetrachloroethylene			X		
Toluene			X		
Trichloroethylene			X		
Semi- and Non-volatile Trace Organics					
1,2-Diphenylhydrazine			X		
2-Chlorophenol			X		
2,4-Dichlorophenol			X		
2,4-Dimethylphenol			X		
2,4-Dinitrophenol			X		
2,4-Dinitrotoluene			X		
2,4,6-Trichlorophenol			X		
Anthracene			X		
Hexachlorobenzene			X		
Naphthalene			X		
Nitrobenzene			X		
Pentachlorophenol			X	X	
Phenanthrene			X		
Phenol			X		I
Chlorinated Pesticides					
4,4’-DDD				X	
4,4’-DDE				X	
4,4’-DDT				X	
Aldrin				X	
gamma-BHC				X	
Chlordane				X	
Endrin				X	
Heptachlor				X	
Methoxychlor				X	
PCBs		X		X	

Pollutant	National POCs	NPDES Permit Effluent Limitations	Treatment Process Inhibition	Biosolids Restrictions	Detected During Monitoring (1,2)
Toxaphene				X	
Other Toxics					
Chlorpyrifos		X			
Cyanide	X	X	X		C, I, P, E, D
Diazinon		X			

(1) Detected data include estimated values (sometimes referred to as "J-flagged" or "detected but not quantified [DNQ]" values). If there is no designation in the column, then there were no detected data for that pollutant.

(2) C = collection system; I = Plant influent; P = Plant primary treatment effluent; F = Plant final effluent; D = Plant anaerobic digester.

2.2 Local Limits Monitoring

In order to develop a technically sound and supportable strategy to control POCs entering into and within the Plant, it is necessary to analyze water quality data. The three areas that are monitored to collect data for local limits development include the following:

- Collection system;
- Plant; and
- Biosolids.

First, it is important to determine the distribution of controllable and non-controllable pollutant sources. Uncontrollable pollutant sources (non-industrial users such as residential, commercial, inflow and infiltration, drinking water, and storm water) typically contribute the majority of wastewater flow to a treatment plant, and can result in significant pollutant loadings. However, for most pollutants, uncontrollable sources contain lower concentrations compared to industrial wastewater. In order to establish pollutant levels from uncontrollable sources, the collection system was monitored to isolate non-industrial dischargers or non-industrial wastewater inputs. For this local limits effort, the City conducted sampling at one collection system site (M-16 #6), which is located northeast of the intersection of Pole Line Road and County Road 28H, that services the majority of the City of Davis and does not include any industrial users.

Second, in-plant removal efficiencies are required in order to calculate the maximum headworks pollutant loadings that can be effectively treated without overloading Plant design treatment capacities, upsetting treatment processes, or exceeding effluent water or biosolids quality limitations. In order to obtain this information, water quality data were collected at the Plant influent, primary treatment effluent, anaerobic sludge digester, and final effluent to calculate appropriate in-plant removal efficiencies.

Finally, biosolids quality must be assessed because biosolids disposal regulations require different levels of biosolids quality depending on disposal practices. Biosolids must be monitored to determine the presence of any POCs and to derive local limits that will protect biosolids handling processes and quality. Biosolids quality data were not collected as part of the Local Limits Monitoring Program. Instead, data collected by the City as part of its regular biosolids monitoring requirements were used.

The *Local Limits Sampling Plan* provides detailed information about the City's Local Limits Monitoring Program. Data collected from the City's Local Limits Monitoring Program were supplemented with all relevant monitoring data collected between June 2013 and May 2015 by the City as part of its on-going monitoring program and requirements. The Local Limits Monitoring Program efforts are summarized in the following sections:

- Sampling frequency;
- Local limits monitoring results; and
- Data analysis.

2.2.1 Sampling Frequency

To adequately characterize its wastewater, the City initially anticipated collecting samples in November 2014 from the collection system, influent, primary treatment effluent, and anaerobic digester and in December 2014 for final effluent because of the estimated one month hydraulic residence time of the overland flow system. However, a significant precipitation event that occurred after initiation of final effluent sampling in December 2014 resulted in postponing final effluent sampling until May 2015 at which point the City resumed its seasonal effluent discharge to the Willow Slough Bypass.

Monitoring was conducted at the frequencies and locations specified in the *Local Limits Sampling Plan* and provided in **Table 2**. Some pollutants were not required to be sampled at some locations because there were either no environmental restrictions to warrant the sampling or the City had sufficient historic data for use.

Table 2. Local Limits Monitoring Program Sampling Frequency

Location	Consecutive Days of Sampling		
	Conventional	Metals & Cyanide	Organics (1)
Collection System	7	7 (2)	–
Plant Influent	7 (3)	7 (2)	–
Plant Primary Treatment Effluent	7 (4)	7 (5)	–
Plant Final Effluent (Willow Slough Bypass)	7 (6)	7 (2)	–
Plant Anaerobic Digester	2 (7)	2	–
Plant Biosolids	(8)	(8)	–

(1) Monitoring for organics was not conducted as part of the Local Limits Monitoring Program. An evaluation was conducted during the development of the Local Limits Sampling Plan, and summarized in Table 3, to determine if additional sampling for organics was necessary. It was determined in that evaluation that there were sufficient available organics data.

(2) Metals are total recoverable forms of arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, and zinc.

(3) BOD and TSS were not sampled at this location because there were sufficient available historic data.

(4) Only ammonia as N and sulfide were sampled at this location because other conventional pollutants do not have inhibitory effects on activated sludge treatment. Surfactants (MBAS) were determined to not require additional sampling.

(5) Metals are total recoverable forms of arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc.

(6) Only ammonia as N was sampled at this location because there were sufficient available historic data for other conventional pollutants.

(7) Only ammonia as N and sulfide as S were sampled at this location. While sulfate as SO_4 may inhibit anaerobic digestion, it was determined to not require additional sampling.

(8) Biosolids monitoring was not conducted as part of the Local Limits Monitoring Program. NPDES permit-required monitoring data was used for local limits development.

2.2.2 Local Limits Monitoring Results

All Local Limits Monitoring Program sample analyses were conducted by Caltest Analytical Laboratory in Napa, CA. Laboratory reports included analytical results, reporting limits (RLs), and method detection limits (MDLs) along with all laboratory quality assurance/quality control (QA/QC) results. Results below the RL, but above the MDL were qualified as estimated, or “J-flagged”. Results below the MDL were qualified as “non-detect”. Although they were estimated, all monitoring results qualified as “J-flagged” were included in local limits derivation calculations. Summaries of analytical results are presented in **Appendix C**. Original analytical laboratory reports are available upon request.

QA/QC analyses were conducted to ensure analytical data quality. For the Local Limits Monitoring Program, the following QA/QC analyses were initiated:

- Field controls (field log, clean sampling and handling techniques, field blanks, field duplicates);
- Laboratory controls (laboratory duplicates, standard laboratory calibration procedures, matrix spikes/matrix spike duplicates, laboratory control standards, method blanks);
- Sample chain-of-custody; and
- Data verification.

There were minor sampling and QA/QC issues during the local limits monitoring. These sampling and QA/QC issues are discussed in **Appendix E**.

2.2.3 Data Analysis

When possible, data were statistically analyzed using regression-on-order statistics (ROS), which is a method that determines summary statistics for data sets that have non-detect data. The ROS method develops probability plotting positions for each data point (detect and non-detect values) based on an ordering of the data. The log-transform of the data is regressed and fitted with a least squares line to probability plotting positions. Non-detect data points are assigned values for calculation of summary statistics based on their probability plotting positions and the regression line equation. Summary statistics are calculated based on the detected data points and “filled-in” non-detect values. Variance summary statistics are calculated using a Tukey-Jackknife algorithm, which sequentially removes one point from the dataset, runs the analysis, and calculates the variance estimators as the average of each of the “n” runs of data.

The ROS method is limited if there are insufficient data (<20% detected data or too few data points) to perform the analysis. The ROS method is found to provide only small errors for major summary statistics parameters (mean, median, standard deviation, and interquartile range) when less than 100% of the data are detected. It should be noted that unless all data are detected, the ROS method is only an estimation of the data.

In cases where the ROS method could not be used, a surrogate was used to substitute for non-detect results. The three surrogates commonly used (per Local Limits Guidance) are the reporting limit, zero, and one-half the reporting limit. The most conservative approach is to select a surrogate equal to the reporting limit, which assumes that the pollutant concentration is always higher than the actual value. On the other hand, if the surrogate is equal to zero, it assumes that the pollutant concentration is always lower than the actual value. For this derivation of local limits, the one-half of the MDL is used for non-detect data when there were insufficient detected data to use the ROS method.

SECTION 3. MAXIMUM ALLOWABLE HEADWORKS LOADINGS

The MAHL must be calculated for each POC before it is determined if a local limit is necessary for the POC. The MAHL is the maximum pollutant loading that may be received at the Plant headworks and not have the potential to negatively impact the aforementioned City's Pretreatment Program objectives. In this section, the following information is presented:

- Environmental and operational restrictions driving MAHL derivation;
- Pollutants for MAHL derivation;
- Flow measurements;
- Removal efficiency calculations;
- Allowable headworks loading calculations; and
- Need for local limit.

3.1 Environmental and Operational Restrictions Driving MAHL Derivation

Four major factors serve as the basis for MAHL development. These include NPDES permit effluent limitations, biosolids disposal restrictions, treatment process inhibition levels, and treatment facility design capacity. These restrictions are described in this section.

3.1.1 NPDES permit effluent limitations

At present, the City's NPDES permit provides numeric restrictions on effluent discharges for multiple pollutants depending on the season as well as discharge location (i.e., Willow Slough Bypass, Conaway Ranch Toe Drain). The NPDES permit restrictions for the City are presented in Appendix B of this report.

3.1.2 Biosolids restrictions

The City currently disposes of biosolids through landfilling. Restrictions for metals, pesticides, and PCBs exist under CCR Title 26 for POTWs disposing of biosolids in municipal landfills. These biosolids disposal restrictions are presented in Appendix B of this report.

3.1.3 Treatment process inhibition

Treatment process inhibition refers to pollutant levels that will interfere with biological, chemical, and/or physical processes of wastewater treatment, thereby resulting in reduced facility performance and/or upset. Activated sludge and anaerobic sludge digestion inhibition levels from the Local Limits Guidance, which are presented in Appendix B, are used for this analysis.

3.1.4 Plant treatment design capacity

For ammonia as N, BOD, TSS, it is necessary to consider the design capacity of the Plant in formulating the MAHLs. The Plant average daily dry weather design capacities were assumed to be 275 mg/L for BOD and TSS. There is no design capacity loading for ammonia.

3.2 Pollutants for MAHL Derivation

A screening step included in the 1987 Local Limits Guidance, but not included in the 2004 Local Limits Guidance, is a useful tool for determining if a pollutant is a potential POC and warrants undergoing a headworks loading analysis to evaluate the need for developing a local limit. This screening step is particularly useful in determining if it is necessary to conduct a headworks loading analysis for organic pollutants that have treatment process inhibition levels, but may not have other environmental/operational restrictions to drive local limits development. Current standard laboratory detection levels are typically several orders of magnitude lower than the treatment process inhibition thresholds identified in the 2004 Local Limits Guidance. Additionally, most organic pollutants that have treatment process inhibition levels are typically not detected in wastewater, which further justifies that these pollutants be excluded from the headworks loading analysis.

The following screening criteria were used to determine if a pollutant needs to undergo the headworks loading analysis:

- Criterion 1. The maximum concentration of a pollutant in the effluent is more than one-half the allowable concentration required to meet water quality criteria/standards or the maximum sludge concentration is more than one-half the applicable biosolids criteria guidelines;
- Criterion 2. The maximum concentration of the pollutant in a grab sample from the influent is more than one-half the inhibition threshold;
- Criterion 3. The maximum concentration of the pollutant in a composite sample from the influent is more than one-fourth the inhibition threshold; or
- Criterion 4. The maximum concentration of the pollutant in the influent is more than 1/500th of the applicable biosolids use criteria.

Additionally, the following criteria are used to exclude pollutants from Table 1 for which MAHLs and/or collection system-based concentration limits may be inappropriate:

- There are insufficient detected POC data to derive an MAHL; or
- There are no NPDES permit effluent limitations, treatment process inhibition levels, biosolids restrictions, or Plant treatment design capacity to drive the MAHL derivation.

These pollutants are identified in **Table 3** along with the reason(s) for not developing an MAHL or local limit for each pollutant.

Table 3. Pollutants Excluded from the Headworks Loading Analysis/Local Limits Development

Pollutant	Reason for Not Developing MAHL/Local Limit
Conventional	
Sulfate as SO_4	Maximum composite influent concentration (57 mg/L) is less than one-fourth of the anaerobic digestion inhibition threshold (500 mg/L).
Sulfide as S	Maximum grab influent concentration (5.3 mg/L) is less than one-half of the activated sludge inhibition and anaerobic digestion inhibition thresholds (25 and 50 mg/L, respectively).
Surfactants (MBAS)	Maximum influent grab sample concentration (7.0 mg/L) is less than one-half of the activated sludge inhibition threshold (100 mg/L).
Metals (Total Recoverable)	
Antimony	Maximum influent concentration (J0.47 μg/L, or parts per billion [ppb]) is less than 1/500th of applicable biosolids use criteria (500,000 μg/kg, or ppb).
Barium	Maximum influent concentration (130 μg/L) is less than 1/500th of applicable biosolids use criteria (10,000,000 μg/kg).
Beryllium	Maximum influent concentration (<0.09 μg/L) is less than 1/500th of applicable biosolids use criteria (75,000 μg/kg).
Cobalt	Maximum influent concentration (0.56 μg/L) is less than 1/500th of applicable biosolids use criteria (8,000,000 μg/kg).
Molybdenum	Maximum influent concentration (5.2 μg/L) is less than 1/500th of applicable biosolids use criteria (3,500 μg/kg).
Thallium	Maximum influent concentration (<0.05 μg/L) is less than 1/500th of applicable biosolids use criteria (700,000 μg/kg).
Vanadium	Maximum influent concentration (11 μg/L) is less than 1/500th of applicable biosolids use criteria (2,400,000 μg/kg).
Volatile Trace Organics	
1,2-Dichlorobenzene	Maximum influent grab sample concentration (<1.4 μg/L) is significantly less than one-half of the activated sludge and anaerobic digestion inhibition thresholds (5,000 and 230 μg/L, respectively).
1,3-Dichlorobenzene	Maximum influent grab sample concentration (<0.9 μg/L) is significantly less than one-half of the activated sludge inhibition threshold (5,000 μg/L).
1,4-Dichlorobenzene	Maximum influent grab sample concentration (<0.9 μg/L) is significantly less than one-half of the activated sludge and anaerobic digestion inhibition thresholds (5,000 and 1,400 μg/L, respectively).
Acrylonitrile	Maximum influent grab sample concentration (<5 μg/L) is significantly less than one-half of the anaerobic digestion inhibition threshold (5,000 μg/L).
Benzene	Maximum influent grab sample concentration (<0.9 μg/L) is significantly less than one-half of the activated sludge inhibition threshold (100,000 μg/L).
Carbon tetrachloride	Maximum influent grab sample concentration (<0.9 μg/L) is significantly less than one-half of the anaerobic digestion inhibition threshold (2,000 μg/L).
Chlorobenzene	Maximum influent grab sample concentration (<0.9 μg/L) is significantly less

Pollutant	Reason for Not Developing MAHL/Local Limit
	than one-half of the anaerobic digestion inhibition threshold (960 μg/L).
Chloroform	Maximum influent grab sample concentration (<0.95 μg/L) is significantly less than one-half of the anaerobic digestion inhibition threshold (1,000 μg/L).
Ethylbenzene	Maximum influent grab sample concentration (<1.3 μg/L) is significantly less than one-half of the activated sludge inhibition threshold (200,000 μg/L).
Methyl chloride	Maximum influent grab sample concentration (<1.2 μg/L) is significantly less than one-half of the anaerobic digestion inhibition threshold (3,300 μg/L).
Tetrachloroethylene	Maximum influent grab sample concentration (<0.95 μg/L) is significantly less than one-half of the anaerobic digestion inhibition threshold (20,000 μg/L).
Toluene	Maximum influent grab sample concentration (<0.95 μg/L) is significantly less than one-half of the activated sludge inhibition threshold (200,000 μg/L).
Trichloroethylene	Maximum influent grab sample concentration (<1 μg/L) is significantly less than one-half of the anaerobic digestion inhibition threshold (1,000 μg/L).
Semi- and Non-Volatile Trace Organics	
1,2-Diphenylhydrazine	Maximum influent composite sample concentration (<3.5 μg/L) is significantly less than one-fourth of the activated sludge inhibition threshold (5,000 μg/L).
2-Chlorophenol	Maximum influent composite sample concentration (<3.5 μg/L) is significantly less than one-fourth of the activated sludge inhibition threshold (5,000 μg/L).
2,4-Dichlorophenol	Maximum influent composite sample concentration (<4.5 μg/L) is significantly less than one-fourth of the activated sludge inhibition threshold (64,000 μg/L).
2,4-Dimethylphenol	Maximum influent composite sample concentration (<4 μg/L) is significantly less than one-fourth of the activated sludge inhibition threshold (40,000 μg/L).
2,4-Dinitrotoluene	Maximum influent composite sample concentration (<3.5 μg/L) is significantly less than one-fourth of the activated sludge inhibition threshold (5,000 μg/L).
2,4,6-Trichlorophenol	Maximum influent composite sample concentration (<4.8 μg/L) is significantly less than one-fourth of the activated sludge inhibition threshold (50,000 μg/L).
Anthracene	Maximum influent composite sample concentration (<0.05 μg/L) is significantly less than one-fourth of the activated sludge inhibition threshold (500,000 μg/L).
Hexachlorobenzene	Maximum influent composite sample concentration (<3.5 μg/L) is significantly less than one-fourth of the activated sludge inhibition threshold (5,000 μg/L).
Naphthalene	Maximum influent composite sample concentration (<0.1 μg/L) is significantly less than one-fourth of the activated sludge inhibition threshold

Pollutant	Reason for Not Developing MAHL/Local Limit
	(500,000 µg/L).
Nitrobenzene	Maximum influent composite sample concentration (<4.5 µg/L) is significantly less than one-fourth of the activated sludge inhibition threshold (30,000 µg/L).
Pentachlorophenol	Maximum influent composite sample concentration (<3 µg/L) is significantly less than one-fourth of the activated sludge and anaerobic digestion inhibition thresholds (950 and 600 µg/L, respectively).
Phenanthrene	Maximum influent composite sample concentration (<0.05 µg/L) is significantly less than one-fourth of the activated sludge inhibition threshold (500,000 µg/L).
Phenol	Maximum influent composite sample concentration (6.7 µg/L) is significantly less than one-fourth of the activated sludge inhibition threshold (50,000 µg/L).
Chlorinated Pesticides and PCBs	
Aldrin	Pollutant was not detected in the Plant influent at an MDL (0.008 µg/L) significantly below the applicable biosolids use criteria (1,400,000 µg/L).
Chlordane	Pollutant was not detected in the Plant influent at an MDL (0.01 µg/L) significantly below the applicable biosolids use criteria (2,500 µg/L).
4,4'-DDT; 4,4'-DDE, 4,4'-DDD	Pollutants were not detected in the Plant influent at an MDL (0.003 µg/L) significantly below the applicable biosolids use criteria (1,000 µg/L).
Endrin	Pollutant was not detected in the Plant influent at an MDL (0.01 µg/L) significantly below the applicable biosolids use criteria (200 µg/L).
Heptachlor	Pollutant was not detected in the Plant influent at an MDL (0.01 µg/L) significantly below the applicable biosolids use criteria (4,700 µg/L).
gamma-BHC	Pollutant was not detected in the Plant influent at an MDL (0.008 µg/L) significantly below the applicable biosolids use criteria (4,000 µg/L).
Methoxychlor	Pollutant was not detected in the Plant influent at an MDL (0.01 µg/L) significantly below the applicable biosolids use criteria (100,000 µg/L).
PCBs	Pollutant was not detected in the Plant influent at an MDL (0.04 µg/L) significantly below the applicable biosolids use criteria (50,000 µg/L).
Toxaphene	Pollutant was not detected in the Plant influent at an MDL (0.4 µg/L) significantly below the applicable biosolids use criteria (5,000 µg/L).
Organophosphorus Pesticides	
Chlorpyrifos	Pollutant was not detected in the Plant effluent at an MDL (0.005 µg/) below one-half of the NPDES permit effluent limitation factor.
Diazinon	Pollutant was not detected in the Plant effluent at an MDL (0.007 µg/) below one-half of the NPDES permit effluent limitation factor.

Although local limits will not be derived for the pollutants listed in Table 3, the City will continue to monitor for these pollutants as part of its routine NPDES monitoring and reporting requirements for its Pretreatment Program and evaluate the need for any local limits for these pollutants in the future.

Based upon monitoring data collected during the Local Limits Monitoring Program, historic data, the screening step, and the parameter exclusion criteria (listed above), the list of pollutants for MAHL derivation is as follows:

Conventional

Ammonia as N	TSS
BOD	

Metals (Total Recoverable)

Aluminum	Mercury
Arsenic	Nickel
Cadmium	Selenium
Chromium	Silver
Copper	Zinc
Lead	

Other Toxics

Cyanide

Although lead and silver do not meet the screening step criteria, MAHLs will be derived for these pollutants because they are national POCs.

3.3 Flow Measurements

Flow measurements are essential in calculating pollutant mass loadings. The following information is necessary to accurately calculate pollutant loadings:

- Plant influent and effluent flow;
- Industrial user flow;
- Biosolids flow to the anaerobic sludge digester; and
- Biosolids volume for disposal.

The June 2013 to May 2015 average daily influent was 4.28 MGD. When discharging, the June 2013 to May 2015 average daily effluent flows to EFF-001 and EFF-002 were 2.86 and 4.18 MGD, respectively. When calculating pollutant loads, average daily flow data corresponding to the sample date was used. The estimated industrial flow is 0.05 MGD based on Pretreatment Compliance Audit and Inspection Reports. The average daily feed rate to the anaerobic sludge digesters is 0.0165 MGD. In 2013, the approximately 3,260 tons dry weight were disposed of at the Yolo County Central Landfill and used as alternative daily cover.

3.4 Removal Efficiency Calculations

Removal efficiency through the Plant, or specific unit within the treatment process, is defined as the fraction (or percent) of the pollutant that is removed. Local Limits Guidance recommends several methods of calculating removal efficiencies, including the average daily removal efficiency, mean removal efficiency, and decile methods. In this derivation of the MAHLs, removal efficiencies are calculated using the mean removal efficiency method.

The mean removal efficiency method was used to calculate treatment plant and primary treatment removal efficiencies. This method was used in lieu of the decile method because there are too few pair removal efficiencies available to calculate removal efficiencies using the decile method. The mean removal efficiency method is disadvantageous in relation to the decile method because it does not indicate how often the derived removal efficiency is achieved. However, this method is still useful because it allows for the use of historic data that may not have been collected as lagged samples based on hydraulic residence time.

The primary treatment removal efficiency according to the mean removal efficiency method is calculated using the following equation:

$$R_P = \frac{C_{IN} - C_{PE}}{C_{IN}} \times 100\%$$

Where:

R_P = Pollutant removal efficiency through primary treatment process;

C_{IN} = Average influent pollutant concentration; and

C_{PE} = Average primary treatment effluent pollutant concentration.

Total Plant removal efficiencies are calculated as a change in loads as opposed to change in concentrations to account for the difference in influent and final effluent flows and to credit wastewater recycling efforts. The total Plant removal efficiency according to the mean removal efficiency method is calculated using the following equation:

$$R_{PLANT} = \frac{L_{IN} - L_{FE}}{L_{IN}} \times 100\%$$

Where:

R_{PLANT} = Pollutant removal efficiency through the Plant;

L_{IN} = Average influent pollutant load [lb/day]; and

L_{FE} = Average final effluent pollutant load [lb/day].

In general, the following guidelines are used when calculating removal efficiencies:

1. Total Plant removal efficiencies were calculated using a combined data set for both effluent discharge locations.
2. Calculated removal efficiencies are cross-checked with removal efficiency ranges provided in the Local Limits Guidance to check that realistic values are used.
3. Special consideration is given to instances when the concentrations of pollutants appear to increase during the treatment process. In these situations, negative removal efficiencies are used to derive local limits. This approach provides a conservative assessment of treatment performance as well as an additional safety factor to protect the Plant.
4. The City conducts regular sampling of its influent and final effluent for pollutants for which it has NPDES permit effluent limitations. Other priority pollutants are sampled, at a minimum, on an annual basis. Use of historic data along with data collected through the Local Limits Monitoring Program provides for a more robust calculation of removal efficiencies. This approach also characterizes seasonal variations in Plant performance.

3.5 Allowable Headworks Loading Calculations

Prior to calculating a local limit, it is necessary to calculate allowable headworks loading (AHL) for each POC. The AHL is the estimated pollutant loading that can be received at the Plant headworks without causing the Plant to violate a particular operational restriction or environmental criterion. AHLs are calculated for each type of restriction (NPDES permit effluent limitations, Plant treatment design capacity, treatment process inhibition levels, and biosolids disposal restrictions). The calculation procedures shown below are based on the methodologies and equations in the Local Limits Guidance. Depending on the units used, conversion factors are applied to the calculations.

3.5.1 NPDES Permit Effluent Limitations

To prevent pass-through, the AHL based on NPDES permit effluent limitations is calculated using the following equation:

$$AHL_{NPDES} = \frac{8.34 \times C_{NPDES} \times Q_{FE}}{1 - R_{PLANT}}$$

Where:

AHL_{NPDES} = NPDES permit-based AHL [lb/day];

C_{NPDES} = NPDES permit effluent limitation [mg/L];

Q_{FE} = Average daily Plant final effluent flow rate [MGD]; and

R_{PLANT} = Pollutant removal efficiency through the Plant.

3.5.2 Plant Treatment Design Capacity

To prevent overloading of the Plant design capacity, the AHL based on Plant treatment design capacity restrictions is calculated using the following equation:

$$AHL_{DESIGN} = 8.34 \times C_{DESIGN} \times Q_{IN}$$

Where:

AHL_{DESIGN} = Plant design capacity-based AHL [lb/day];

C_{DESIGN} = Plant design capacity [mg/L]; and

Q_{IN} = Average daily Plant influent flow rate [MGD].

3.5.3 Activated Sludge Inhibition

The AHL based on activated sludge inhibition is calculated using the following equation:

$$AHL_{AS} = \frac{8.34 \times C_{AS} \times Q_{IN}}{1 - R_P}$$

Where:

AHL_{AS} = Activated sludge inhibition-based AHL [lb/day];

C_{AS} = Activated sludge inhibition concentration [mg/L];

Q_{IN} = Average daily Plant influent flow rate [MGD]; and

R_P = Pollutant removal efficiency through primary treatment.

3.5.4 Anaerobic Sludge Digestion Inhibition

The AHL for anaerobic sludge digestion inhibition depends on whether a pollutant is conservative (e.g., metals) or non-conservative (e.g., organics, cyanide). For conservative pollutants, the AHL based on anaerobic sludge digestion inhibition is calculated using the following equation:

$$AHL_{ASD} = \frac{8.34 \times C_{ASD} \times Q_{ASD}}{R_{PLANT}}$$

Where:

AHL_{ASD} = Anaerobic sludge digestion inhibition-based AHL for conservative pollutants [lb/day];

C_{ASD} = Anaerobic sludge digestion inhibition concentration [mg/L];

Q_{ASD} = Average daily flow rate to anaerobic sludge digester [MGD]; and

R_{PLANT} = Pollutant removal efficiency through the Plant.

For non-conservative pollutants, the AHL based on anaerobic sludge digestion is calculated using the following equation:

$$AHL_{ASD} = 8.34 \times L_{IN} \times \frac{C_{ASD}}{C_{DIG}}$$

Where:

AHL_{ASD} = Anaerobic sludge digestion-based AHL for non-conservative pollutants [lb/day];

L_{IN} = Average influent pollutant load [lb/day];

C_{ASD} = Anaerobic sludge digestion inhibition concentration [mg/L]; and

C_{DIG} = Average anaerobic sludge digester pollutant concentration [mg/L].

3.5.5 Biosolids Restrictions

CCR Title 22 biosolids restrictions apply to the disposal of biosolids. Biosolids cannot be hazardous waste if they are to be disposed of in non-hazardous waste facilities (e.g., landfill). CCR Title 22 biosolids restrictions may apply either to conservative or non-conservative pollutants. However, non-conservative pollutants were evaluated and excluded from the headworks loading analysis (see Table 3). For conservative pollutants, the AHL based on CCR biosolids restriction is calculated using the following equation:

$$AHL_{CCR} = \frac{1.0 \times 10^{-6} \times C_{CCR} \times V_{LF} \times G_{BIOSOLIDS}}{PS \times R_{PLANT}}$$

Where:

AHL_{CCR} = CCR Title 22 biosolids restriction-based AHL for conservative pollutants [lb/day];

C_{CCR} = CCR Title 22 numeric biosolids restrictions [mg/kg wet weight];

V_{LF} = Average daily volume of biosolids disposed of in landfill [lb/day dry weight];

$G_{BIOSOLIDS}$ = Specific gravity of biosolids [kg/L];

PS = Percent solids at disposal; and

R_{PLANT} = Pollutant removal efficiency through the Plant.

3.6 Maximum Allowable Headworks Loading

Following the calculation of the applicable AHLs for each POC, the minimum AHL for each POC is designated as the MAHL, or the maximum influent loading that can be accepted at the Plant to ensure compliance with all operational restrictions and/or environmental criteria.

3.7 Need for Local Limit

Although MAHLs were calculated for each POC, there may not be a need to develop a local limit for that pollutant. The following Local Limits Guidance evaluation and exclusion steps are intended to determine if local limits are necessary for each POC. A local limit is not necessary if the following criteria are met:

- The average influent loading of the pollutant is less than 60 percent of the MAHL;
- The maximum daily influent loading of the pollutant is less than 80 percent of the MAHL any time in the 12-month period preceding the analysis; or
- Monthly average influent loading is less than 80 percent of the average design capacity for BOD, TSS, and ammonia as N during any one month in the 12-month period preceding the analysis.

A comparison of the MAHLs with the June 2014-May 2015 average and maximum influent loadings for each POC, except ammonia, BOD, and TSS, is presented in **Table 4**.

Table 4. Comparison of the June 2014-May 2015 City of Davis Wastewater Treatment Plant Influent Loadings to the Maximum Allowable Headworks Loadings

Pollutant	MAHL (lb/day) (1)	Average Influent Loading (lb/day)	Average Influent % of MAHL(2)	Maximum Influent Loading (lb/day)	Maximum Influent % of MAHL(3)
Metals (Total Recoverable)					
Aluminum	5.5	13	**240%**	20	**360%**
Arsenic	1.0	0.17	17%	0.18	18%
Cadmium	0.063	0.0072	11%	0.014	22%
Chromium	20	0.49	2.5%	0.67	3.3%
Copper	4.0	2.4	**60%**	2.9	43%
Lead	44	0.042	0.1%	0.11	0.3%
Mercury	0.0021	0.0015	**71%**	0.0024	**110%**
Nickel	(4)	0.13	–	0.18	–
Selenium	0.26	0.10	38%	0.12	46%
Silver	2.1	0.0080	0.4%	0.021	10%
Zinc	20	3.9	20%	5.1	26%
Non-Conservative Pollutants					
Cyanide	0.12	0.030	25%	0.096	**80%**

(1) Based on average influent flow rate of 4.28 MGD (June 2013-May 2015).

(2) Percentages in bold indicate average influent loadings that exceed 60% of the MAHL.

(3) Percentages in bold indicate maximum influent loadings that exceed 80% of the MAHL.

(4) An MAHL could not be calculated for this pollutant.

For ammonia as N, BOD, and TSS, Local Limits Guidance recommends using a monthly average comparison of influent loading to the MAHL because POTWs are expected to have capacity to consistently treat a design conventional pollutant load to acceptable levels for discharge. The June 2014-May 2015 maximum monthly average influent loads for ammonia as N, BOD, and TSS and percentages of the respective MAHLs are presented in **Table 5**.

Table 5. June 2014-May 2015 Maximum Monthly Average Influent Loads for Ammonia, BOD, and TSS

Pollutant	MAHL (lb/day) (1)	Maximum Monthly Average Influent Load (lb/day)	Maximum Monthly Average Influent % of MAHL (2)
Ammonia as N	250	1,500	**600%**
Biochemical oxygen demand	9,800	9,500	**97%**
Total suspended solids	9,800	14,000	**140%**

(1) Based on June 2013 to May 2015 influent flow rate of 4.28 MGD.

(2) Percentages in bold indicate maximum monthly average influent loadings that exceed 80% of the MAHL.

The following pollutants do not meet the exclusion criteria listed above, indicating that the derivation and implementation of local limits is appropriate and necessary:

Conventional
Ammonia as N
BOD
TSS

Metals
Aluminum
Copper
Mercury

Other Toxics
Cyanide

While current influent loads do not meet the exclusion criteria recommending the derivation and implementation of local limits, the City plans to take a conservative approach and also develop local limits for the national POCs with the exception of nickel, not listed above in order to protect its collection system and Plant. An MAHL could not be derived for nickel because it appears that nickel increases significantly during the wastewater treatment process at the Plant. Additional investigation of Plant sources of nickel is needed before updating the local limit for nickel.

SECTION 4. MAXIMUM ALLOWABLE INDUSTRIAL LOADINGS

From the MAHL, the MAIL and subsequent local limit are derived. The MAIL is the maximum pollutant loading from industrial users that may enter the Plant without having the potential to negatively impact the aforementioned the City's Pretreatment Program objectives. In this section, the following information is presented:

- MAIL calculations procedures;
- Derivation results; and
- MAIL allocation methods.

4.1 MAIL Calculation Procedures

The MAIL, or the maximum pollutant load that can come from industrial sources, is obtained from the MAHL by reducing the MAHL by a safety factor and subtracting the existing loading from uncontrollable sources (i.e., non-industrial sources). The MAIL is calculated using the following equation:

$$MAIL = (1 - SF) \times MAHL - (8.34 \times Q_{NI} \times C_{NI})$$

Where:

MAIL = Maximum allowable industrial loading for pollutant [lb/day];

SF = Safety factor;

MAHL = Maximum allowable headworks loading [lb/day];

Q_{NI} = Average non-industrial flow rate [MGD]; and

C_{NI} = Average non-industrial pollutant concentration [mg/L].

As indicated in the equation above, Local Limits Guidance suggests reserving a portion of the MAIL as a safety factor to account for variability in data, quality of data used in MAHL and MAIL derivations, and potential for slug loadings. Local Limits Guidance also states that "as a general rule, a minimum safety factor of 10% of the maximum allowable headworks loading is usually necessary to adequately address [these] issues." Unless otherwise noted, a safety factor of 10% is used in the development of MAILs presented below.

4.2 Derivation Results

The following section provides the results of MAIL derivation and collection system-based numeric limits.

4.2.1 MAIL Calculation Results

For this analysis, MAILs were derived using a spreadsheet model based upon the methodologies provided in the Local Limits Guidance for each pollutant that have a need for local limits from Tables 4 and 5 as well as other national POCs. The MAIL derivations are summarized in **Table 6** and presented in **Appendix D**. The assumptions used in the local limits derivations are summarized in Appendix E. These are the proposed local limits expressed as the MAIL in pounds per day (lb/day).

Table 6. City of Davis Wastewater Treatment Plant Maximum Allowable Industrial Loadings/Local Limits

Pollutant	Maximum Allowable Industrial Loading (lb/day)
Conventional	
Ammonia as N	(1)
Biochemical oxygen demand (BOD)	370
Total suspended solids (TSS)	(2)
Metals (Total Recoverable)	
Aluminum	(3)
Arsenic	0.74
Cadmium	0.050
Chromium	17
Copper	1.4
Lead	39
Mercury	0.0009
Nickel	(4)
Selenium	0.15
Silver	1.9
Zinc	15
Non-Conservative Pollutants	
Cyanide	0.084

(1) An MAIL for ammonia could not be derived because it appears that the non-industrial load exceeds the MAHL. Further analysis may be necessary to determine an appropriate local limit for ammonia. See Section 6.

(2) Although an MAIL for TSS was derived (15 lb/day), this available load is insufficient for existing industrial users and will result in significant compliance issues. Further analysis may be necessary to determine an appropriate local limit for TSS. See Section 6.

(3) An MAIL for aluminum could not be derived because it appears that the non-industrial load exceeds the MAHL. Additionally, prior study has demonstrated that aluminum leaches from the overland flow treatment process and reduces the total Plant removal efficiency. Further analysis may be necessary to determine an appropriate local limit for aluminum. See Section 6.

(4) An MAIL for nickel could not be derived because it appears that the Plant is a source of nickel. Further analysis is necessary to determine an appropriate local limit for nickel. See Section 6.

4.2.2 Collection System-Based Limits

Collection system-based numeric limits, which are intended to address explosivity, corrosivity, flow obstruction, temperature, and headspace toxicity, apply directly to industrial users and do not involve calculation of MAILs.

The General Pretreatment Regulations (40 CFR 403.5(b)(1)) prohibit discharge of pollutants that will cause a fire or explosion hazard in the collection system. It is recommended that the City prohibit discharge of pollutants that have a closed cup flashpoint of less than 140°F (60°C) to protect against fires and explosions. The National Institute for Occupational Safety and Health (NIOSH) provides a chemical database (http://www.cdc.gov/niosh/npg), including closed cup flashpoint values for pollutants, which is used to determine if pollutants are prohibited from discharge into the collection system.

The General Pretreatment Regulations (40 CFR 403.5(b)(2)) specify a minimum industrial discharge pH limit of 5.0 to prevent against corrosion. Federal regulations (40 CFR 261.22(a)(1)) also specify that the maximum discharge pH limit should be 12.5 to prevent wastewater from being classified as hazardous waste. The City will maintain its existing minimum discharge pH limit of 5.0 and its maximum discharge pH limit of 12.5.

The General Pretreatment Regulations (40 CFR 403.5(b)(3)) prohibit discharge of solid or viscous pollutants that will obstruct flows and interfere with wastewater flows in the collection system or at the Plant. The City will maintain its existing prohibition of the discharge of solids or viscous pollutants that will obstruct flows and interfere with wastewater flows into the collection system and/or at the Plant.

The City currently prohibits discharge of wastewater at a temperature that will result in a temperature higher than 104°F (40°C) at its introduction to the Plant. This upper temperature limit will prevent the wastewater temperature at the Plant from being higher than 104°F (40°C), which can inhibit biological treatment processes. The City will maintain its existing wastewater discharge temperature restrictions.

General Pretreatment Regulations (40 CFR 403.5(b)(7)) prohibit discharge of pollutants that can lead to the accumulation of toxic gases, vapors, or fumes in the collection system and/or at the Plant in a quantity that may cause acute worker health and safety problems. The fume toxicity screening levels for pollutants may be found in the NIOSH chemical database (http:///www.cdc.gov/niosh/npg). The City will prohibit discharge of pollutant concentrations above the lower of a derived local limit, two readings on an explosive hazard meter more than five percent (5%) as hexane, or two readings on an explosive hazard meter over ten percent (10%) of the Lower Explosive Limit (LEL).

4.3 MAIL Allocation Methods

MAIL allocation among dischargers is necessary for the development and renewal of industrial user permits. Local Limits Guidance specifies the following four types of numeric local limits allocation strategies:

- Uniform local limits;
- Local limits by industrial contributory flow;
- Industry-specific local limits by mass proportion; and
- Creative allocation.

4.3.1 Uniform Local Limits

For certain parameters, it may be desirable to calculate uniform numeric discharge concentration restrictions that are intended to apply to all industrial users. This can be achieved by simply assigning the MAIL concentration as a local limit. In general, this is the most restrictive MAIL allocation approach, but the easiest to administer.

The MAIL can be converted to a uniform concentration using the following equation:

$$MAIL_{CONC} = \frac{MAIL}{8.34 \times Q_I}$$

Where:

$MAIL_{CONC}$ = MAIL expressed as a concentration [mg/L];

MAIL = MAIL expressed as a load [lb/day];

Q_I = Average industrial user flow rate [MGD];

4.3.2 Local Limits by Industrial Contributory Flow

The derivation of industrial contributory flow local limits for targeted industries is similar to the uniform local limits approach except that the number of industrial users affected is limited to those for which it has been established that the given POC is present at levels higher than background levels. In other words, only dischargers that are known to or suspected of being significant contributors of the given pollutant would be subjected to the limit. For all remaining industrial sources, it is assumed that their discharges are non-industrial in character.

Industrial contributory flow-based local limits are calculated from the MAIL as follows:

$$LL_{IC} = \frac{MAIL - 8.34 \times Q_{NC} \times C_D}{8.34 \times (Q_{NI} + Q_{NC})}$$

Where:

LL_{IC} = Industrial contributory flow-based limit [mg/L];

MAIL = Maximum allowable industrial loading of pollutant [lb/day];

Q_{NC} = Average industrial user flow rate for controlled sources not discharging pollutant [MGD];

Q_{NI} = Average non-industrial flow rate [MGD]; and

C_{NI} = Average non-industrial pollutant concentration [mg/L].

4.3.3 Industry-Specific Local Limits by Mass Proportion

Industry-specific local limits by mass proportion are developed by allocating the MAIL for each POC in proportion to the existing loadings from each industrial user or at the discretion of the regulating agency. This approach enables dischargers with higher strength effluent to receive more achievable limits, while providing lower strength dischargers with limits more in line with the characteristics of their own discharges. The methodology for derivation of industry-specific local limits by mass proportion is presented in the Local Limits Guidance.

4.3.4 Creative Allocation

In general, after the MAIL has been calculated, a POTW has flexibility in allocating the loading among its industrial users as long as a safety factor is maintained and the POTW accounted for all allocations, and public notice of the allocation is properly issued and allocation is adopted.

4.4 MAIL Allocation

The City proposes to adopt its local limits using the uniform local limits allocation method. The uniform local limits, which are based on the MAILs presented in Table 6, are presented in **Table 7**. The City proposes to remove local limits for some pollutants for which local limits could not be technically-developed/updated.

In lieu of local limits for some of these pollutants, the City will establish narrative prohibitions in its Sewer Use Ordinance to regulate discharge of these pollutants into the City's sanitary sewer system. Any process that involves the use and/or potential discharge of these pollutants will require that the discharge be treated with granulated activated carbon (GAC) prior to discharge into the City's collection system. GAC treatment devices must be maintained and operated to achieve a non-detect for the pollutant(s) being treated.

Table 7. Proposed City of Davis Uniform Local Limits

Pollutant	Proposed Uniform Local Limit (mg/L) (1)	Existing Local Limit (mg/L)
Conventional		
Ammonia as N	(2)	–
Biochemical oxygen demand (BOD)	880	2,800
Total suspended solids (TSS)	(3)	250
Metals (Total Recoverable)		
Arsenic	1.8	–
Cadmium	0.12	0.10
Chromium	41	–
Chromium VI	–	0.03
Copper	3.4	3.0
Lead	5.0 (4)	1.0
Mercury	0.0023	0.05
Nickel	(5)	2.0
Selenium	0.36	0.01
Silver	4.5	2.0
Zinc	36	1.0
Volatile Trace Organics		
1,1,1-Trichloroethane	–	1.5
1,2-Dibromoethane	–	Non-detect
1,2-Dibromo-3-chloropropane	–	Non-detect
1,2-Dichloroethane	–	Non-detect
1,2-Dichloropropane	–	Non-detect
1,2,3-Trichloropropane	–	Non-detect
1,3-Dichloropropane	–	Non-detect
1,4-Dichlorobenzene	–	0.40
Benzene	–	Non-detect
Carbon tetrachloride	–	Non-detect
Chlorobenzene	–	Non-detect
Chloroform	–	0.40
Methyl bromide	–	0.002
Methyl chloride	–	0.007
Methylene chloride	–	2.0
Tetrachloroethylene	–	0

Pollutant	Proposed Uniform Local Limit (mg/L) (1)	Existing Local Limit (mg/L)
Toluene	–	0.60
Semi- and Non-volatile Trace Organics		
Bis(2-ethylhexyl)phthalate	–	0.0059
Non-Conservative Pollutants		
Cyanide	0.20	–
Tributyltin	–	0.0003

(1) The proposed uniform local limits will be adopted as daily maximum concentrations.

(2) An MAIL for ammonia could not be derived because it appears that the non-industrial load exceeds the MAHL as well as the Plant influent load. Further analysis may be necessary to determine an appropriate local limit for ammonia.

(3) Although an MAIL for TSS was derived (16 lb/day), this available load is insufficient for existing industrial users and will result in significant compliance issues. Further analysis may be necessary to determine an appropriate local limit for TSS. It is recommended that the current TSS local limit be maintained until the Plant upgrade is completed.

(4) The calculated uniform local limit for lead was 93 mg/L. However, the proposed uniform local limit for lead is restricted to 5.0 mg/L to meet the Title 22 hazardous waste soluble threshold limit concentration (STLC).

(5) An MAIL for nickel could not be derived because it appears that the Plant is a source of nickel. Further analysis is necessary to determine an appropriate local limit for nickel. It is recommended that the current nickel local limit be maintained until the Plant upgrade is completed.

SECTION 5. PUBLIC PARTICIPATION

General Pretreatment Regulations encourage public participation by requiring public notices or hearings for Pretreatment Program approval, removal credits, program revisions, local limits development and revisions, and industrial users in significant non-compliance. For a substantial change to the Pretreatment Program, such as the development less stringent local limits or removal of existing local limits, the City is required to notify the Regional Water Board of its desire to modify its program and its basis for the changes. The requested modifications cannot be implemented until the City receives approval from the Regional Water Board of the modifications. For non-substantial changes to the Pretreatment Program, such as the development of new local limits or more stringent local limits, the City is required to notify the Regional Water Board of its desire to modify its program and its basis for the changes at least forty-five (45) days prior to implementation of the modifications. For non-substantial changes, the City does not require Regional Water Board approval of the modifications.

Federal regulations [40 CFR 403.5(c)(3)] require the POTWs to notify industrial users and other affected parties and provide them with an opportunity to respond to changes in local limits. The federal regulations do not specify the exact public notice process, but USEPA recommends that the POTWs notify affected parties in the local newspaper when the new local limits are drafted. This public comment period can be open while the proposed local limits are being submitted to the Regional Water Board for initial review or, the POTW can wait until after it receives comments from the Regional Water Board. During the comment period, the public may present technical challenges to the rationale for a particular local limit. To prepare for potential challenges, a POTW should thoroughly document its local limits development process.

For this local limits development process, the City will provide a public notice and public comment period after the proposed local limits are submitted to the Regional Water Board for initial review.

SECTION 6. NEXT STEPS

The local limits updated and developed and discussed above are part of a dynamic process that includes periodic review and update as necessary. Local Limits Guidance recommends that POTWs conduct regular monitoring as part of the local limits evaluation process. The recommended monitoring frequencies are presented in **Table 8**. It should be noted that more frequent monitoring may be required through other permits and/or regulations.

Table 8. Local Limits Monitoring Program – Recommended Ongoing Monitoring Frequency

Location	POCs with Local Limits (1)	POCs with Calculated MAHLs (2)	Other POCs with Regulatory or Operational Restrictions (3)
Collection System	Annually	Annually	Annually
Plant Influent	Semiannually	Semiannually	Annually
Plant Primary Treatment Effluent	Annually	Annually	Annually
Plant Final Effluent	Semiannually	Semiannually	Annually
Plant Anaerobic Digester Effluent	Annually	Annually	Annually
Biosolids Disposal Point	Annually	Annually	Annually

(1) This refers to POCs that have proposed local limits (i.e., Table 6 POCs).

(2) This refers to POCs that do not have proposed local limits, but have calculated MAHLs (i.e., Table 4 and Table 5 POCs).

(3) This refers to POCs that were excluded from MAHL development (i.e., Table 1 POCs).

Future circumstances may again create a need to update the City's MAILs to allow for the City's compliance with environmental and operational restrictions. Such circumstances may include the following:

- Significant changes in the City's industrial base;
- Significant changes in the discharge characteristics of existing industries;
- Significant changes in the environmental and/or NPDES permit regulations applicable to the City;
- Future facility operational difficulties, discharge compliance difficulties, or biosolids disposal compliance difficulties from any pollutants known or suspected to be significantly contributed from industrial sources;
- Future facility infrastructure upgrades that can affect wastewater and/or biosolids treatment processes and quality; and/or
- Difficulties in meeting local limits without any corresponding facility operational challenges, discharge compliance challenges, or biosolids disposal compliance challenges.

The City intends to adopt the proposed local limits presented in Table 7. Derivation of local limits for ammonia as N, TSS, aluminum, and nickel are not appropriate at this time or additional information needs to be developed to derive local limits for these pollutants:

- Ammonia as N – Loads from non-industrial sources currently exceed the MAHL. Because the Plant upgrade is expected to improve treatment for ammonia, it is recommended that developing a local limit for ammonia be postponed until the Plant upgrades are completed;
- Total suspended solids (TSS) – While an MAHL and MAIL can be developed for TSS, industrial user compliance with the local limit for TSS will be infeasible. Because the Plant upgrade is expected to improve treatment for TSS, it is recommended that updating the local limit for TSS be postponed until the Plant upgrades are completed. It is recommended that the City maintain its existing local limit for TSS;
- Aluminum – The City has NPDES permit effluent limitations for aluminum. A prior study indicated that the overland flow treatment system is a source of aluminum in the final effluent. Because the City will remove the overland flow treatment system from its wastewater treatment process as part of the Plant upgrade, it is recommended that developing a local limit for aluminum be postponed until the Plant upgrades are completed; and
- Nickel – Influent concentrations and loads for nickel were found to be three to five times lower than effluent concentrations and loads. It is recommended that the City identify the source of nickel in its wastewater treatment process before updating its local limit for nickel.

Following Regional Water Board approval of the local limits, the City will update its Sewer Use Ordinance and implement the updated local limits in industrial user permits.

APPENDIX A

Local Limits Sampling Plan (September 2014)

S E P T E M B E R   2 0 1 4

C I T Y   O F   D A V I S

Local Limits Sampling Plan

Prepared by

LARRY WALKER ASSOCIATES

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INTRODUCTION

The development, implementation, and periodic review/update of local discharge limitations (local limits) are requirements of the National Pretreatment Program. Local limits development, implementation, and review are part of the City of Davis (City) Pretreatment Program, which involves strategies to control discharge of conventional and toxic pollutants entering the City of Davis Wastewater Treatment Plant (Plant).

The objectives of the City's Pretreatment Program are to prevent:

- Interference with Plant treatment operations;
- Pass-through of conventional and toxic pollutants;
- Contamination of municipal biosolids; and
- Worker exposure to chemical hazards.

To meet these objectives, local limits are set to control inputs to the Plant from industrial users. Local limits are periodically evaluated, and revised as necessary, to respond to changes in treatment plant infrastructure or operations, regulations, or industrial user base. The procedure for developing and updating local limits is described in *Local Limits Development Guidance*, USEPA, 2004 (2004 Local Limits Guidance).

This sampling plan is based on fulfilling data requirements specified in the 2004 Local Limits Guidance to update the City's local limits. The major elements of this work plan include the following:

- Wastewater Treatment Plant description;
- Local limits development approach;
- Proposed local limits sampling plan;
- Quality assurance/quality control; and
- Local limits derivation.

WASTEWATER TREATMENT PLANT DESCRIPTION

The City owns and operates the Plant, which provides treatment of domestic, commercial, and industrial wastewater from the City and communities of El Macero and North Davis Farms and has an average dry weather design capacity of 7.5 million gallons per day (MGD). The Plant consists of a headworks with a mechanical bar screen and an aerated grit chamber, three primary sedimentation tanks, three facultative oxidation ponds, two aerated ponds, a polishing pond, an overland flow system, and chlorination and dechlorination facilities.

All wastewater is treated through the headworks and primary sedimentation. Operation of the secondary wastewater treatment system varies depending on the season. During the dry weather months, primary effluent is treated through the facultative oxidation ponds. From there, the wastewater is sprayed on to the overland flow system, which consists of 160 acres divided into 15 cells. The wastewater then flows through mesh screens prior to disinfection and discharge either to Willow Slough Bypass or to restoration wetlands prior to discharge to Conaway Ranch Toe Drain

During the winter (December-April), a portion of the primary effluent is treated through the aerated ponds and a polishing pond prior to blending with the remainder of the primary effluent in the facultative oxidation ponds. From the facultative oxidation ponds, wastewater receives similar treatment to the summer operation.

Solids are digested in two anaerobic sludge digesters and dewatered in one of three sludge lagoons. Dried biosolids are disposed of at a landfill.

The City is currently in the process of upgrading the Plant to provide activated sludge treatment and secondary clarification, tertiary-level treatment through filtration, and solids handling with mechanical biosolids thickening, dewatering, and storage. The Plant upgrade, which may be phased due to reductions in inflow and infiltration and water conservation, is expected to be completed in October 2017.

Stormwater captured within the Plant’s storm drain system is treated through the Plant.

LOCAL LIMITS DEVELOPMENT APPROACH

The purpose of developing local limits is to prevent interference of Plant treatment operations, protect worker health and safety, prevent pass-through of conventional and toxic pollutants, and prevent contamination of biosolids. Since the development of the City's existing local limits, the City received a new National Pollutant Discharge Elimination System (NPDES) permit (CA000079049) with new effluent water quality limitations. The City's NPDES permit, adopted in October 2013 by the California Regional Water Quality Control Board Central Valley Region (Regional Water Board) (Order No. R5-2013-0127), regulates discharge of treated wastewater into the Willow Slough Bypass and Conaway Ranch Toe Drain. Per 2004 Local Limits Guidance, local limits should be evaluated and/or updated upon issuance of new NPDES permits.

The approach for updating and developing technically- and scientifically-based local limits is based on identifying and evaluating the following applicable information:

- Identification of sampling locations;
- Development of sampling frequencies; and
- Evaluation of existing conditions

Sampling Locations Identification

The development of technically- and scientifically-based local limits relies on wastewater and biosolids quality data from the City's collection system and at various points in the treatment process to establish:

- Uncontrollable pollutant loads;
- In-plant removal efficiencies; and
- Biosolids quality.

Uncontrollable Pollutant Loads

Uncontrollable sources of pollutants (domestic users, commercial users, inflow and infiltration, drinking water, and stormwater) typically contribute the majority of flow to a wastewater treatment plant, and can result in significant pollutant loads. However, for most pollutants, uncontrollable sources contain lower pollutant concentrations in comparison to industrial wastewater.

In order to establish pollutant levels from uncontrollable sources, the collection system must be monitored in an area where there are no industrial users or industrial wastewater sources. The 2004 Local Limits Guidance recommends selecting sampling points based on the size of the service area, variability in pollutant concentrations in different parts of the collection system, presence of inflow and infiltration, types and mix of commercial users, and variability in drinking water sources.

The collection system sampling location selected is quadrant O-8 MH 48 on Marina Boulevard in West Davis. The sample location was selected based on the predicted flow from a large area of residential homes and the absence of commercial and industrial sources. The hydraulic travel time to the Plant from this location is approximately seven to nine hours.

In-Plant Removal Efficiencies

In-plant removal efficiencies for pollutants are required to determine the maximum allowable headworks loading (MAHL) that can be effectively treated without overloading treatment design capacities, upsetting or inhibiting treatment processes, causing contamination of biosolids, or exceeding NPDES permit effluent limitations. In order to obtain this information, wastewater quality data are collected at influent, primary treatment effluent, anaerobic sludge digester, and final effluent locations.

Influent wastewater quality samples must be collected at a location prior to where raw wastewater mixes with any operational recirculation flows. Primary effluent data are used to determine the pollutant removal efficiencies through primary treatment in order to calculate allowable headworks loadings (AHLs) that are protective of biological treatment processes. Anaerobic sludge digester sampling is necessary to determine biosolids partitioning factors, which are used to develop loading limits that will protect against anaerobic sludge digester upset and inhibition. Final effluent sampling is necessary to calculate overall treatment plant removal efficiencies and to determine compliance with NPDES permit effluent limitations.

Biosolids Quality

Different regulations apply depending on the biosolids disposal practice. Biosolids must be monitored to determine the presence of any pollutants at levels exceeding the applicable biosolids regulations and to derive local limits that will protect biosolids handling processes and quality.

Recommended Sampling Frequency

For local limits development, the 2004 Local Limits Guidance recommends the sampling scheme, presented in Table 1, for a wastewater treatment plant of similar size to the Plant (i.e., 5-10 MGD).

Table 1. Minimum Recommended Sampling Frequency for Local Limits Development

Parameter	Publicly-Owned Treatment Works			Residential/ Commercial
	Influent	Effluent	Biosolids	Collection System
Organic priority pollutants	2	2	1	2
National pollutants of concern	14	14	2	7
POTW-specific pollutants of concern	14	14	2	7
Biosolids percent solids, biosolids (1)	–	–	2	–
TCLP pollutants (2)	–	–	1	–

Note: Samples should be 24-hour composite samples unless sampling methods for a given pollutant only allow for grab samples. Samples should be collected on consecutive days.

(1) Biosolids regulations in 40 CFR Part 503 require percent solids to be determined every day that biosolids are applied to land.

(2) Conduct if biosolids are (or are likely to be) disposed of in a landfill.

Existing Conditions and Data Evaluation

The City developed its current local limits in 1993 using the procedures and recommendations presented in the 1987 *USEPA Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program* (1987 Local Limits Guidance). In 2013, the City adopted new local limits in Section 33.03.080 of the City of Davis Municipal Code for the following pollutants: 1,2-dibromoethane; 1,2-dibromo-3-chloropropane; benzene; carbon tetrachloride; chlorobenzene; 1,2-dichloroethane; 1,2-dichloropropane; 1,3-dichloropropane; and 1,2,3-trichloropropane. The City currently has local limits, in addition to those listed above, for cadmium, chromium (hexavalent), copper, lead, mercury, nickel, selenium, silver, zinc, bromomethane, chloroform, chloromethane, 1,4-dichlroobromomethane, methylene chloride, tetrachloroethylene, toluene, 1,1,1-trichloroethane, bis(2-ethylhexyl)phthalate, tributyltin, biochemical oxygen demand (BOD), and total suspended solids (TSS).

Potential pollutants of concern (POCs) are selected for sampling, following the 2004 Local Limits Guidance, for all pollutants that have the potential to interfere with one or more of the City Pretreatment Program's objectives or cause an exceedance of NPDES permit effluent limitations. A summary of potential POCs that are national POCs, have NPDES permit effluent limitations, cause treatment process inhibition, have biosolids restrictions, or were detected during recent Plant monitoring are presented in Table 2.

Table 2. City of Davis Wastewater Treatment Plant Potential Pollutants of Concern

Pollutant	National POCs	NPDES Permit Effluent Limitations	Treatment Process Inhibition	Biosolids Restrictions	Detected During Monitoring (1)
Conventional					
Ammonia as N	X	X	X		X
Biochemical oxygen demand	X	X	X		X
Sulfate as SO_4			X		X
Sulfide as S			X		(2)
Surfactants (MBAS)			X		X
Total suspended solids	X	X	X		X
Metals					
Aluminum		X			X
Antimony				X	X
Arsenic	X		X	X	X
Barium				X	X
Beryllium				X	
Cadmium	X	X	X	X	X
Chromium	X		X	X	X
Cobalt				X	X
Copper	X	X	X	X	X
Lead	X		X	X	X
Mercury	X	X	X	X	X
Methylmercury		X			X
Molybdenum	X			X	X
Nickel	X		X	X	X
Selenium	X	X		X	X
Silver	X		X	X	X
Thallium				X	
Vanadium				X	X
Zinc	X		X	X	X
Volatile Trace Organics					
1,2-Dichlorobenzene			X		
1,3-Dichlorobenzene			X		
1,4-Dichlorobenzene			X		
Acrylonitrile			X		

Pollutant	National POCs	NPDES Permit Effluent Limitations	Treatment Process Inhibition	Biosolids Restrictions	Detected During Monitoring (1)
Benzene			X		
Carbon tetrachloride			X		
Chlorobenzene			X		
Chloroform			X		X
Ethylbenzene			X		
Methyl chloride			X		
Tetrachloroethylene			X		
Toluene			X		
Trichloroethylene			X		
Semi- and Non-volatile Trace Organics					
1,2-Diphenylhydrazine			X		
2-Chlorophenol			X		
2,4-Dichlorophenol			X		
2,4-Dimethylphenol			X		
2,4-Dinitrophenol			X		
2,4-Dinitrotoluene			X		
2,4,6-Trichlorophenol			X		
Anthracene			X		
Hexachlorobenzene			X		
Naphthalene			X		
Nitrobenzene			X		
Pentachlorophenol			X	X	
Phenanthrene			X		
Phenol			X		X
Chlorinated Pesticides & PCBs					
4,4’-DDD				X	
4,4’-DDE				X	
4,4’-DDT				X	
Aldrin				X	
gamma-BHC				X	
Chlordane				X	
Chlorpyrifos		X			
Diazinon		X			

Pollutant	National POCs	NPDES Permit Effluent Limitations	Treatment Process Inhibition	Biosolids Restrictions	Detected During Monitoring (1)
Endrin				X	
Heptachlor				X	
Methoxychlor				X	
PCBs		X		X	
Toxaphene				X	
Other Toxics					
Cyanide	X	X	X		X

(1) Detected data include estimated values (sometimes referred to as "J-flagged" or "detected but not quantified [DNQ]" values). The data evaluated were collected 2012-2013.

(2) Insufficient recent Plant monitoring data (influent, primary treatment effluent, final effluent, biosolids, and/or anaerobic sludge digester).

A screening step included in the 1987 Local Limits Guidance, but not included in the 2004 Local Limits Guidance, is a useful tool for determining if a potential POC warrants a headworks loading analysis to evaluate the need for the development of a local limit. This screening step is particularly useful in determining if it is necessary to conduct a headworks loading analysis, and if necessary additional sampling, for organic pollutants that have treatment process inhibition levels, but may not have any other environmental/ operational restriction to technically base local limits development. Current standard laboratory detection levels are typically several orders of magnitude lower than the treatment process inhibition thresholds identified in the 2004 Local Limits Guidance. Additionally, most organic pollutants that have treatment process inhibition levels are typically not detected in wastewater, which further justifies that these pollutants be excluded from further consideration for local limits update/development.

The following screening step criteria were used to determine if a potential POC needs to undergo the headworks loading analysis:

- **Criterion 1**. The maximum concentration of the pollutant in the effluent is more than one-half the allowable effluent concentration required to meet water quality criteria/standards or the maximum sludge concentration is more than one-half the applicable biosolids criteria guidelines;
- **Criterion 2**. The maximum concentration of the pollutant in a grab sample from the influent is more than one-half the inhibition threshold;
- **Criterion 3**. The maximum concentration of the pollutant in a composite sample from the influent is more than one-fourth the inhibition threshold; or
- **Criterion 4**. The maximum concentration of the pollutant in the influent is more than $1/500^{th}$ of the applicable biosolids use criteria.

Based on the screening step discussed above, headworks loading analyses are only necessary for the following pollutants:

- Ammonia as N;
- Biochemical oxygen demand;
- Total suspended solids;
- Aluminum;
- Copper;
- Selenium;
- Zinc; and
- Cyanide.

All other potential POCs were either not detected, detected at levels significantly below any applicable environmental and/or operational restriction or limit, or lacked sufficient recent monitoring data to conduct the screening. Although headworks loading analyses are only necessary for the POCs listed above, it is recommended that headworks loading analyses be conducted for the other national POCs. This approach will protect the Plant from POCs that are commonly found in wastewater discharges from industrial sources.

The screening step also determined that additional monitoring data are necessary to evaluate if there is a need to conduct a headworks loading analysis for sulfide. In addition to sampling for sulfide, sampling is required for the collection system and anaerobic sludge digester as part of the next step in updating/developing the City's local limits.

PROPOSED LOCAL LIMITS SAMPLING PLAN

The use of reliable, scientifically defensible data is essential to local limits development. Based on an evaluation of existing data, additional sampling data are necessary to update/develop the City's local limits. The following local limits sampling program is proposed to collect additional data needed to complete the local limits update/ development effort. Key elements of the proposed local limits sampling program include the following:

- Pollutants of concern;
- Sampling locations and schedule; and
- Sampling and analysis procedures.

Pollutants of Concern

As discussed previously, POCs are selected for sampling, following Local Limits Guidance, for all pollutants that have the potential to interfere with one or more of the City Pretreatment Program's objectives or cause an exceedance of NPDES permit effluent limitations. The POCs were determined using screening step from the 1987 Local Limits Guidance. The following POCs were identified for the City:

Conventional

Ammonia as N
BOD
Sulfide as S
TSS

Metals

Aluminum
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver
Zinc

Non-Conservative Pollutants

Cyanide

Sampling Locations and Schedule

For this local limits sampling effort, wastewater quality samples will be collected during dry, normal operating conditions in the collection system and Plant influent, primary treatment effluent, final effluent, and anaerobic digester effluent. Because the City routinely collects data at some of the sampling locations, a reduced sampling frequency is proposed compared to Local Limits Guidance for a publicly-owned treatment works (POTW) of a similar size.

A general sampling schedule is provided in Table 3. It should be noted that some pollutants will not require additional sampling, and other pollutants are required to be sampled more frequently. The pollutant-specific sampling schedule is presented in Appendix B.

Table 3. Sampling Locations and Sampling Frequency

Location	Consecutive Days of Sampling		
	Conventional Pollutants	Metals & Cyanide	Organics
Collection System	7	7 (1)	–
Plant Influent	7 (2)	7 (1)	–
Plant Primary Treatment Effluent	7 (3)	7 (4)	–
Plant Final Effluent (Willow Slough Bypass)	7 (5)	7	–
Plant Anaerobic Digester Effluent	2 (3)	2	–

(1) Metals are total recoverable forms of arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, and zinc.

(2) BOD and TSS will not be sampled at this location.

(3) Only ammonia as N and sulfide as S need to be sampled and analyzed at this location.

(4) Metals are total recoverable forms of arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc.

(5) Only ammonia as N needs to be sampled and analyzed at this location.

Existing biosolids quality data will be used as part of this local limits update/ development effort.

Sampling and Analysis Procedures

All Plant sampling will be conducted such that wastewater is followed through the treatment process (i.e., primary treatment effluent sampling is initiated after influent sampling) according to the detention time of each unit process.

Depending on the pollutant sampled, both composite and grab samples will be collected. A summary of sample collection and analysis requirements is presented in Table 4. Recommended analytical methods and maximum reporting limits are provided in Appendix A. Sampling procedures are provided in Appendix D.

Table 4. Sample Collection and Analysis Requirements

Parameter	Sample Type	Sample Size (1)	Container	Preservation (2)	Maximum Holding Time
Biochemical Oxygen Demand	Composite	1000 mL	HDPE	None	48 hours
Total Suspended Solids					7 days
Metals (total recoverable) (3)	Composite	500 mL	HDPE	HNO_3 to pH<2	6 months
Ammonia as N	Grab	500 mL	HDPE	H_2SO_4 to pH<2	28 days
Cyanide	Grab	500 mL	HDPE	NaOH to pH>12	14 days
Mercury	Grab	500 mL	glass (double-bagged)	HCl to pH<2	28 days
Sulfide as S	Grab	BOD bottle	glass	NaOH, Zinc acetate	7 days

(1) Smaller volume size is appropriate as long as it meets the minimum analytical volume requirements.

(2) All samples must be iced or chilled to 0-6°C.

(3) 24-hour, flow-proportional composite samples will be collected at the Plant influent, Plant primary treatment effluent, and Plant final effluent. 24-hour, time-proportional composite samples will be collected in the collection system and Plant anaerobic digester.

A partial list of equipment required for sample collection is presented in Appendix C. All samples must be collected using clean techniques according to EPA Method 1669 (see Appendix D). Samples must be iced or chilled to 0-6°C, from the time of collection to delivery to the analytical laboratory, to minimize sample degradation.

All sample containers should be labeled with the following information:

- Project name;
- Sample location;
- Date of sample collection;
- Time of sample collection;
- Sample collector’s initials;
- Sample preservative; and
- Analysis to be performed.

Time of sample collection is the time that a grab sample was taken or the end of the composite period for composite samples. Samples must be preserved within 15 minutes from sample collection. Sample containers must be properly labeled prior to sample collection to expedite the sampling process as well as to ensure that the proper samples are collected. Chain-of-custody forms must be completed at the time of sampling and accompany each sampling events. Coolers for storage during transport must have sufficient cooling agents to maintain sample temperature of less than 6° C.

Composite Sampling

Prior to initiating sampling efforts, composite sampler intake tubing, peristaltic silicone pump tubing, and the intake strainer must be acid-washed to minimize the potential for contamination. Composite samplers should be calibrated to ensure accurate operation. All composite samples must be collected in clean, acid-washed borosilicate glass or high density polyethylene (HDPE) sample containers. Specific cleaning protocols to be used are included in Appendix D.

If possible, composite samples should be taken as 24-hour flow-proportioned samples. If flow-proportioned composite samples cannot be collected, then composite samples should be 24-hour time-proportioned samples.

Grab Sampling

Grab samples should be collected at locations close to the composite sampler intake to ensure that composite and grab samples are collected at the same location. Grab samples must be collected directly into clean, laboratory-provided sample containers. If necessary, the sample container can be fastened to a sampling grab pole. Using this sampling technique, the “pole-side” of the container must be always directed downstream of the sample container to minimize the potential for contamination from the sampling grab pole. Grab samples are associated with the composite sample removed from the sampling unit on the same day that the grab samples are collected.

Field Measurements

At the time of grab sample collection, electrical conductivity, pH, and temperature are to be measured and recorded using equipment calibrated according to instrument specifications for all locations except the Plant anaerobic sludge digester. Field measurements must be conducted within the shortest holding time requirements prescribed for the parameter (i.e., temperature and pH).

QUALITY ASSURANCE/QUALITY CONTROL

An effective quality assurance/quality control (QA/QC) plan is implemented as part of the local limits sampling program to ensure that analytical data can be used with confidence. QA/QC procedures to be initiated include the following:

- Field controls;
- Laboratory controls;
- Sample chain-of-custody; and
- Data verification.

On days when samples are collected for QA/QC purposes, extra volume (sample or blank water) may be required for analyses. When duplicate samples are collected for QA/QC purposes, double the sample volume is required for analyses. Once the filled composite containers are retrieved from the sampler, the sample is split, adhering to clean techniques, into the appropriate sample containers as specified by the analytical method. For grab sample field duplicates, it is necessary to collect two individual grab samples. After samples are split into the appropriate containers, samples are to be packaged appropriately, iced, and delivered/shipped to the analytical laboratory.

A QA/QC schedule is provided in Table 5.

Table 5. Quality Assurance/Quality Control Schedule

Day	QA/QC Type [1]
Collection System	
Day 0	Field blank (Metals)
Day 1	Field blank (Cyanide; Mercury)
Day 6	Field duplicate (Metals; BOD; TSS; Ammonia as N; Cyanide; Mercury; Sulfide as S)
Plant Influent	
Day 0	Field blank (Metals)
Day 1	Field blank (Cyanide; Mercury)
Day 3	Laboratory duplicate (Metals; Ammonia as N; Cyanide; Mercury; Sulfide as S)
Day 4	MS/MSD (Metals; Cyanide; Mercury)
Plant Primary Treatment Effluent	
Day 0	Field blank (Metals)
Day 1	Field blank (Cyanide; Mercury)
Day 3	Field duplicate (Metals; Ammonia as N; Cyanide; Mercury; Sulfide as S)
Plant Final Effluent (Willow Slough Bypass)	
Day 0	Field blank (Metals)
Day 1	Field blank (Cyanide; Mercury)
Day 5	MS/MSD (Metals; Cyanide; Mercury)
Day 7	Laboratory duplicate (Metals; Ammonia as N; Cyanide; Mercury)

(1) For samples identified for site-specific field duplicates (FDU), laboratory duplicates (DU), and MS/MSD, extra sample volume may be collected and must be identified on the chain-of-custody-form as the sample designated for site-specific FDU, DU, or MS/MSD. See Table B-1 for sampling schedule and sample container requirements.

Field Controls

Field controls are QA/QC procedures that are conducted prior to and during sampling until samples are delivered to the analytical laboratory in order to minimize sampling errors and potential contamination. Field controls to be initiated include the following:

- Field logs;
- Sample chain-of-custody;
- Sampling equipment cleaning;
- Clean techniques;
- Field/equipment blanks; and
- Field duplicates.

Field Logs

The purpose of field logs is to record sampling information and field observations during sampling that may explain any uncharacteristic analytical results. The field log should contain sampling information such as the date and time of sample collection, sampling team, container identification numbers, and types of samples (composite or grab) that were collected. The field log should also any field observations that are abnormal at the sampling location (color, odor, etc.). Field measurements for electrical conductivity, pH, and temperature should also be recorded in the field log.

Sample Chain-of-Custody

Sample chain-of-custody procedures include the following:

- Proper labeling of samples;
- Use of chain-of-custody forms for all samples from field to the analytical laboratory; and
- Prompt sample delivery to the laboratory.

The following notes should be added to chain-of-custody forms:

- Low detection limits for metals and cyanide;
- Detected-but-not-quantified (DNQ), or J-flag, reporting; and
- Field and laboratory duplicate and MS/MSD analyses for specific samples as noted in Table 5.

Sampling Equipment Cleaning

Composite containers, tubing, and lids will be cleaned by the analytical laboratory. To ensure that equipment used for sampling is clean, field/equipment blanks will be collected at the beginning of the monitoring effort to identify any potential contamination.

Clean Techniques

Clean techniques involve the use of certified clean containers for sample collection, clean powder-free nitrile gloves during sample collection and handling, acid-washed tubing for the suction line, and acid-washed silicone tubing for the peristaltic pump tubing. A discussion of clean techniques is included as Appendix D. Strict adherence to clean technique protocols will minimize the potential of field contamination.

Field/Equipment Blanks (FB/EB)

The purpose of field/equipment blanks is to check for potential contamination that may occur during equipment handling and sample collection. Field/equipment blanks should be collected under field conditions to best simulate field procedures. Blank water used for field/equipment blank collection should be provided by the analytical laboratory performing the blank analysis. Field/equipment blanks will be generated for metals (including mercury) and cyanide at the collection system and Plant influent, primary treatment effluent, and final effluent locations.

Because composite samplers vary in design, follow manufacturer's instruction for instrument set-up and operation. The following steps are basic recommendations for equipment blank collection prior to composite sample collection:

1. Using clean techniques, install clean silicone pump tubing into sampler peristaltic pump. Connect the intake side of the silicone tubing to the clean intake tubing.
2. Remove the end cap from the intake end of the clean intake tubing and place the intake end of the tubing inside the full laboratory-provided blank water container. Remove the end cap from the outlet side of the silicone tubing and place the outlet end of the tubing into a clean composite container.
3. Press "pump forward" on the automatic sampler. Allow pumping to continue until the blank water has been pumped through the tubing and into the composite sample container. Then press "stop".
4. Remove the outlet of the silicone tubing from the composite sample container and cover with a new glove or plastic bag. Then pour the blank water from the composite sample container into the appropriate pre-labeled sample container(s) while using clean techniques. Place the full sample container(s) on ice.
5. Return the outlet of the silicone tubing to the composite sample container. Place the inlet of the intake tubing into the next container of blank water, and proceed with Step 3.
6. After all composite equipment blanks have been collected, prepare and set-up the sampler for composite sample collection.

Field blanks are applicable for grab sample collection and should be collected on the same day that grab samples are collected. Field blanks are collected in the field by simply by pouring appropriate, laboratory-provided, blank water directly into pre-labeled grab sample container(s) while using clean techniques.

Field Duplicates (FDU)

The purpose of field duplicates is to check for constancy in field sampling procedures. Field duplicate analyses will be performed for all pollutants. Two separate sample containers will be collected for each analysis. One sample container is labeled as the regular sample while the other sample container is labeled the same with a designation of FDU to indicate that it is the field duplicate.

Laboratory Controls

The analytical laboratory should conduct QA/QC procedures including the following:

- Standard laboratory operation and calibration procedures

- Laboratory control standards (LCS/LCSD) and method blank (MB);
- Analytical batch matrix spike/matrix spike duplicate (MS/MSD); and
- Laboratory duplicate (DU) and field duplicate (FDU).

Standard Laboratory Operation and Calibration Procedures

The analytical laboratory must calibrate equipment according to standard laboratory procedures in order to prevent analytical inaccuracies.

Laboratory Control Standards (LCS/LCSD) and Method Blank (MB)

The analytical laboratory will conduct laboratory control standard and method blank (MB) analyses per analytical batch of twenty samples. LCS/LCSD analyses are intended to provide information on the accuracy and precision of the analytical method and laboratory performance.

The purpose of the method blank is to determine the presence of, if any, and extent of contamination resulting from laboratory activities. If there is contamination in the method blank, the associated data must be carefully evaluated to determine if the data are valid. The analytical batch must meet the laboratory QA/QC acceptance criteria to certify that all results within the analytical batch are accurate and acceptable.

Analytical Batch Matrix Spikes/Matrix Spike Duplicates (MS/MSD)

The purpose of MS/MSD analyses is to check for accuracy and precision of the laboratory analyses and to demonstrate acceptable compound recovery at the analytical laboratory. Triple the normal sample volume may be required. Analytical batch MS/MSD analyses must be performed on site-specific field samples, identified in Table 5, and should be conducted, at a maximum, for every twenty samples for the following pollutants:

- Metals;
- Mercury; and
- Cyanide.

Laboratory Duplicate (DU) and Field Duplicate (FDU)

The purpose of the laboratory duplicate performed on site-specific sample (identified as DU) in the chain-of-custody form is to check consistency in laboratory and analytical procedures. Laboratory duplicates must be taken from the same sample container as the original sample (SA). Field duplicates (FDU) are site-specific field duplicate collected in the field and poured into a separate container (see definition of field duplicate above) and are analyzed separately from the original sample.

Data Verification

After analytical results are received from the laboratory, the data will be verified with the following procedures:

- Check the adequacy of the results obtained from the analyses of blanks, spikes, and duplicates (according to acceptability criteria set forth in *Standard Methods*);
- Check the data set for outlier values and, accordingly, request reanalysis of samples where appropriate; and
- Perform in-house verification of all analytical data results. This may include, but is not limited to:
    - Check that all samples were analyzed within the maximum holding time; and
    - Check that all laboratory QA/QC parameters meet laboratory-established criteria. Any results reported outside the QA/QC acceptance range must be qualified with a narrative explaining why the sample result is or is not acceptable.

LOCAL LIMITS DERIVATION

Industrial users discharging to POTWs may be subject to any of the following restrictions:

- Narrative discharge prohibitions;
- National USEPA categorical pretreatment standards; and/or
- POTW-specific (and possibly industry-specific) local limits.

Narrative Discharge Prohibitions

Narrative local limits provide non-numeric restrictions to protect against such problems as violations of final effluent, biosolids, or air quality standards, treatment process inhibition or upset, flow obstruction in the collection system or at the POTW, fire and explosion hazard, or work safety hazard. Narrative limits often serve as a supplement to numeric limits, or are used for parameters where technically-based numeric limits are not feasible or relevant. Narrative discharge prohibitions are typically identified in the Sewer Use Ordinance and industrial user permit.

National USEPA Categorical Pretreatment Standards

Categorical standards are predetermined discharge limitations, based upon best available technologies (BATs), which apply to specific categories of industries defined by existing federal regulations (40 CFR 405 through 471). Categorical standards are applied to the end of an industrial user's regulated process, and not necessarily at the end-of-pipe. Both categorical and local limits apply to industrial users, as appropriate.

POTW-specific Local Limits

Numeric local limits are intended to apply to all industrial users, as defined under the Pretreatment Program, unless specific exceptions can be justified. Local limit derivation is typically based on the following factors:

- Final effluent and/or receiving water quality limitations;
- In-plant inhibition and/or upset of unit processes;
- Biosolids disposal limits; and/or
- Collection system concerns (i.e., flow obstruction, corrosion, worker safety).

According to Local Limits Guidance, numeric local limits can be applied by the City to industrial users using any of the following allocation methods:

- Limits based on industrial user contribution of a POC;
- Uniform limits for all industrial users;
- Industrial user needs for POC discharge loading on a case-by-case basis; and/or

- Other creative allocation methods.

Schedule for Local Limits Development

Local limits sampling will be conducted from September to November based on the detention time of the Plant processes. A local limits report presenting the maximum allowable industrial loadings (MAILs) will be completed in early 2015.

REFERENCES

California Regional Water Quality Control Board Central Valley Region. National Pollutant Discharge Elimination System Permit Renewal (NPDES No. CA0079049) Order No. R2-2013-0127. October 2013.

United States Environmental Protection Agency. Local Limits Development Guidance. July 2004.

United States Environmental Protection Agency. Sampling Ambient Water for Determination of Metals at EPA Water Quality Criteria Levels (Method 1669). April 1995.

APPENDIX A

Maximum Reporting Limits and Analytical Methods

Table A-1. Maximum Reporting Limits and Analytical Methods

Constituent	Maximum Reporting Limit	Units	Analytical Method
Conventional			
Ammonia as N	0.1	mg/L	SM 4500-NH_3-C
Biochemical oxygen demand (BOD)	5	mg/L	SM 5210B
Sulfide as S	0.1	mg/L	SM 4500-S^2-D
Total suspended solids (TSS)	3	mg/L	SM 2540D
Metals & Cyanide			
Arsenic	0.5	μg/L	EPA 200.8
Cadmium	0.1	μg/L	EPA 200.8
Chromium (Total)	0.5	μg/L	EPA 200.8
Copper	0.5	μg/L	EPA 200.8
Lead	0.25	μg/L	EPA 200.8
Mercury	0.0005	μg/L	EPA 1631E
Molybdenum	0.25	μg/L	EPA 200.8
Nickel	0.5	μg/L	EPA 200.8
Selenium	1	μg/L	EPA 200.8
Silver	0.1	μg/L	EPA 200.8
Zinc	1	μg/L	EPA 200.8
Cyanide	3	μg/L	SM 4500-CN-E
Biosolids Parameters			
Percent solids	0.1	%	SM 2540G
Specific gravity	0.1	Units	SM 2710F

APPENDIX B

Sampling Schedule

In addition to collecting samples, other tasks will be performed during the sampling period include the following:

Set-up activities

- Set-up composite sampler with new silicone tubing.
- Install new battery for sampler.
- Calibrate and program composite sampler.
- Install clean composite sample container.
- Start composite sampler.

Sampling day activities

- Remove full composite sample container from composite sampler.
- Install clean composite sample container and start sampler.
- Pour off composite sample container contents into appropriate individual containers.
- Deliver daily samples to laboratory for analyses.

The following table lists the POCs that will be collected on each day, including the QA/QC samples and the number and type of containers that need to be filled.

Table B-1. Sampling Schedule

Sampling Day	Samples to Collect		Sample Containers Required [1]
	Composite	Grab	
Collection System			
Day 0	Metals (field blank) [2]		1 – 500 mL HDPE HNO_3
Day 1	BOD Metals [2] TSS	Ammonia as N Cyanide (+field blank) Mercury (+field blank) Sulfide as S Field parameters [3]	1 – 1 L HDPE 1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 2 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 2	BOD Metals [2] TSS	Ammonia as N Mercury Cyanide Sulfide as S Field parameters [3]	1 – 1 L HDPE 1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 3	BOD Metals [2] TSS	Ammonia as N Mercury Cyanide Sulfide as S Field parameters [3]	1 – 1 L HDPE 1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 4	BOD Metals [2] TSS	Ammonia as N Mercury Cyanide Sulfide as S Field parameters [3]	1 – 1 L HDPE 1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 5	BOD Metals [2] TSS	Ammonia as N Mercury Cyanide Sulfide as S Field parameters [3]	1 – 1 L HDPE 1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 6	BOD Metals [2] TSS (field duplicate)	Ammonia as N Mercury Cyanide Sulfide as S Field parameters [3] (field duplicate)	2 – 1 L HDPE 2 – 500 mL glass HCl 2 – 500 mL HDPE HNO_3 2 – 500 mL HDPE H_2SO_4 2 – 500 mL HDPE NaOH 2 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 7	BOD Metals [2] TSS	Ammonia as N Mercury Cyanide Sulfide as S Field parameters [3]	1 – 1 L HDPE 1 – 500 mL HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$

Sampling Day	Samples to Collect		Sample Containers Required [1]
	Composite	Grab	
Plant Influent			
Day 0	Metals (field blank) [2]		1 – 500 mL HDPE HNO_3
Day 1	Metals [2]	Ammonia as N Mercury Cyanide (+field blank) Sulfide as S Field parameters [3]	1 – 500 mL HDPE HNO_3 1 – 500 mL glass HCl 1 – 500 mL HDPE H_2SO_4 2 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 2	Metals [2]	Ammonia as N Mercury Cyanide Sulfide as S Field parameters [3]	1 – 500 mL HDPE HNO_3 1 – 500 mL glass HCl 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 3	Metals [2] (laboratory duplicate)	Ammonia as N Mercury Cyanide Sulfide as S Field parameters [3] (laboratory duplicate)	1 – 500 mL HDPE HNO_3 1 – 500 mL glass HCl 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 4	Metals (+MS/MSD) [2]	Ammonia as N Mercury (+MS/MSD) Cyanide (+MS/MSD) Sulfide as S Field parameters [3]	3 – 500 mL HDPE HNO_3 3 – 500 mL glass HCl 1 – 500 mL HDPE H_2SO_4 3 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 5	Metals [2]	Ammonia as N Mercury Cyanide Sulfide as S Field parameters [3]	1 – 500 mL HDPE HNO_3 1 – 500 mL glass HCl 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 6	Metals [2]	Ammonia as N Mercury Cyanide Sulfide as S Field parameters [3]	1 – 500 mL HDPE HNO_3 1 – 500 mL glass HCl 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 7	Metals [2]	Ammonia as N Mercury Cyanide Sulfide as S Field parameters [3]	1 – 500 mL HDPE HNO_3 1 – 500 mL glass HCl 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Plant Primary Treatment Effluent			
Day 0	Metals (field blank) [4]		1 – 500 mL HDPE HNO_3
Day 1	Metals [4]	Ammonia as N Cyanide (+field blank) Mercury (+field blank) Sulfide as S Field parameters [3]	2 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 2 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$

Sampling Day	Samples to Collect		Sample Containers Required [1]
	Composite	Grab	
Day 2	Metals [4]	Ammonia as N Cyanide Mercury Sulfide as S Field parameters [3]	1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 3	Metals [4] (field duplicate)	Ammonia as N Cyanide Mercury Sulfide as S Field parameters [3] (field duplicate)	2 – 500 mL glass HCl 2 – 500 mL HDPE HNO_3 2 – 500 mL HDPE H_2SO_4 2 – 500 mL HDPE NaOH 2 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 4	Metals [4]	Ammonia as N Cyanide Mercury Sulfide as S Field parameters [3]	1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 5	Metals [4]	Ammonia as N Cyanide Mercury Sulfide as S Field parameters [3]	1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 6	Metals [4]	Ammonia as N Cyanide Mercury Sulfide as S Field parameters [3]	1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 7	Metals [4]	Ammonia as N Cyanide Mercury Sulfide as S Field parameters [3]	1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Plant Final Effluent (Willow Slough Bypass)			
Day 0	Metals (field blank) [2]		1 – 500 mL HDPE HNO_3
Day 1	Metals [2]	Ammonia as N Cyanide (+field blank) Mercury (+field blank) Field parameters [3]	2 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 2 – 500 mL HDPE NaOH
Day 2	Metals [2]	Ammonia as N Cyanide Mercury Field parameters [3]	1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH
Day 3	Metals [2]	Ammonia as N Cyanide Mercury Field parameters [3]	1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH

Sampling Day	Samples to Collect		Sample Containers Required [1]
	Composite	Grab	
Day 4	Metals [2]	Ammonia as N Cyanide Mercury Field parameters [3]	1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH
Day 5	Metals (+MS/MSD) [2]	Ammonia as N Cyanide (+MS/MSD) Mercury (+MS/MSD) Field parameters [3]	3 – 500 mL glass HCl 3 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 3 – 500 mL HDPE NaOH
Day 6	Metals [2]	Ammonia as N Cyanide Mercury Field parameters [3]	1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH
Day 7	Metals [2] (laboratory duplicate)	Ammonia as N Cyanide Mercury Field parameters [3] (laboratory duplicate)	1 – 500 mL glass HCl 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH
Plant Anaerobic Digester Effluent			
Day 1		Ammonia as N Cyanide Metals [5] Sulfide as S Percent solids Specific gravity	1 – 500 mL HDPE 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$
Day 2		Ammonia as N Cyanide Metals [5] Sulfide as S Percent solids Specific gravity	1 – 500 mL HDPE 1 – 500 mL HDPE HNO_3 1 – 500 mL HDPE H_2SO_4 1 – 500 mL HDPE NaOH 1 – BOD bottle NaOH, $ZnC_2H_3O_2$

(1) Sample volume and container size listed above are recommendation only. Sample size and number of containers may be reduced as long as the sample volume meets the minimum analytical volume criteria of the analytical laboratory.

(2) Metals (total recoverable) include arsenic, cadmium, chromium, copper, lead, molybdenum, nickel, selenium, silver, zinc.

(3) Field parameters include electrical conductivity, pH, and temperature.

(4) Metals (total recoverable) include arsenic, cadmium, chromium, copper, lead, nickel, zinc.

(5) Metals (total recoverable) include arsenic, cadmium, chromium, copper, lead, nickel, silver, zinc.

APPENDIX C

Sampling Equipment List

At a minimum, the following list of equipment will be required for local limits sample collection:

- Four (4) automated peristaltic samplers for composite sample collection.
- New silicone tubing for the composite samplers.
- Strainers for influent and collection system intake tubing.
- Powder-free nitrile gloves for clean sampling.
- Sampling containers and field blank water as listed in the following tables:

Table C-1. Sample Container Requirements by Sampling Site

Sample Type	Pollutant	Containers (1)
Collection System		
Composite (2)	BOD, TSS (+1 field duplicate)	8 – 1 L HDPE
	Metals (+1 field blank, +1 field duplicate)	9 – 500 mL HDPE HNO_3
Grab	Ammonia as N (+1 field duplicate)	8 – 500 mL HDPE H_2SO_4
	Mercury (+1 field blank, +1 field duplicate)	9 – 500 mL glass HCl
	Cyanide (+1 field blank, +1 field duplicate)	9 – 500 mL HDPE NaOH
	Sulfide as S (+1 field duplicate)	8 – BOD bottle NaOH, $ZnC_2H_3O_2$
Plant Influent		
Composite (2)	Metals (+1 field blank, +1 MS/MSD, +1 laboratory duplicate)	10 – 500 mL HDPE HNO_3
Grab	Ammonia as N (+1 laboratory duplicate)	7 – 500 mL HDPE H_2SO_4
	Mercury (+1 field blank, +1 MS/MSD, +1 laboratory duplicate)	10 – 500 mL glass HCl
	Cyanide (+1 field blank, +1 MS/MSD, +1 laboratory duplicate)	10 – 500 mL HDPE NaOH
	Sulfide as S (+1 laboratory duplicate)	7 – BOD bottle NaOH, $ZnC_2H_3O_2$
Plant Primary Treatment Effluent		
Composite (2)	Metals (+1 field blank, +1 field duplicate)	9 – 500 mL HDPE HNO_3
Grab	Ammonia as N (+1 field duplicate)	8 – 500 mL HDPE H_2SO_4
	Cyanide (+1 field blank, +1 field duplicate)	9 – 500 mL HDPE NaOH
	Mercury (+1 field blank, +1 field duplicate)	9 – 500 mL glass HCl
	Sulfide as S (+1 field duplicate)	8 – BOD bottle NaOH, $ZnC_2H_3O_2$
Plant Final Effluent (Willow Slough Bypass)		
Composite (2)	Metals (+1 field blank, +1 MS/MSD, +1 laboratory duplicate)	10 – 500 mL HDPE HNO_3
Grab	Ammonia as N (+1 laboratory duplicate)	7 – 500 mL HDPE H_2SO_4

Sample Type	Pollutant	Containers [1]
	Cyanide (+1 field blank, +1 MS/MSD, +1 laboratory duplicate)	10 – 500 mL HDPE NaOH
	Mercury (+1 field blank, +1 MS/MSD, +1 laboratory duplicate)	10 – 500 mL glass HCl
Plant Anaerobic Digester Effluent		
Grab	Ammonia as N	2 – 500 mL HDPE H_2SO_4
	Cyanide	2 – 500 mL HDPE NaOH
	Metals	2 – 500 mL HDPE HNO_3
	Percent solids; Specific gravity	2 – 500 mL HDPE
	Sulfide as S	2 – BOD bottle NaOH, $ZnC_2H_3O_2$

(1) Sample volume and container size listed above are recommendation only. Sample size and number of containers may be reduced as long as the sample volume meets the minimum analytical volume criteria of the analytical laboratory.

(2) Collected in a clean 10-liter borosilicate glass or high-density polyethylene (HPDE) bottle to be split into individual sample containers.

Table C-2. Total Sample Container and Blank Water Requirements

Container Type	Number	Blank Water Requirements
1 L HDPE	8	0
500 mL HDPE	2	0
500 mL HDPE HNO_3	40	4
500 mL HDPE H_2SO_4	32	0
500 mL HDPE NaOH	40	4
BOD bottle NaOH, $ZnC_2H_3O_2$	25	0
500 mL glass HCl	40	4

(1) Sample volume and container size listed above are recommendation only. Sample size and number of containers may be reduced as long as the sample volume meets the minimum analytical volume criteria of the analytical laboratory.

APPENDIX D

Sampling Procedures

GENERAL SAMPLING PROCEDURES

All sampling will be conducted in accordance with the City's Health and Safety Plan.

"Clean sampling" techniques are required to collect and handle wastewater samples in a way that does not result in contamination, loss, or change in the chemical form of the POC. Samples are collected using rigorous protocols, based on EPA Method 1669, as summarized below:

- All sampling will be conducted by two personnel using clean-hand/dirty-hand sampling procedures.
- Samples are collected only into pre-cleaned sample containers.
- Clean, powder-free nitrile gloves are required to be worn for collection of samples for metals and organic pollutants.
- Gloves are changed whenever something not known to be clean has been touched.
- For this sampling plan, clean techniques must be employed whenever handling the composite containers, lids, suction tubing, or strainers.
- To reduce potential contamination, sample collection personnel must adhere to the following rules while collecting samples:
  - No smoking.
  - Never sample near a running vehicle. Do not park vehicles in the immediate sample collection area (even non-running vehicles).
  - Do not eat or drink during sample collection.
  - Do not breathe, sneeze, or cough in the direction of an open sample container.

SAMPLING AND HANDLING PROCEDURES

Composite Sampling Procedures

- Composite samples will be collected with an ISCO 3700 battery-operated sampler.
- The composite sampler will be thoroughly cleaned before initial use. If conditions warrant, intake tubing may be rinsed in the field at the sampling site with laboratory-grade de-ionized water only.
- The composite sampler will be programmed using a variable collection time sequence.
- One continuous piece of new silicone tubing will be used for the pump and intake tube. The same silicone tubing will be used for the entire sampling effort and any follow-up and/or rescheduled sampling events. In the event of a rescheduled sampling event, the silicone tubing will be rinsed for three (3) minutes with

laboratory-grade de-ionized water and stored in a sealed plastic bag in the laboratory refrigerator until needed.

- The sample intake tube will be as short as possible.
- An intake rinse will not be used; however a 100-count post-purge will be used.
- Metal strainers will not be used.
- A cooling agent (i.e., ice) will be used in the base of the composite sampler to maintain sample preservation requirements.
- Pre-cleaned certified one (1) gallon HDPE containers will be used in the composite sampler. Even if no sample is collected, the sample container will be replaced with a new sample container daily.
- Composite samples will be split at the Plant laboratory into the appropriate sample containers. Samples will be transported to the analytical laboratory on ice in an ice chest.
- The actual start and stop time and number of sample aliquots collected will be noted on the chain-of-custody forms. Unusual condition(s) and flow conditions will be noted on a field log attached to the chain-of-custody form.

Grab Sampling Procedures

- A stainless steel bail will be used to collect grab sample(s). The bail will be cleaned daily with laboratory soap at the Plant, rinsed with hot water, and triple rinsed with laboratory-grade de-ionized water. After each cleaning, the bail will be stored in a new plastic bag until its next use.
- Samples will be dispensed from the bail directly into the appropriate sample container in the field. Sample containers will be stored and transported in an ice chest.

Unusual Sampling Conditions Procedures

- If a composite sampler malfunctions or does not collect a sample, determine the cause and correct. If the cause cannot be quickly and definitively determined, use the back-up composite sampler for sample collection. Switch the intake tubing to the back-up composite sampler. Complete the chain-of-custody form as filed and note all observed conditions. Reschedule the sample collection for the following week on the same day with the same settings. Use the same intake tubing, types of containers, procedures, etc. as used during the initial sample collection events.
- If the composite sampler collects low sample volume (e.g., less than 75 percent of the sample container volume), determine the cause. If the cause cannot be determined, replace the composite sampler with the back-up composite sampler for sample collection and note on the chain-of-custody form. Switch the intake tubing to the back-up composite sampler. Complete the chain-of-custody form as filed and note all observed conditions. Reschedule the sample collection for

the following week on the same day with the same settings. Use the same intake tubing, types of containers, procedures, etc. as used during the initial sample collection events. Take the available sample collected to the Plant laboratory and split into the appropriate sample containers. Determine if the sample(s) will be submitted for analyses. Composite sample analysis priority is as follows:

  - Metals
  - BOD/TSS

- In the event there is only one person at the sampling location, servicing the sample and restarting for the next sample is the priority within the time frame allotted. If warranted, grab sample(s) can be delayed to accommodate these other tasks first. Provide a note on the chain-of-custody form or field log.
- If sample is compromised during splitting at the Plant laboratory or damaged in transit, a resampling event will be scheduled for the following week (same day and settings).

Cleaning Instructions for Composite Samplers at the Plant

- Pre-cleaned certified one (1) gallon HDPE sample containers will be used. Even if no sample is collected, the sample container will be replaced with a new sample container daily.
- All tubing will be replaced with clean tubing prior to initiation of local limits sampling.
- Metal strainers will not be used.
- Sampling cup will be acid-washed with a 1% HCl solution by soaking for one hour in 1% HCl solution followed by triple rinsing with laboratory-grade de-ionized water and allowed to air-dry.
- Re-assemble sampling cup to the composite sampler prior to initial start-up.

Composite Sampler Programming and Cancellation for Flow-Weighted Sampling

This procedure is used for Manning samplers with the keypad entry system.

- Press “Flow”.
- Press “Delay Start”.
- Enter “0001” for the Inf. composite sampler. Enter “0020” for 001 – Effluent, Primary Effluent.
- Press “Start”.
- Press “Test Cycle”, then “1” (for the number of test cycles) and “Enter”. This will initiate a sampling cycle to check sampler operation.
- To cancel the sampler program, press “Reset” twice.

APPENDIX B

USEPA Default Information; Biosolids Disposal Regulations; and NPDES Permit Restrictions

United States
Environmental Protection
Agency

Office of Wastewater
Management 4203

EPA 833-R-04-002B
July 2004

Local Limits Development Guidance Appendices

POLLUTANTS REGULATED BY CATEGORICAL PRETREATMENT STANDARDS

	Aluminum Forming	Battery Manufacturing	Carbon Black Manufacturing	Centralized Waste Treatment	Coil Coating	Copper Forming	Electrical and Electronic Components	Electroplating	Feedlots	Fertilizer Manufacturing	Glass Manufacturing	Grain Mills	Ink Formulating	Inorganic Chemicals Manufacturing	Iron and Steel Manufacturing	Leather Tanning and Finishing	Metal Finishing	Metal Molding and Casting	Nonferrous Metals Form./Metal Powders	Nonferrous Metals Manufacturing	Oil and Gas	Organic Chems., Plastics, and Syn. Fibers	Paint Formulating	Paving and Roofing Materials	Pesticide Chemicals	Petroleum Refining	Pharmaceutical Manufacturing	Porcelain Enameling	Pulp, Paper, and Paperboard	Rubber Manufacturing	Soap and Detergent Manufacturing	Steam Electric Power Generating	Timber Products Processing	Transportation Equip. Cleaning	Waste Combustors
Flow Restrictions Only									X				X								X		X								X				
Ammonia (as N)										X					X				X	X						X	X								
BOD												X																							
COD														X																X					
Fluoride					X		X				X			X					X	X															
Nitrate (as N)										X																									
Oil and Grease	X		X		X	X												X						X		X				X			X		
Oil (mineral)											X																								
Organic Nitrogen (as N)										X																									
pH										X				X		X																			
Phenols															X			X		X															
Phosphorus					X					X																									
Sulfide																X																			
TSS												X																							X
1,1-Dichloroethane					X			X									X					X										X			
1,1-Dichloroethylene					X		X	X									X					X			X							X			
1,1,1-Trichloroethane					X	X	X	X									X	X				X			X							X			
1,1,2-Trichloroethane							X	X									X					X										X			
1,1,2,2-Tetra-chloroethane					X			X									X															X			
1,2-Dichlorobenzene							X	X									X					X			X		X					X			
1,2-Dichloroethane							X	X									X					X			X		X					X			
1,2-Dichloropropane								X									X					X			X							X			
1,2-Diphenyl-hydrazine	X						X	X									X															X			
1,2-trans-Dichloroethylene								X									X					X			X							X			

	Aluminum Forming	Battery Manufacturing	Carbon Black Manufacturing	Centralized Waste Treatment	Coil Coating	Copper Forming	Electrical and Electronic Components	Electroplating	Feedlots	Fertilizer Manufacturing	Glass Manufacturing	Grain Mills	Ink Formulating	Inorganic Chemicals Manufacturing	Iron and Steel Manufacturing	Leather Tanning and Finishing	Metal Finishing	Metal Molding and Casting	Nonferrous Metals Form./Metal Powders	Nonferrous Metals Manufacturing	Oil and Gas	Organic Chems., Plastics, and Syn. Fibers	Paint Formulating	Paving and Roofing Materials	Pesticide Chemicals	Petroleum Refining	Pharmaceutical Manufacturing	Porcelain Enameling	Pulp, Paper, and Paperboard	Rubber Manufacturing	Soap and Detergent Manufacturing	Steam Electric Power Generating	Timber Products Processing	Transportation Equip. Cleaning	Waste Combustors
1,2,4-Trichloro-benzene							X	X									X					X										X			
1,3-Dichloro-benzene							X	X									X					X										X			
1,3-Dichloro-propene								X									X					X			X							X			
1,4-Dichloro-benzene							X	X									X					X			X							X			
2-Chloroethyl vinyl ether (mixed)								X									X															X			
2-Chloro-naphthalene								X									X															X			
2-Chlorophenol	X						X	X									X	X														X			
2-Nitrophenol							X	X									X					X										X			
2,3-Dichloro-aniline				X																															
2,3,4,6-Tetra-chlorophenol																													X						
2,4-Dichlorophenol							X	X									X	X														X			
2,4-Dimethyl-phenol								X									X	X														X			
2,4-Dinitrophenol								X									X															X			
2,4-Dinitro-toluene	X							X									X															X			
2,4,5-Trichloro-phenol																													X						
2,4,6-Trichloro-phenol				X			X	X									X	X											X			X			
2,6-Dinitro-toluene						X		X									X															X			
3,3-Dichloro-benzidine								X									X															X			
3,4,5-Trichloro-catechol																													X						
3,4,5-Trichloro-guaiacol																													X						
3,4,6-Trichloro-catechol																													X						
3,4,6-Trichloro-guaiacol																													X						
4-Bromophenyl phenyl ether								X									X															X			

	Aluminum Forming	Battery Manufacturing	Carbon Black Manufacturing	Centralized Waste Treatment	Coil Coating	Copper Forming	Electrical and Electronic Components	Electroplating	Feedlots	Fertilizer Manufacturing	Glass Manufacturing	Grain Mills	Ink Formulating	Inorganic Chemicals Manufacturing	Iron and Steel Manufacturing	Leather Tanning and Finishing	Metal Finishing	Metal Molding and Casting	Nonferrous Metals Form./Metal Powders	Nonferrous Metals Manufacturing	Oil and Gas	Organic Chems., Plastics, and Syn. Fibers	Paint Formulating	Paving and Roofing Materials	Pesticide Chemicals	Petroleum Refining	Pharmaceutical Manufacturing	Porcelain Enameling	Pulp, Paper, and Paperboard	Rubber Manufacturing	Soap and Detergent Manufacturing	Steam Electric Power Generating	Timber Products Processing	Transportation Equip. Cleaning	Waste Combustors
4-Chlorophenyl phenyl ether								X									X															X			
4-Nitrophenol							X	X									X	X				X										X			
4,4-DDD								X									X															X			
4,4-DDE								X									X															X			
4,4-DDT								X									X															X			
4,5,6-Trichloro-quaiacol																													X						
4,6-Dinitro-o-cresol								X									X					X										X			
Acenaphthene	X							X									X	X				X										X			
Acenaphthylene	X							X									X	X														X			
Acetone																											X								
Acrolein								X									X															X			
Acrylonitrile								X									X															X			
Aldrin								X									X															X			
Alpha-BHC								X									X															X			
Alpha-endosulfan								X									X															X			
Anthracene	X					X	X	X									X	X				X										X			
Benzene						X		X									X	X				X			X		X					X			
Benzidine								X									X															X			
Benzo (b) fluoranthene	X							X									X	X														X			
Benzo (a) anthracene								X									X	X														X			
Benzo (ghi) perylene	X							X									X															X			
Benzo (a) pyrene	X							X									X	X		X												X			
Benzo (k) fluoranthene								X									X	X														X			
Beta-BHC								X									X															X			
Beta-endosulfan								X									X															X			
Bis (2-chloro-ethoxy) methane								X									X															X			
Bis (2-chloro-isopropyl) ether								X									X															X			
Bis (2-chloro-ethyl) ether					X			X									X															X			
Bis (2-ethyl-hexyl) phthalate	X			X	X		X	X									X	X				X										X			
Bromoform								X									X								X							X			

	Aluminum Forming	Battery Manufacturing	Carbon Black Manufacturing	Centralized Waste Treatment	Coil Coating	Copper Forming	Electrical and Electronic Components	Electroplating	Feedlots	Fertilizer Manufacturing	Glass Manufacturing	Grain Mills	Ink Formulating	Inorganic Chemicals Manufacturing	Iron and Steel Manufacturing	Leather Tanning and Finishing	Metal Finishing	Metal Molding and Casting	Nonferrous Metals Form./Metal Powders	Nonferrous Metals Manufacturing	Oil and Gas	Organic Chems., Plastics, and Syn. Fibers	Paint Formulating	Paving and Roofing Materials	Pesticide Chemicals	Petroleum Refining	Pharmaceutical Manufacturing	Porcelain Enameling	Pulp, Paper, and Paperboard	Rubber Manufacturing	Soap and Detergent Manufacturing	Steam Electric Power Generating	Timber Products Processing	Transportation Equip. Cleaning	Waste Combustors
Butyl benzyl phthalate					X		X	X									X	X														X			
Carbon tetrachloride							X	X									X					X			X							X			
Carbazole				X																															
Chlordane (tech. mix. & metabolites)								X									X															X			
Chlorobenzene								X									X	X				X			X		X					X			
Chlorodibromo-methane								X									X								X							X			
Chloroethane								X									X					X										X			
Chloroform					X	X	X	X									X	X				X			X		X		X			X			
Chrysene	X							X									X	X														X			
Cresol				X																															
Delta-BHC								X									X															X			
Di-n-butyl phthalate	X				X		X	X									X	X														X			
Di-n-octyl phthalate								X									X															X			
Dibenzo (a,h) anthracene	X							X									X															X			
Dichlorobromo-methane							X	X									X								X							X			
Dieldrin								X									X															X			
Diethyl phthalate	X							X									X	X				X										X			
Diethylamine																											X								
Dimethyl phthalate								X									X	X				X										X			
Endosulfan sulfate	X							X									X															X			
Endrin	X							X									X															X			
Endrin aldehyde	X							X									X															X			
Ethyl acetate																											X								
Ethylbenzene	X					X	X	X									X					X			X							X			
Fluoranthene	X			X				X									X	X				X										X		X	
Fluorene	X							X									X	X				X										X			
Gamma-BHC								X									X															X			
Heptachlor epoxide								X									X															X			
Heptachlor								X									X															X			

	Aluminum Forming	Battery Manufacturing	Carbon Black Manufacturing	Centralized Waste Treatment	Coil Coating	Copper Forming	Electrical and Electronic Components	Electroplating	Feedlots	Fertilizer Manufacturing	Glass Manufacturing	Grain Mills	Ink Formulating	Inorganic Chemicals Manufacturing	Iron and Steel Manufacturing	Leather Tanning and Finishing	Metal Finishing	Metal Molding and Casting	Nonferrous Metals Form./Metal Powders	Nonferrous Metals Manufacturing	Oil and Gas	Organic Chems., Plastics, and Syn. Fibers	Paint Formulating	Paving and Roofing Materials	Pesticide Chemicals	Petroleum Refining	Pharmaceutical Manufacturing	Porcelain Enameling	Pulp, Paper, and Paperboard	Rubber Manufacturing	Soap and Detergent Manufacturing	Steam Electric Power Generating	Timber Products Processing	Transportation Equip. Cleaning	Waste Combustors
Hexachloro-benzene								X									X			X		X										X			
Hexachlorobuta-diene								X									X															X			
Hexachlorocyclo pentadiene								X									X					X										X			
Hexachloro-ethane								X									X					X										X			
Indeno (1,2,3-cd)pyrene	X							X									X															X			
Isobutylaldehyde																											X								
Isophorone	X						X	X									X															X			
Isopropyl acetate																											X								
Isopropyl ether																											X								
Methyl formate																											X								
Methyl bromide								X									X								X							X			
Methyl cellosolve																											X								
Methyl Isobutyl Ketone																											X								
Methyl chloride								X									X					X			X							X			
Methylene chloride					X	X	X	X									X	X				X			X		X					X			
n-Amyl acetate																											X								
n-Butyl acetate																											X								
n-Decane				X																															
n-Heptane																											X								
n-Hexane																											X								
N-nitrosodi-n-propylamine								X									X		X										X			X			
N-nitrosodi-methylamine								X									X		X													X			
N-nitrosodi-phenylamine	X					X		X									X		X													X			
n-Octadecane				X																															
Naphthalene	X					X	X	X							X		X	X				X			X							X			
Nitrobenzene								X									X					X										X			
Non-polar material (SGT-HEM)																																		X	
Parachloro-metacresol	X							X									X	X														X			
PCB–1016	X							X									X															X			

	Aluminum Forming	Battery Manufacturing	Carbon Black Manufacturing	Centralized Waste Treatment	Coil Coating	Copper Forming	Electrical and Electronic Components	Electroplating	Feedlots	Fertilizer Manufacturing	Glass Manufacturing	Grain Mills	Ink Formulating	Inorganic Chemicals Manufacturing	Iron and Steel Manufacturing	Leather Tanning and Finishing	Metal Finishing	Metal Molding and Casting	Nonferrous Metals Form./Metal Powders	Nonferrous Metals Manufacturing	Oil and Gas	Organic Chems., Plastics, and Syn. Fibers	Paint Formulating	Paving and Roofing Materials	Pesticide Chemicals	Petroleum Refining	Pharmaceutical Manufacturing	Porcelain Enameling	Pulp, Paper, and Paperboard	Rubber Manufacturing	Soap and Detergent Manufacturing	Steam Electric Power Generating	Timber Products Processing	Transportation Equip. Cleaning	Waste Combustors
PCB–1221	X							X									X															X			
PCB–1232	X							X									X															X			
PCB–1242	X							X									X															X			
PCB–1248	X							X									X															X			
PCB–1254	X							X									X															X			
PCB–1260	X							X									X															X			
Pentachloro-phenol					X		X	X									X	X														X			
Phenanthrene	X				X	X		X									X	X				X										X		X	
Phenol	X						X	X									X	X														X			
Pyrene	X							X									X	X				X										X			
TCDF																													X						
Tetrachloro-catechol																													X						
Tetrachloro-ethylene	X				X		X	X							X		X	X				X			X							X			
Tetrachloro-guaiacol																													X						
Tetrahydrofuran																											X								
Toluene	X				X	X	X	X									X	X				X			X		X					X			
Toxaphene								X									X															X			
Trichloro-ethylene	X					X	X	X									X	X				X										X			
Trichlorosyringol																													X						
Triethylamine																											X								
Vinyl chloride								X									X					X										X			
Xylenes																											X								
2,3,7,8-tetrachloro-dibenzo-p-dioxin								X									X												X			X			
Organic Pesticide Active Ingredients																									X										
Antimony				X			X							X					X	X												X			
Arsenic				X			X							X						X												X	X		X
Asbestos																																X			
Barium				X																															
Beryllium																				X												X			
Cadmium		X		X			X	X						X			X		X	X												X		X	X
Chromium, Total	X	X		X	X	X	X	X						X	X	X	X		X	X						X		X		X		X	X	X	X

	Aluminum Forming	Battery Manufacturing	Carbon Black Manufacturing	Centralized Waste Treatment	Coil Coating	Copper Forming	Electrical and Electronic Components	Electroplating	Feedlots	Fertilizer Manufacturing	Glass Manufacturing	Grain Mills	Ink Formulating	Inorganic Chemicals Manufacturing	Iron and Steel Manufacturing	Leather Tanning and Finishing	Metal Finishing	Metal Molding and Casting	Nonferrous Metals Form./Metal Powders	Nonferrous Metals Manufacturing	Oil and Gas	Organic Chems., Plastics, and Syn. Fibers	Paint Formulating	Paving and Roofing Materials	Pesticide Chemicals	Petroleum Refining	Pharmaceutical Manufacturing	Porcelain Enameling	Pulp, Paper, and Paperboard	Rubber Manufacturing	Soap and Detergent Manufacturing	Steam Electric Power Generating	Timber Products Processing	Transportation Equip. Cleaning	Waste Combustors
Chromium, Hexavalent														X	X																				
Cobalt		X		X										X						X															
Copper		X		X	X	X		X						X			X	X	X	X												X	X	X	X
Cyanide, Total	X	X		X	X			X						X	X		X		X	X		X			X		X					X			
Cyanide, Amenable														X			X																		
Gold																				X															
Indium																				X															
Iron														X						X															
Lead		X		X		X	X	X						X	X		X	X	X	X		X			X			X		X		X		X	X
Manganese		X			X																														
Mercury		X		X										X						X												X		X	X
Molybdenum				X															X	X															
Nickel		X		X		X		X						X	X		X		X	X								X				X		X	
Palladium																				X															
Platinum																				X															
Selenium				X										X						X												X			
Silver		X		X				X						X			X		X	X												X			X
Tantalum																				X															
Thallium																																X			
Tin				X																X															
Titanium				X																X															X
Tungsten																				X															
Vanadium				X																															
Zinc	X	X		X	X	X	X	X						X	X		X	X	X	X		X						X	X	X		X		X	X

Source: Updated from the 1991 *National Pretreatment Program Report to Congress*, pp. 5-6.

APPENDIX G - LITERATURE INHIBITION VALUES

Pollutant	Reported Range of Activated Sludge Inhibition Threshold Levels, mg/L	References*
METALS/NONMETAL INORGANICS		
Ammonia	480	(4)
Arsenic	0.1	(1), (2), (3)
Cadmium	1 - 10	(2), (3)
Chromium (VI)	1	(2), (3)
Chromium (III)	10 - 50	(2), (3)
Chromium (Total)	1 - 100	(1)
Copper	1	(2), (1), (3)
Cyanide	0.1 - 5 5	(1), (2), (3) (1)
Iodine	10	(4)
Lead	1.0 - 5.0 10 - 100	(3) (1)
Mercury	0.1 - 1 2.5 as Hg (II)	(2), (3) (1)
Nickel	1.0 - 2.5 5	(2), (3) (1)
Sulfide	25 -30	(4)
Zinc	0.3 - 5 5 - 10	(3) (1)
ORGANICS		
Anthracene	500	(1)
Benzene	100 - 500 125 - 500	(3) (1)
2-Chlorophenol	5 20 - 200	(2) (3)
1,2 Dichlorobenzene	5	(2)
1,3 Dichlorobenzene	5	(2)
1,4 Dichlorobenzene	5	(2)
2,4-Dichlorophenol	64	(3)
2,4 Dimethylphenol	40 - 200	(3)
2,4 Dinitrotoluene	5	(2)
1,2-Diphenylhydrazine	5	(2)
Ethylbenzene	200	(3)
Hexachlorobenzene	5	(2)
Naphthalene	500 500 500	(1) (2) (3)
Nitrobenzene	30 - 500 500 500	(3) (1) (2)

Pollutant	Reported Range of <u>Activated Sludge</u> Inhibition Threshold Levels, mg/L	References*
Pentachlorophenol	0.95 50 75 - 150	(2) (3) (1)
Phenanthrene	500 500	(1) (2)
Phenol	50 - 200 200 200	(3) (2) (1)
Toluene	200	(3)
2,4,6 Trichlorophenol	50 - 100	(1)
Surfactants	100 - 500	(4)

Pollutant	Reported Range of <u>Trickling Filter</u> Inhibition Threshold Levels, mg/L	References*
Chromium (III)	3.5 - 67.6	(1)
Cyanide	30	(1)

Pollutant	Reported Range of <u>Nitrification</u> Inhibition Threshold Levels, mg/L	References*
METALS/NONMETAL INORGANICS		
Arsenic	1.5	(2)
Cadmium	5.2	(1), (2)
Chloride	180	(4)
Chromium (VI)	1 - 10 [as $(CrO_4)^{2-}$]	(1)
Chromium (T)	0.25 - 1.9 1 - 100 (trickling filter)	(1), (2), (3) (1)
Copper	0.05 - 0.48	(2), (3)
Cyanide	0.34 - 0.5	(2), (3)
Lead	0.5	(2), (3)
Nickel	0.25 - 0.5 5	(2), (3) (1)
Zinc	0.08 - 0.5	(2), (3)
ORGANICS		
Chloroform	10	(2)
2,4-Dichlorophenol	64	(3)
2,4-Dinitrophenol	150	(2)
Phenol	4 4 - 10	(2) (3)

Pollutant	**Reported Range of Anaerobic Digestion Inhibition Threshold Levels, mg/L**	**References***
METALS/NONMETAL INORGANICS		
Ammonia	1500 - 8000	(4)
Arsenic	1.6	(1)
Cadmium	20	(3)
Chromium (III)	130	(3)
Chromium (VI)	110	(3)
Copper	40	(3)
Cyanide	4 - 100 1 - 4	(1) (2), (3)
Lead	340	(3)
Nickel	10 136	(2), (3) (1)
Silver	13 - 65**	(3)
Sulfate	500 - 1000	(4)
Sulfide	50 - 100	(4)
Zinc	400	(3)
ORGANICS		
Acrylonitrile	5 5	(3) (2)
Carbon Tetrachloride	2.9 - 159.4 10 - 20 2.0	(1) (3) (2)
Chlorobenzene	0.96 - 3 0.96	(1) (2)
Chloroform	1 5 - 16 10 - 16	(2) (1) (3)
1,2-Dichlorobenzene	0.23 - 3.8 0.23	(1) (2)
1,4-Dichlorobenzene	1.4 - 5.3 1.4	(1) (2)
Methyl chloride	3.3 - 536.4 100	(1) (2)
Pentachlorophenol	0.2 0.2 - 1.8	(2) (1)
Tetrachloroethylene	20	(2)
Trichloroethylene	1 - 20 20 20	(1) (2) (3)
Trichlorofluoromethane	-	(2)

* Total pollutant inhibition levels, unless otherwise indicated.
** Dissolved metal inhibition levels.

(1) Jenkins, D.I., and Associates. 1984. *Impact of Toxics on Treatment Literature Review*.

(2) Russell, L. L., C. B. Cain, and D.I. Jenkins. 1984. *Impacts of Priority Pollutants on Publicly Owned Treated Works Processes: A Literature Review*. 1984 Purdue Industrial Waste Conference.

(3) Anthony, R. M., and L. H. Briemburst. 1981. *Determining Maximum Influent Concentrations of Priority Pollutants for Treatment Plants*. Journal Water Pollution Control Federation 53(10):1457-1468.

(4) U.S. EPA. 1986, *Working Document; Interferences at Publicly Owned Treatment Works*. September 1986.

Source: *EPA's Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program*, December 1987, pp. 3-44 to 3-49.

22 CA ADC § 66261.24

22 CCR § 66261.24

Cal. Admin. Code tit. 22, § 66261.24

BARCLAYS OFFICIAL CALIFORNIA CODE OF REGULATIONS
TITLE 22. SOCIAL SECURITY
DIVISION 4.5. ENVIRONMENTAL HEALTH STANDARDS FOR THE MANAGEMENT OF HAZARDOUS WASTE
CHAPTER 11. IDENTIFICATION AND LISTING OF HAZARDOUS WASTE
ARTICLE 3. CHARACTERISTICS OF HAZARDOUS WASTE
This database is current through 5/2/08, Register 2008, No. 18

§ 66261.24. Characteristic of Toxicity.

(a) A waste exhibits the characteristic of toxicity if representative samples of the waste have any of the following properties:

(1) when using the Toxicity Characteristic Leaching Procedure (TCLP), test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, third edition and Updates (incorporated by reference in section 66260.11 of this division), the extracts from representative samples of the waste contain any of the contaminants listed in Table I of this section at a concentration equal to or greater than the respective value given in that table unless the waste is excluded from classification as a solid waste or hazardous waste or is exempted from regulation pursuant to 40 CFR section 261.4. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purposes of this section;

(A) a waste that exhibits the characteristic of toxicity pursuant to subsection (a)(1) of this section has the EPA Hazardous Waste Number specified in Table I of this section which corresponds to the toxic contaminant causing it to be hazardous;

(B) Table I - Maximum Concentration of Contaminants for the Toxicity Characteristic:

EPA Hazardous Waste Number	Contaminant	Chemical Abstracts Service Number	Regulatory Level Mg/l
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03

D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	200.0 [FN1]
D024	m-Cresol	108-39-4	200.0 [FN1]
D025	p-Cresol	106-44-5	200.0 [FN1]
D026	Cresol		200.0 [FN1]
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	0.13
D033	Hexachlorobutadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	5.0 [FN2]
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

[FN1]1 If o-, m- and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

[FN2]2 Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level .

(2) it contains a substance listed in subsections (a)(2)(A) or (a)(2)(B) of this section at a concentration in milligrams per liter of waste extract, as determined using the Waste Extraction Test (WET) described in Appendix II of this chapter, which equals or exceeds its listed soluble threshold limit concentration or at a concentration in milligrams per kilogram in the waste which equals or exceeds its listed total threshold limit concentration;

(A) Table II - List of Inorganic Persistent and Bioaccumulative Toxic Substances and Their Soluble Threshold Limit Concentration:

(STLC) and Total Threshold Limit Concentration (TTLC) Values.

Substance [FNa], [FNb]	STLC mg/l	TTLC Wet-Weight mg/kg
Antimony and/or antimony compounds	15	500
Arsenic and/or arsenic compounds	5.0	500
Asbestos		1.0 (as percent)
Barium and/or barium compounds (excluding barite)	100	10,000 [FNc]
Beryllium and/or beryllium compounds	0.75	75
Cadmium and/or cadmium compounds	1.0	100
Chromium (VI) compounds	5	500
Chromium and/or chromium (III) compounds	5 [FNd]	2,500
Cobalt and/or cobalt compounds	80	8,000
Copper and/or copper compounds	25	2,500
Fluoride salts	180	18,000
Lead and/or lead compounds	5.0	1,000
Mercury and/or mercury compounds	0.2	20
Molybdenum and/or molybdenum compounds	350	3,500 [FNe]
Nickel and/or nickel compounds	20	2,000
Selenium and/or selenium compounds	1.0	100
Silver and/or silver compounds	5	500
Thallium and/or thallium compounds	7.0	700
Vanadium and/or vanadium compounds	24	2,400
Zinc and/or zinc compounds	250	5,000

[FNa]a STLC and TTLC values are calculated on the concentrations of the elements, not the compounds.

[FNb]b In the case of asbestos and elemental metals, the specified concentration limits apply only if the substances are in a friable, powdered or finely divided state. Asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.In the case of asbestos and elemental metals, the specified concentration limits apply only if the substances are in a friable, powdered or finely divided state. Asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.In the case of asbestos and elemental metals, the specified concentration limits apply only if the substances are in a friable, powdered or finely divided state. Asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

[FNc]c excluding barium sulfate.

[FNd]d If the soluble chromium, as determined by the TCLP set forth in Appendix I of chapter 18 of this division, is less than 5 mg/l, and the soluble chromium, as determined by the procedures set forth in Appendix II of chapter 11, equals or exceeds 560 mg/l and the waste is not otherwise identified as a RCRA hazardous waste pursuant to section 66261.100, then the waste is a non-RCRA hazardous waste.

[FNe]e Excluding molybdenum disulfide.

(B) Table III - List of Organic Persistent and Bioaccumulative Toxic Substances and Their Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC) Values:

Substance	STLC mg/l	TTLC Wet Weight mg/kg
Aldrin	0.14	1.4
Chlordane	0.25	2.5
DDT, DDE, DDD	0.1	1.0
2,4-Dichlorophenoxyacetic acid	10	100
Dieldrin	0.8	8.0
Dioxin (2,3,7,8-TCDD)	0.001	0.01
Endrin	0.02	0.2
Heptachlor	0.47	4.7
Kepone	2.1	21
Lead compounds, organic	-	13
Lindane	0.4	4.0
Methoxychlor	10	100
Mirex	2.1	21
Pentachlorophenol	1.7	17
Polychlorinated biphenyls (PCBs)	5.0	50
Toxaphene	0.5	5
Trichloroethylene	204	2,040
2,4,5-Trichlorophenoxypropionic acid	1.0	10

(3) it has an acute oral LD_{50} less than 2,500 milligrams per kilogram;

(4) it has an acute dermal LD_{50} less than 4,300 milligrams per kilogram;

(5) it has an acute inhalation LC_{50} less than 10,000 parts per million as a gas or vapor;

(6) it has an acute aquatic 96-hour LC_{50} less than 500 milligrams per liter when measured in soft water (total hardness 40 to 48 milligrams per liter of calcium carbonate) with fathead minnows (Pimephales promelas), rainbow trout (Salmo gairdneri) or golden shiners (Notemigonus crysoleucas) according to procedures described in Part 800 of the "Standard Methods for the Examination of Water and Wastewater (16th Edition)," American Public Health Association, 1985 and "Static Acute Bioassay Procedures for Hazardous Waste Samples," California Department of Fish and Game, Water Pollution Control Laboratory, revised November 1988 (incorporated by reference, see section 66260.11), or by other test methods or test fish approved by the Department, using test samples prepared or meeting the conditions for testing as prescribed in subdivisions (c) and (d) of Appendix II of this chapter, and solubilized, suspended, dispersed or emulsified by the cited procedures or by other methods approved by the Department;

(7) it contains any of the following substances at a single or combined concentration equal to or exceeding 0.001 percent by weight:

(A) 2-Acetylaminofluorene (2-AAF);

(B) Acrylonitrile;

(C) 4-Aminodiphenyl;

(D) Benzidine and its salts;

(E) bis (Chloromethyl) ether (BCME);

(F) Methyl chloromethyl ether;

(G) 1,2-Dibromo-3-chloropropane (DBCP);

(H) 3,3'-Dichlorobenzidine and its salts (DCB);

(I) 4-Dimethylaminoazobenzene (DAB);

(J) Ethyleneimine (EL);

(K) alpha-Naphthylamine (1-NA);

(L) beta-Naphthylamine (2-NA);

(M) 4-Nitrobiphenyl (4-NBP);

(N) N-Nitrosodimethylamine (DMN);

(0) beta-Propiolactone (BPL);

(P) Vinyl chloride (VCM);

(8) it has been shown through experience or testing to pose a hazard to human health or environment because of its carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties or persistence in the environment.

(b) A waste containing one or more materials which exhibit the characteristic of toxicity because the materials have the property specified in subsection (a)(5) of this section may be classified as nonhazardous pursuant to section 66260.200 if the waste does not exhibit any other characteristic of this article and is not listed in article 4 of this chapter and its head space vapor contains no such toxic materials in concentrations exceeding their respective acute inhalation LC_{50} or their LC_{LO}. The head space vapor of a waste shall be prepared, and two milliliters of it shall be sampled using a five milliliter gas-tight syringe, according to Method 5020 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 2nd edition, U.S. Environmental Protection Agency, 1982 (incorporated by reference, see section 66260.11). The quantity in milligrams of each material, which exhibits the characteristic of toxicity because it has the property specified in subsection (a)(5) of this section, in the sampling syringe shall be determined by comparison to liquid standard solutions according to the appropriate gas chromatographic procedures in Method 8010, 8015, 8020, 8030 or 8240 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd edition, U.S. Environmental Protection Agency, 1986 (incorporated by reference, see section 66260.11). The concentration of each material in the head space vapor shall be calculated using the following equation:

$$C_A = \frac{Q_A}{MW} \times \frac{29.8ml}{mmole} \times \frac{1}{2 \times 10^{-6} M^3}$$

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where C (in parts per million) is the concentration of material A in head space vapor, Q (in milligrams) is the quantity of material A in sampling syringe and MW (in milligrams per millimole) is the molecular weight of material A. Where an acute inhalation LC_{50} is not available, an LC_{50} measured for another time (t) may be converted to an eight-hour value with the following equation:

Eight-hour LC_{50} = (t/8) x (t-hour LC_{50}).

(c) A waste containing one or more materials which exhibit the characteristic of toxicity because the materials have either of the properties specified in subsection (a)(3) or (a)(4) of this section may be classified as nonhazardous pursuant to section 66260.200 if the waste does not exhibit any other characteristic of this article and is not listed in article 4 of this chapter and the calculated oral LD_{50} of the waste mixture is greater than 2,500 milligrams per kilogram and the calculated dermal LD_{50} is greater than 4,300 milligrams per kilogram by the following equation:

$$\text{Calculated oral or dermal } LD_{50} = \frac{100\%}{\sum_{x=1}^{n} \frac{\% A_x}{TA_x}}$$

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where $\%A_x$ is the weight percent of each component in the waste mixture and [FNT]A_X is the acute oral or dermal LD_{50} or the acute oral LD_{LO} of each component.

Note: Authority cited: Sections 25141, 25159, 58004 and 58012, Health and Safety Code. Reference: Sections 25117, 25120.2, 25141, 25159 and 25159.5, Health and Safety Code and 40 CFR Section 261.24.

HISTORY

1. New section filed 5-24-91; effective 7-1-91 (Register 91, No. 22).

2. Amendment of table II filed 1-31-94; operative 1-31-94 (Register 94, No. 5).

3. Editorial correction of equation (Register 95, No. 36).

4. Amendment of subsection (a)(1) and Note filed 10-13-98; operative 11-12-98 (Register 98, No. 42).

5. Change without regulatory effect amending subsections (a)(3) and (c) filed 6-3-2004 pursuant to section 100, title 1, California Code of Regulations (Register 2004, No. 23).

22 CCR § 66261.24, 22 CA ADC § 66261.24
1CAC

22 CA ADC § 66261.24

END OF DOCUMENT

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T. Notification of Interested Parties. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.

U. Consideration of Public Comment. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED, that Order R5-2007-0132-02 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited.

B. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).

C. Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code.

D. The Discharger shall not allow pollutant-free wastewater to be discharged into the treatment or disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point Nos. 001 and 002

1. Final Effluent Limitations – Discharge Point No. 001 (Willow Slough Bypass)

a. The Discharger shall maintain compliance with the following effluent limitations when discharging at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-A or EFF-001 as described in sections IV.A. and B. of the Monitoring and Reporting Program, unless otherwise noted. Interim effluent limitations for Discharge Point No. 001 are found in section IV.A.3.

Table 6. Effluent Limitations – Discharge Point No. 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)[1]	mg/L	10	15	20	--	--
	lbs/day[2]	630	940	1,300	--	--
pH	standard units	--	--	--	6.5	8.0
Total Suspended Solids[1]	mg/L	10	15	20	--	--
	lbs/day[2]	630	940	1,300	--	--
Priority Pollutants						
Cadmium, Total Recoverable	µg/L	4.3	--	8.3	--	--
Copper, Total Recoverable	µg/L	23	--	49	--	--
Cyanide, Total Recoverable	µg/L	3.8	--	8.1	--	--
Selenium, Total Recoverable	µg/L	4.4	--	7.1	--	--
	lbs/day[2]	0.28	--	0.44	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	392	--	750	--	--
Ammonia Nitrogen, Total (as N) 1 March – 31 October	mg/L	1.3	--	4.0	--	--
	lbs/day[2]	82	--	251	--	--
Ammonia Nitrogen, Total (as N) 1 November – 29 February	mg/L	1.8	--	3.3	--	--
	lbs/day[2]	113	--	207	--	--

1 Compliance to be determined at Monitoring Location EFF-A, as described in the Monitoring and Reporting Program.
2 Based upon an average dry weather flow of 7.5 MGD.

b. **Percent Removal.** Effective 25 October 2017, the average monthly percent removal of BOD_5 and TSS shall not be less than 85 percent.

c. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

  i. 70%, minimum for any one bioassay; and
  ii. 90%, median for any three consecutive bioassays.

d. **Total Residual Chlorine[1].** Effluent total residual chlorine shall not exceed:

   i. 0.011 mg/L, as a 4-day average; and
   ii. 0.019 mg/L, as a 1-hour average.

e. **Chronic Whole Effluent Toxicity.** There shall be no chronic toxicity in the effluent discharge.

f. **Total Coliform Organisms[1]**

   i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median;
   ii. 23 MPN/100 mL, more than once in any 30-day period; and
   iii. 240 MPN/100 mL, at any time.

g. **Average Dry Weather Flow.** The average dry weather discharge flow shall not exceed 7.5 MGD as a total from Discharge Point Nos. 001 and 002.

h. **Diazinon and Chlorpyrifos.** Effluent diazinon and chlorpyrifos concentrations shall not exceed the sum of one (1.0) as identified below:

   i. Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\ avg}}{0.079} + \frac{C_{C\ avg}}{0.012} \leq 1.0$$

$C_{D\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L

$C_{C\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L

   ii. Maximum Daily Effluent Limitation

$$S_{MDEL} = \frac{C_{D\ max}}{0.16} + \frac{C_{C\ max}}{0.025} \leq 1.0$$

$C_{D\text{-}avg}$ = maximum daily diazinon effluent concentration in µg/L

$C_{C\text{-}avg}$ = maximum daily chlorpyrifos effluent concentration in µg/L

i. **Mercury, Total Recoverable.** The total monthly mass discharge of total mercury shall not exceed 0.038 lbs/month.

j. **Electrical Conductivity[1].** For a calendar year, the annual average effluent concentration shall not exceed 1,400 µmhos/cm.

[1] Compliance to be determined at Monitoring Location EFF-A, as described in the Monitoring and Reporting Program.

2. Final Effluent Limitations – Discharge Point No. 002 (Conaway Ranch Toe Drain)

a. The Discharger shall maintain compliance with the following effluent limitations when discharging at Discharge Point No. 002, with compliance measured at Monitoring Location EFF-A or EFF-002 as described in section IV.A. and C. of the Monitoring and Reporting Program, unless otherwise noted. Interim effluent limitations for Discharge Point No. 002 are found in section IV.A.4., below.

Table 7. Effluent Limitations – Discharge Point No. 002

Parameter	Units	Effluent Limitations				
		Average Monthly	**Average Weekly**	**Maximum Daily**	**Instantaneous Minimum**	**Instantaneous Maximum**
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)[1]	mg/L	10	15	20	--	--
	lbs/day[2]	630	940	1,300	--	--
pH	standard units	--	--	--	6.5	8.0
Total Suspended Solids[1]	mg/L	10	15	20	--	--
	lbs/day[2]	630	940	1,300	--	--
Priority Pollutants						
Copper, Total Recoverable	µg/L	16	--	33	--	--
Selenium, Total Recoverable	µg/L	4.5	--	6.9	--	--
	lbs/day[2]	0.28	--	0.43	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	400	--	750	--	--
Ammonia Nitrogen, Total (as N) 1 March – 31 October	mg/L	1.5	--	4.7	--	--
	lbs/day[2]	94	--	295	--	--
Ammonia Nitrogen, Total (as N) 1 November – 29 February	mg/L	2.3	--	5.6	--	--
	lbs/day[2]	144	--	352	--	--

[1] Compliance to be determined at Monitoring Location EFF-A
[2] Based upon an average dry weather flow of 7.5 MGD.

b. Percent Removal. Effective 25 October 2017, the average monthly percent removal of 5-day BOD_5 and TSS shall not be less than 85 percent.

c. Acute Whole Effluent Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

i. 70%, minimum for any one bioassay; and
ii. 90%, median for any three consecutive bioassays.

d. Total Residual Chlorine[1]. Effluent total residual chlorine shall not exceed:

- **i.** 0.011 mg/L, as a 4-day average; and
- **ii.** 0.019 mg/L, as a 1-hour average.

e. Chronic Whole Effluent Toxicity. There shall be no chronic toxicity in the effluent discharge.

f. Total Coliform Organisms[1]

- **i.** 2.2 most probable number (MPN) per 100 mL, as a 7-day median;
- **ii.** 23 MPN/100 mL, more than once in any 30-day period; and
- **iii.** 240 MPN/100 mL, at any time.

g. Average Dry Weather Flow. The average dry weather discharge flow shall not exceed 7.5 MGD as a total from Discharge Point Nos. 001 and 002.

h. Diazinon and Chlorpyrifos. Effluent diazinon and chlorpyrifos concentrations shall not exceed the sum of one (1.0) as identified below:

i. Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\ avg}}{0.079} + \frac{C_{C\ avg}}{0.012} \leq 1.0$$

$C_{D\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L

$C_{C\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L

ii. Maximum Daily Effluent Limitation

$$S_{MDEL} = \frac{C_{D\ max}}{0.16} + \frac{C_{C\ max}}{0.025} \leq 1.0$$

$C_{D\text{-}avg}$ = maximum daily diazinon effluent concentration in µg/L

$C_{C\text{-}avg}$ = maximum daily chlorpyrifos effluent concentration in µg/L

i. Methylmercury. The effluent calendar annual methylmercury load shall not exceed 0.17 grams, in accordance with the Delta Mercury Control Program.

j. Electrical Conductivity. For a calendar year, the annual average effluent concentration shall not exceed 1,400 µmhos/cm.

[1] Compliance to be determined at Monitoring Location EFF-A, as described in the Monitoring and Reporting Program.

APPENDIX C

Local Limits Data Summary

Date	Influent							Effluent (EFF-001)							Effluent (EFF-002)						
	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)
06/03/13	4.86	238	9,653	260	10,545			3.40					6	170							
06/04/13	4.72	219	8,625	408	16,068			3.12	22	572	36.8	956	6.4	166							
06/05/13	4.74	215	8,498	200	7,905			2.79	21	488	19.8	460	6.1	142							
06/06/13	4.77							3.05	20	509	17	432	6.1	155							
06/07/13	4.81							3.16					6	158							
06/10/13	4.84	234	9,453	168	6,787			2.94	24	588	23	563	6.5	159							
06/11/13	4.73	197	7,773	202	7,970			3.41	33	937	21.5	611	7	199							
06/12/13	4.74	215	8,496	254	10,037			3.52	27	793	22.5	661	7.6	223							
06/13/13	4.80							3.28					7.7	211							
06/14/13	4.78							3.33					8.3	231							
06/17/13	4.64	205	7,924	243	9,393								8.5								
06/18/13	4.39	233	8,539	640	23,453			3.06	16	409	20	511	8.9	227							
06/19/13	4.25	229	8,123	346	12,273			3.42	14	399	17.5	499	8.6	245							
06/20/13	4.21							3.37	18	506	17.8	500	8.6	242							
06/21/13	4.21							3.40					9.1	258							
06/24/13	4.27	198	7,043	140	4,980			3.68	22	675	18	553	9.9	304							
06/25/13	4.36	192	6,982	140	5,091			3.62	24	725	17	514	11	332							
06/26/13	4.33	262	9,459	410	14,803	41	1,480	3.97	30	994	20	663	12	398							
06/27/13	4.63							3.07					7.7	197							
06/28/13	4.60							3.13					11	287							
06/30/13	4.53							2.99					9	224							
07/01/13	4.58	215	8,205	100	3,816			3.00	25	624	23	575	8.5	212							
07/02/13	4.54	146	5,526	172	6,510			3.01	24	603	22.8	573	7	176							
07/03/13	4.51	196	7,367	232	8,721			2.87	22	527	24.5	587	7	168							
07/05/13	4.34							2.97					5.3	131							
07/08/13	4.49	207	7,746	278	10,403			2.77	22	509	24.2	559	4.5	104							
07/09/13	4.45	233	8,651	262	9,728			2.92	22	535	24.5	596	4.3	105							
07/10/13	4.44	182	6,732	126	4,660			2.93	21	512	23.8	581	4.4	107							
07/11/13	4.47							3.02					4.1	103							
07/12/13	4.50							3.71					2.8	87							
07/15/13	4.50	227	8,519	152	5,705			3.58	39	1,163	22	656	2.7	81							
07/16/13	4.49	235	8,792	348	13,020			3.01	14	351	20.5	514	2.9	73							
07/17/13	4.44	157	5,811	82	3,035			2.87	13	311	17	407	3	72							
07/18/13	4.39							2.86					3.2	76							
07/19/13	2.94							2.66					3.4	75							
07/22/13	4.39	196	7,174	102	3,734			2.69	24	538	23.2	520	4.6	103							
07/23/13	4.51	216	8,130	260	9,786			2.17	20	362	21	380	3.9	71							
07/24/13	4.48	180	6,724	168	6,276			2.31	21	404	23.5	452	4.2	81							
07/25/13	4.57							2.23					4.5	84							
07/26/13	4.53							2.20					5.2	95							
07/28/13	4.44							2.26					6	113							
07/29/13	4.54	225	8,519	330	12,495			2.57	24	514	29	621	5.9	126							
07/30/13	4.50							2.58	19	409	20	430	6.2	133							
08/05/13	4.43												3								
08/06/13	4.40	218	7,996	172	6,309			2.68	20	448	13.5	302	1.9	43							
08/07/13	4.39	232	8,490	299	10,942			3.03	14	354	17	429	2.1	53							
08/08/13	4.27	170	6,050	226	8,043			2.89	13	314	19	458	2.8	68							
08/09/13	4.36							2.36					3.6	71							
08/12/13	4.44	207	7,669	350	12,966			2.37	19	375	25.8	510	4.2	83							
08/13/13	4.60	215	8,254	354	13,590	61	2,342	2.32	15	290	29	560	4.6	89							
08/14/13	4.43	241	8,904	326	12,044			2.67	15	334	24	534	4.9	109							
08/15/13	4.30							2.73					5.4	123							
08/16/13	4.34							2.55					5.5	117							
08/19/13	4.38							2.56					5.6	120							
08/20/13	4.34	210	7,606	274	9,924			2.65	27	596	25	552	6.9	152							

Date	Influent							Effluent (EFF-001)							Effluent (EFF-002)						
	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)
08/21/13	4.33	196	7,070	140	5,050			2.39	25	498	24	478	7.6	151							
08/22/13	4.31	242	8,707	376	13,528			2.23			26	483	7.9	147							
08/23/13	4.27			302	10,757			2.29	30	572	24	458	8.2	156							
08/25/13	4.29							2.82					6.7	158							
08/26/13	4.38	256	9,341	372	13,573			3.24	27	729	28	756	6.5	175							
08/27/13	4.36	158	5,751	120	4,367			3.20	28	746	28	746	7.5	200							
08/28/13	4.44	190	7,042	222	8,228			3.34	24	668	27.8	774	7.5	209							
09/03/13	4.65												3.8								
09/04/13	4.40	168	6,162	108	3,961			3.30	17	468	19	523	3.1	85							
09/05/13	4.41	187	6,884	138	5,080			2.73	25	569	22	501	3	68							
09/06/13	4.39	197	7,206	166	6,072			3.14	27	707	24	629	3.7	97							
09/07/13	4.47							3.09					4	103							
09/09/13	4.45							2.75					5.7	131							
09/10/13	4.37	224	8,164	238	8,674			3.03	31	784	28	708	6	152							
09/11/13	3.96	224	7,405	292	9,653			2.90	30	725	31	749	6.1	147							
09/12/13	4.25	233	8,255	344	12,187			3.12	32	833	26	677	5.6	146							
09/13/13	4.28	203	7,248	195	6,962			3.10	33	854	30	776	5.6	145							
09/16/13	4.44							3.05					6.9	176							
09/17/13	4.35	145	5,257	186	6,743			3.45	33	950	22	633	7.8	225							
09/18/13	4.28	171	6,107	116	4,143			2.90	34	821	29	700	7.6	183							
09/19/13	4.28	193	6,886	136	4,852			2.32	31	599	28	541	7.8	151							
09/20/13	4.34	262	9,479	252	9,117			2.53	32	675	32	675	8.5	179							
09/22/13	4.70							4.43					9.2	340							
10/01/13	4.82							0.48					6.1	24							
10/02/13	4.69	225	8,797	144	5,630			1.76	23	338	16	235	6.5	96							
10/03/13	4.46	217	8,073	188	6,994			2.25	29	545	25	470	6.7	126							
10/04/13	4.56	222	8,450	366	13,931			1.94	28	454	27	438	7	113							
10/05/13	4.51							1.99					7.4	123							
10/07/13	4.90							2.33					8.6	167							
10/08/13	4.66	218	8,480	180	7,002			2.28	18	343	28	533	8.7	166							
10/09/13	4.73	243	9,594	206	8,133			2.38	20	396	23	456	9.3	184							
10/10/13	4.75	248	9,831	262	10,386			2.13	18	319	23	408	9.6	170							
10/11/13	4.69	224	8,764	188	7,355			2.43	23	466	18	364	9.4	190							
10/14/13	4.93							2.03					9.1	154							
10/15/13	4.76	228	9,053	148	5,877			2.16	31	557	11	198	9.8	176							
10/16/13	4.50	268	10,047	160	5,998			2.12	32	564	8	141	9.7	171							
10/17/13	4.99	176	7,322	84	3,494			2.25	32	601	15	282	9.5	179							
10/18/13	4.69	217	8,493	321	12,564			2.35	28	548	12	235	9.4	184							
10/21/13	4.90							2.55					8.8	187							
10/22/13	4.70	238	9,331	284	11,135			2.22	20	370	16	296	6.2	115							
10/23/13	4.73	239	9,420	250	9,854			2.16	18	325	12	216	6.3	114							
10/24/13	4.65	228	8,842	262	10,161			2.42	18	363	16	323	6	121							
10/25/13	4.72	230	9,062	398	15,680			2.34	18	351	11	215	5.3	103							
10/27/13	4.72							2.30					5.2	100							
10/28/13	4.93	204	8,383	212	8,711			2.37	14	276	18	355	5.5	109							
10/29/13	4.74	372	14,693	110	4,345			2.38	15	297	18	357	5.7	113							
10/30/13	4.63	206	7,956	206	7,956			2.29	13	248	15	286	5.1	97							
10/31/13	4.78	226	9,015	334	13,323			2.09	11	191	15	261	5.1	89							
11/03/13	4.78												4.5								
11/04/13	5.10							1.62					3.1	42							
11/05/13	4.88	230	9,367	234	9,529			2.47	20	412	20	412	5.7	118							
11/06/13	4.63	244	9,412	284	10,955			3.32	27	748	29	804	7.6	211							
11/07/13	4.70	233	9,129	300	11,754			3.03					8.7	220							
11/11/13	4.39							2.62					9.9	216							
11/12/13	4.71	265	10,399	252	9,888			2.85	39	928	24	571	9.6	228							

Date	Influent							Effluent (EFF-001)							Effluent (EFF-002)						
	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)
11/13/13	4.54	230	8,701	288	10,895			2.70	37	834	25	563	10	225							
11/14/13	4.60	229	8,785	242	9,284			2.87	39	933	28	670	10	239							
11/15/13	4.57	265	10,091	234	8,911			2.93	39	954	28	685	9	220							
11/18/13	4.88							3.07					5.6	143							
11/19/13	4.64	236	9,129	346	13,384			2.95	36	884	29	712	5.1	125							
11/20/13	4.60	211	8,095	324	12,430			3.94	34	1,118	35	1,151	4.5	148							
11/21/13	4.54	243	9,195	320	12,108			3.69	24	739	39	1,201	4.6	142							
11/22/13	4.58	216	8,243	218	8,320			2.11	20	352	31	546	4.4	78							
12/02/13	4.57												7								
12/03/13	4.58	179	6,842	398	15,212			3.44	23	660	34	976	6.8	195							
12/04/13	4.60	199	7,626	248	9,504			3.38	15	423	38	1,072	7.2	203							
12/05/13	4.60	208	7,987	208	7,987			3.42	22	628	28	799	7.8	223							
12/09/13	4.90							3.57					9.7	289							
12/10/13	4.64	244	9,446	442	17,112			3.55	18	534	30	889	10	296							
12/11/13	4.60	214	8,215	274	10,519			3.68	16	491	34	1,043	10	307							
12/12/13	4.56	193	7,335	272	10,337			3.32	21	581	31	857	10	277							
12/16/13	4.34	207	7,499	358	12,970			3.53	16	471	34	1,000	11	324							
12/17/13	4.08	253	8,598	466	15,837			3.54	18	532	37	1,094	11	325							
12/18/13	4.34	229	8,296	570	20,651			3.26	19	517	31	843	12	326							
12/19/13	3.93	257	8,419	348	11,400			3.03	23	581	30	758	12	303							
01/05/14	4.64												15								
01/06/14	4.63	252	9,724	280	10,805			2.98	15	373	36	896	15	373							
01/08/14	4.59	245	9,373	156	5,968			3.24	17	460	43	1,162	17	460							
01/10/14	4.59							3.28					15	411							
01/13/14	4.72							3.29					17	466							
01/14/14	4.61	232	8,928	296	11,390			3.23					17	457							
01/15/14	4.57	212	8,078	254	9,679			3.52	15	440	44	1,290	18	528							
01/16/14	4.61	190	7,311	228	8,774			3.05	18	457	48	1,220	18	457							
01/21/14	4.71	276	10,844	214	8,408			3.52	22	646	36	1,058	18	529							
01/22/14	5.05	378	15,917	660	27,792			3.59	21	628	37	1,107	19	569							
01/23/14	4.69	286	11,175	434	16,958			3.52	20	587	32	939	18	528							
01/24/14	4.69	225	8,791	362	14,144			3.36	23	644	33	923	18	504							
01/27/14	4.88							3.89					18	584							
01/28/14	4.62	239	9,205	358	13,788			3.85	21	674	36	1,155	17	546							
01/29/14	4.70	236	9,253	232	9,096			3.84	19	609	43	1,377	15	481							
01/30/14	4.71	244	9,583	268	10,525			3.72	20	620	29	900	16	496							
02/03/14	4.79												6.7								
02/04/14	4.56	210	7,992	220	8,372			3.41	11	312	35	994	12	341							
02/05/14	4.59	236	9,032	214	8,190			3.82	14	446	25	797	11	351							
02/06/14	4.61	230	8,839	294	11,299			3.88	15	485	27	873	10	323							
02/10/14	4.81							6.41			42	2,246	10	535							
02/11/14	4.69	233	9,116	212	8,294			4.13	11	379	38	1,310	11	379							
02/12/14	4.43	261	9,639	254	9,380			3.99	12	399	34	1,131	11	366							
02/13/14	5.01	276	11,539	296	12,375			3.85	14	449	27	866	9.6	308							
02/18/14	4.63	226	8,727	148	5,715			3.74	18	561	25	779	11	343							
02/19/14	4.75	226	8,947	178	7,047			3.88	20	648	28	907	11	356							
02/20/14	4.60	248	9,512	256	9,819			3.70	20	616	26	801	11	339							
02/21/14	4.74	223	8,808	218	8,611			3.40	18	510	21	595	10	283							
02/24/14	4.73							3.57					10	298							
02/25/14	4.72	230	9,050	240	9,444			3.57	18	535	29	862	10	297							
02/26/14	4.76	214	8,497	208	8,259			3.61	19	572	29	873	9.5	286							
02/27/14	4.74	189	7,475	174	6,881			4.43	19	702	37	1,367	8.2	303							
03/03/14	4.75							3.68			48	1,473	9.8	301							
03/04/14	4.77	215	8,548	166	6,600			4.07	17	577	52	1,766	9.6	326							
03/05/14	4.97	242	10,033	222	9,204			3.69	19	585	50	1,539	9.4	289							

Date	Influent							Effluent (EFF-001)							Effluent (EFF-002)						
	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)
03/06/14	4.72	235	9,249	286	11,256			3.87	18	581	51	1,646	8.2	265							
05/04/14	4.78												0.85								
05/05/14	4.93							2.54					-0.6	-13							
05/06/14	4.61	248	9,537	252	9,691			3.40	19	538	31	878	1.1	31							
05/07/14	4.66	237	9,213	172	6,686			3.38	16	452	20	564	1.5	42							
05/09/14	4.42	250	9,214	208	7,666			2.99	12	300	19	474	1.1	27							
05/12/14	4.47					52	1,939	2.94					0.86	21							
05/13/14	4.32	205	7,388	114	4,108	37	1,333	2.98	10	249	17	423	1.5	37							
05/14/14	4.31	193	6,929	158	5,673	39	1,400	3.10	11	285	21.5	557	2.1	54							
05/15/14	4.27	248	8,838	256	9,123			3.22	13	349	13	349	2.4	64							
05/19/14	4.52							2.89					1.6	39							
05/21/14	4.92	236	9,686	274	11,245			2.94	12	294	23	564	0.87	21							
05/22/14	4.30	203	7,277	536	19,213			2.93	13	318	23	563	-0.6	-15							
05/23/14	4.39	245	8,966	286	10,466			2.64	12	264	22.5	495	-0.6	-13							
05/27/14	4.38	229	8,356	204	7,443			2.63	14	307	29	636	-0.6	-13							
05/28/14	4.29	202	7,222	224	8,009	47	1,680	2.73	14	319	30.5	694	-0.6	-14							
05/29/14	4.16	239	8,284	242	8,388	38	1,317	2.42	14	283	29	586	-0.6	-12							
06/01/14	4.34												-0.6								
06/02/14	4.65					52	2,016	2.24					-0.6	-11							
06/04/14	4.29	216	7,732	400	14,318	36	1,289	2.63	12	264	34	747	-0.6	-13							
06/06/14	4.85	242	9,779	272	10,991	45	1,818	1.78	10	149	29	431	-0.6	-9							
06/09/14	4.42					50	1,844	2.35					-0.6	-12							
06/10/14	4.28	266	9,493	438	15,631	54	1,927	2.33	19	370	35	681	-0.6	-12							
06/11/14	4.35	274	9,931	240	8,699			2.02	18	303	32	539	-0.6	-10							
06/12/14	4.37	248	9,034	576	20,983	49	1,785	1.96	18	294	31	506	-0.6	-10							
06/16/14	3.94					40	1,313	2.56					-0.6	-13							
06/18/14	3.70	234	7,229	442	13,654	31	958	2.16	11	198	27	485	-0.6	-11							
06/19/14	3.70	207	6,379	232	7,149	31	955	2.08	12	208	24	416	-0.6	-10							
06/20/14	3.67	217	6,649	402	12,318			2.24	11	205	24	448	-0.6	-11							
06/23/14	3.75					35	1,094	2.53					-0.6	-13							
06/24/14	3.81	245	7,781	480	15,244	33	1,048	2.51	13	272	33	691	-0.6	-13							
06/25/14	3.79	272	8,586	312	9,849	35	1,105	2.30	11	211	32	613	-0.6	-11							
06/26/14	3.78	280	8,834	320	10,096			2.36	9	177	28	550	-0.6	-12							
06/30/14	3.83					38	1,215	1.93					1.4	23							
07/01/14	3.82	290	9,244	1370	43,669			1.95	14	228	28	456	1.3	21							
07/02/14	3.79	214	6,766	518	16,378			1.87	12	187	22	343	1.2	19							
07/03/14	3.82	210	6,697	774	24,685			1.92	12	192	18	288	1.3	21							
07/07/14	3.78												1.7								
07/08/14	3.73	252	7,839	660	20,531			1.88					1.7	27							
07/09/14	3.75	242	7,565	264	8,252			2.06	12	206	20	343	1.6	27							
07/10/14	3.80	247	7,820	1092	34,571			2.22	13	241	18	333	1.5	28							
07/14/14	3.82							2.45					1.7	35							
07/15/14	3.77	262	8,240	540	16,983			2.40	18	360	28	559	1.9	38							
07/17/14	3.42	140	3,987	130	3,703			2.34	16	312	23	449	1	20							
07/18/14	4.16	148	5,137	122	4,235			2.61	15	327	20	436	1	22							
07/21/14	3.78							2.72					1.1	25							
07/22/14	3.86							2.58	15	322	20	430	0.8	17							
07/23/14	3.91	227	7,410	284	9,271			2.53	12	253	19	401	0.93	20							
07/24/14	3.93	227	7,442	290	9,508			2.52	9	189	16	336	0.68	14							
07/27/14	3.65							1.63					-0.6	-8							
07/28/14	3.73	230	7,149	270	8,392			2.10	12	210	20	350	0.96	17							
07/29/14	3.87	227	7,323	244	7,871			1.94	13	211	15	243	-0.6	-10							
07/30/14	3.82	213	6,779	266	8,466			1.91	12	191	11	175	-0.6	-10							
08/04/14	3.69							1.72					0.71	10							
08/06/14	3.83	273	8,713	320	10,213			2.08	7	121	13	226	1.3	23							

Date	Influent							Effluent (EFF-001)							Effluent (EFF-002)						
	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)
08/07/14	3.82	277	8,813	346	11,009			1.92	9	144	11	176	1.2	19							
08/08/14	3.73	276	8,581	368	11,442			1.92	12	192	12	192	1.5	24							
08/11/14	3.69							1.95					0.87	14							
08/12/14	3.84	200	6,402	262	8,386			1.79	10	149	20	298	1.1	16							
08/13/14	3.76	406	12,738	272	8,534			1.75	26	379	16	233	0.83	12							
08/14/14	3.84	284	9,093	370	11,846			1.51	10	126	22	277	1.4	18							
08/18/14	3.67							1.83					1.6	24							
08/19/14	3.74	273	8,504	224	6,978			1.91	14	223	17	271	1.8	29							
08/21/14	3.72							1.58	12	159	12	159	1.7	22							
08/22/14	3.75	238	7,434	180	5,622			1.50	12	150	12	150	2.5	31							
08/25/14	3.80							1.91					3	48							
08/26/14	3.75	278	8,690	232	7,252			1.88	17	266	10	157	2.9	45							
08/27/14	3.85	252	8,089	248	7,961			1.78	17	252	13	193	3.1	46							
08/28/14	3.77	261	8,208	240	7,548			2.09	10	174	8	139	2.9	51							
09/08/14	3.82	306	9,739	362	11,521			1.87	11	172	12	187	2.3	36							
09/09/14	3.79	356	11,238	248	7,829			2.35	6	117	7	137	1.6	31							
09/10/14	3.66	331	10,112	292	8,920			2.27	9	170	8	151	1.5	28							
09/15/14	3.71							2.52					2.2	46							
09/17/14	3.58	268	8,004	368	10,991			2.23	11	204	11	204	2.2	41							
09/18/14	3.62	289	8,732	320	9,669			1.75	11	161	12	175	1.8	26							
09/19/14	3.64	304	9,231	340	10,324			1.30	12	130	13	141	2.3	25							
09/21/14	3.65							1.33					2.5	28							
09/22/14	3.75	247	7,723	246	7,692			1.43	16	190	18	214	2.9	35							
09/23/14	3.69	236	7,261	272	8,368			1.47	19	233	15	184	3.8	47							
10/06/14	4.37							1.75					1.5	22							
10/08/14	4.11	240	8,235	288	9,881			1.65	20	275	29	399	2.2	30							
10/10/14	4.08	268	9,126	264	8,990			1.51	21	264	24	302	2.8	35							
10/13/14	4.37	256	9,324	274	9,979			1.44	21	252	27	324	3.3	40							
10/14/14	4.09	284	9,690	238	8,120			1.61	25	335	22	295	5.2	70							
10/15/14	4.02	277	9,285	320	10,726			1.65	20	275	18	248	4.5	62							
10/20/14	4.32							1.42					5.2	61							
10/22/14	4.07	264	8,963	264	8,963			1.26	17	179	16	169	4.9	52							
10/24/14	4.02	301	10,094	314	10,530			1.41	20	236	17	200	5.1	60							
10/27/14	4.26	235	8,351	212	7,534			1.61	16	215	16	215	4.9	66							
10/28/14	4.07	225	7,643	254	8,628			1.54	15	193	17	218	4.6	59							
10/29/14	4.06	258	8,742	308	10,437			1.40	17	198	18	210	4.3	50							
11/03/14	4.46							1.25					3.9	41							
11/05/14	4.01	256	8,566	302	10,105			1.58	22	289	21	276	3	39							
11/07/14	3.93	188	6,165	224	7,346			1.89	16	252	16	252	3.7	58							
11/10/14	4.51	267	10,052	144	5,421			2.14	19	339	12	214	4.8	86							
11/12/14	4.26							2.40	17	340	14	280	5.3	106							
11/13/14	4.05	261	8,809	238	8,033	41	1,384	2.70	15	338	12	270	6.4	144							
11/17/14	4.33	324	11,698	272	9,820	43	1,552	2.35	21	411	23	451	7.5	147							
11/19/14	4.04	297	10,009	388	13,076	41	1,382	3.03	28	708	29	733	7.4	187							
11/21/14	4.05							3.28					8.5	232							
12/01/14	4.17							4.37					9.1	332							
12/03/14	4.38	248	9,063	247	9,027			6.33	28	1,479	26	1,373	6.6	349							
12/05/14	4.18	248	8,635	232	8,078			4.21	18	632	25	878	9.4	330							
12/08/14	4.37							3.39					11	311							
12/10/14	4.10	306	10,468	261	8,929			3.72					9.9	307							
12/11/14	4.13	250	8,607	254	8,745			3.72	27	838	23	714	9.9	307							
12/15/14	4.45							4.54					7	265							
12/16/14	4.56	270	10,277	254	9,668			6.10	19	966	26	1,323	7.6	387							
12/17/14	4.45	254	9,425	254	9,425			5.10	19	808	26	1,106	7.8	332							
01/05/15	4.29							3.57					11	327							

Date	Influent							Effluent (EFF-001)							Effluent (EFF-002)						
	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)	Flow (MGD)	BOD (mg/L)	BOD (lb/day)	TSS (mg/L)	TSS (lb/day)	Ammonia as N (mg/L)	Ammonia as N (lb/day)
01/07/15	4.25	260	9,209	262	9,280			3.53	17	501	16	471	11	324							
01/08/15	4.21	252	8,848	266	9,340			3.60	19	570	18	540	10	300							
01/12/15	4.54							3.90					11	358							
01/14/15	4.14	237	8,179	242	8,352			3.89	20	649	20	649	12	390							
01/15/15	4.20	210	7,354	258	9,035			4.05	19	642	18	608	12	405							
01/21/15	4.14	238	8,210	240	8,279			4.00	19	634	20	668	13	434							
01/22/15	4.15	250	8,659	256	8,867			4.06	25	846	13	440	13	440							
01/23/15	4.17							4.06					13	440							
01/26/15	4.47							4.00					13	433							
01/27/15	4.18	256	8,914	304	10,585			3.97	30	993	28	927	13	430							
01/28/15	4.12	261	8,962	280	9,614			4.05	32	1,081	32	1,081	13	439							
03/09/15	4.42	258	9,513	250	9,218								2.7		4.50	5	188	-2.5	-94	3.3	124
03/11/15	4.13	233	8,031	314	10,823								1.7		4.24	7	248	5	177	3.6	127
03/13/15	4.15												1.2		3.92					3	98
05/05/15	4.06	273	9,239	356	12,048			2.58	15	322	31	666	1	21							
05/06/15	4.16							2.74	13	297	18	411	0.81	19							
05/07/15	4.21	235	8,247	238	8,353			2.72	13	295	17	386	0.92	21							
05/08/15	4.16	254	8,810	260	9,018			2.92					0.78	19							
05/11/15	4.11	260	8,912	232	7,952			3.04	15	380	14	355	0.91	23							
05/12/15	4.22	248	8,730	222	7,815			2.89	14	337	17	410	0.76	18							
05/13/15	4.10							2.75	19	436	21	482	0.92	21							
05/15/15	4.07							2.68	12	268			1.1	25							
05/16/15	3.99							3.05					1.3	33							
05/17/15	3.98							3.30					1.2	33							
05/18/15	4.07							3.49					1.4	41							
05/19/15	4.10	276	9,426	272	9,289			3.50	16	467	13	379	1.4	41							
05/20/15	4.11							3.48	13	378	19	552	1.5	44							
05/21/15	4.27	270	9,611	312	11,106			2.95	15	369	14	344	1.5	37							
05/26/15	3.98	328	10,885	360	11,947			3.08	23	590	23	590	2.1	54							
05/27/15	4.28	225	8,022	208	7,416			3.22	20	537	14	376	2.2	59							
05/28/15	4.07	326	11,074	286	9,715			3.08	21	540	19	489	2.1	54							
05/29/15	4.09							3.13	18	470	15	391	2.3	60							

Sample Location	Sample Date	Pollutant	Result	MDL	RL	Units	Analytical Method	Notes
Digester	11/13/14	Ammonia as N	540	0.2	0.5	mg/L	SM 4500NH3_C	
Digester	11/14/14	Ammonia as N	520	4	1	mg/L	SM 4500NH3_C	
Digester	11/13/14	Arsenic	210	0.3	0.5	ug/L	EPA 200.8	
Digester	11/14/14	Arsenic	210	0.3	0.5	ug/L	EPA 200.8	
Digester	11/13/14	Cadmium	19	0.25	0.5	ug/L	EPA 200.8	
Digester	11/14/14	Cadmium	18	0.25	0.5	ug/L	EPA 200.8	
Digester	11/13/14	Chromium	1300	0.5	1	ug/L	EPA 200.8	
Digester	11/14/14	Chromium	1400	0.5	1	ug/L	EPA 200.8	
Digester	11/13/14	Copper	5500	7.5	25	ug/L	EPA 200.8	
Digester	11/14/14	Copper	7600	7.5	25	ug/L	EPA 200.8	
Digester	11/13/14	Cyanide	39	4.5	20	ug/L	SM 4500CN_C&E	
Digester	11/14/14	Cyanide	37	4.5	20	ug/L	SM 4500CN_C&E	
Digester	11/13/14	Lead	240	0.15	0.5	ug/L	EPA 200.8	
Digester	11/14/14	Lead	270	0.15	0.5	ug/L	EPA 200.8	
Digester	11/13/14	Nickel	880	0.3	0.5	ug/L	EPA 200.8	
Digester	11/14/14	Nickel	990	0.3	0.5	ug/L	EPA 200.8	
Digester	11/13/14	Selenium	110	0.35	1	ug/L	EPA 200.8	
Digester	11/14/14	Selenium	98	0.35	1	ug/L	EPA 200.8	
Digester	11/13/14	Silver	58	0.1	0.5	ug/L	EPA 200.8	
Digester	11/14/14	Silver	58	0.1	0.5	ug/L	EPA 200.8	
Digester	11/13/14	Specific Gravity (Density)	0.99				SM 2710F	
Digester	11/14/14	Specific Gravity (Density)	0.99				SM 2710F	
Digester	11/13/14	Sulfide, Total (as S)	80	3	10	mg/L	SM 4500-SE	
Digester	11/14/14	Sulfide, Total (as S)	86	3	10	mg/L	SM 4500-SE	
Digester	11/13/14	Total Solids (TS)	14000	40	40	mg/L	SM 2540B	
Digester	11/13/14	Total Solids (TS)	1.4		0.1	%	SM 2540G	
Digester	11/14/14	Total Solids (TS)	1.3		0.1	%	SM 2540G	
Digester	11/13/14	Zinc	11000	70	100	ug/L	EPA 200.8	
Digester	11/14/14	Zinc	15000	70	100	ug/L	EPA 200.8	
EFF-001	06/26/13	1,2-Dichlorobenzene	< 0.27	0.27		ug/L		
EFF-001	10/28/14	1,2-Dichlorobenzene	< 0.27	0.27	0.5	ug/L	EPA 624	
EFF-001	06/26/13	1,2-Diphenylhydrazine	< 0.9	0.9		ug/L		
EFF-001	10/28/14	1,2-Diphenylhydrazine	< 0.7	0.7	1	ug/L	EPA 625	
EFF-001	06/26/13	1,3-Dichlorobenzene	< 0.18	0.18		ug/L		
EFF-001	10/28/14	1,3-Dichlorobenzene	< 0.18	0.18	0.5	ug/L	EPA 624	
EFF-001	06/26/13	1,4-Dichlorobenzene	< 0.18	0.18		ug/L		
EFF-001	10/28/14	1,4-Dichlorobenzene	< 0.18	0.18	0.5	ug/L	EPA 624	
EFF-001	06/26/13	2,4,6-Trichlorophenol	< 0.97	0.97		ug/L		
EFF-001	10/28/14	2,4,6-Trichlorophenol	< 0.97	0.97	5	ug/L	EPA 625	
EFF-001	06/26/13	2,4-Dichlorophenol	< 0.99	0.99		ug/L		
EFF-001	10/28/14	2,4-Dichlorophenol	< 0.9	0.9	1	ug/L	EPA 625	
EFF-001	06/26/13	2,4-Dimethylphenol	< 0.87	0.87		ug/L		
EFF-001	10/28/14	2,4-Dimethylphenol	< 0.8	0.8	2	ug/L	EPA 625	
EFF-001	06/26/13	2,4-Dinitrophenol	< 0.83	0.83		ug/L		
EFF-001	10/28/14	2,4-Dinitrophenol	< 0.9	0.9	5	ug/L	EPA 625	
EFF-001	06/26/13	2,4-Dinitrotoluene	< 0.96	0.96		ug/L		

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
EFF-001	10/28/14	2,4-Dinitrotoluene	<	0.7	0.7	5	ug/L	EPA 625	
EFF-001	06/26/13	2-Chlorophenol	<	0.98	0.98		ug/L		
EFF-001	10/28/14	2-Chlorophenol	<	0.7	0.7	2	ug/L	EPA 625	
EFF-001	06/26/13	4,4'-DDD	<	0.004	0.004		ug/L		
EFF-001	10/28/14	4,4'-DDD	<	0.004	0.004	0.01	ug/L	EPA 608	
EFF-001	06/26/13	4,4'-DDE	<	0.003	0.003		ug/L		
EFF-001	10/28/14	4,4'-DDE	<	0.003	0.003	0.01	ug/L	EPA 608	
EFF-001	06/26/13	4,4'-DDT	<	0.004	0.004		ug/L		
EFF-001	10/28/14	4,4'-DDT	<	0.004	0.004	0.01	ug/L	EPA 608	
EFF-001	06/26/13	Acrylonitrile	<	1	1		ug/L		
EFF-001	10/28/14	Acrylonitrile	<	1	1	2	ug/L	EPA 624	
EFF-001	06/26/13	Aldrin	<	0.004	0.004		ug/L		
EFF-001	10/28/14	Aldrin	<	0.004	0.004	0.005	ug/L	EPA 608	
EFF-001	06/04/13	Aluminum		270	1		ug/L		
EFF-001	06/26/13	Aluminum		220	1		ug/L		
EFF-001	07/09/13	Aluminum		220	1		ug/L		
EFF-001	07/15/13	Aluminum		330	1		ug/L		
EFF-001	08/05/13	Aluminum		450	1		ug/L		
EFF-001	09/03/13	Aluminum		300	1		ug/L		
EFF-001	10/01/13	Aluminum		540	2		ug/L		
EFF-001	10/07/13	Aluminum		520	2		ug/L		
EFF-001	11/03/13	Aluminum		690	2		ug/L		
EFF-001	12/09/13	Aluminum		570	2		ug/L		
EFF-001	01/06/14	Aluminum		570	2	10	ug/L		
EFF-001	01/22/14	Aluminum		660	2	10	ug/L		
EFF-001	02/10/14	Aluminum		1500	4	10	ug/L		
EFF-001	03/03/14	Aluminum		1800	5	10	ug/L		
EFF-001	05/05/14	Aluminum		790	2	10	ug/L	EPA 200.8	
EFF-001	05/19/14	Aluminum		430	1	10	ug/L	EPA 200.8	
EFF-001	06/04/14	Aluminum		480	1	10	ug/L	EPA 200.8	
EFF-001	07/07/14	Aluminum		310	1	10	ug/L	EPA 200.8	
EFF-001	08/04/14	Aluminum		340	1	10	ug/L	EPA 200.8	
EFF-001	09/08/14	Aluminum		240	1.2	10	ug/L	EPA 200.8	
EFF-001	10/06/14	Aluminum		790	2.4	10	ug/L	EPA 200.8	
EFF-001	10/20/14	Aluminum		290	1.2	10	ug/L	EPA 200.8	
EFF-001	10/27/14	Aluminum		490	1.2	10	ug/L	EPA 200.8	
EFF-001	11/03/14	Aluminum		510	1.2	10	ug/L	EPA 200.8	
EFF-001	12/01/14	Aluminum		500	1.2	10	ug/L	EPA 200.8	
EFF-001	12/11/14	Aluminum		400	1.2	10	ug/L	EPA 200.8	
EFF-001	01/05/15	Aluminum		460	1.2	10	ug/L	EPA 200.8	
EFF-001	05/15/15	Aluminum		450	2.4	10	ug/L	EPA 200.8	
EFF-001	05/16/15	Aluminum		450	1.2	10	ug/L	EPA 200.8	
EFF-001	05/17/15	Aluminum		490	1.2	10	ug/L	EPA 200.8	
EFF-001	05/18/15	Aluminum		390	1.2	10	ug/L	EPA 200.8	
EFF-001	05/19/15	Aluminum		500	1.2	10	ug/L	EPA 200.8	
EFF-001	05/20/15	Aluminum		470	1.2	10	ug/L	EPA 200.8	

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
EFF-001	05/21/15	Aluminum		320	1.2	10	ug/L	EPA 200.8	
EFF-001	05/21/15	Aluminum		330	1.2	10	ug/L	EPA 200.8	
EFF-001	06/26/13	Anthracene	<	0.03	0.03		ug/L		
EFF-001	10/28/14	Anthracene	<	0.01	0.01	0.3	ug/L	EPA 625	
EFF-001	06/26/13	Antimony	J	0.22	0.05		ug/L		
EFF-001	07/15/13	Antimony	J	0.46	0.05		ug/L		
EFF-001	10/07/13	Antimony	J	0.2	0.05		ug/L		
EFF-001	10/27/14	Antimony	J	0.34	0.05	0.5	ug/L	EPA 200.8	
EFF-001	12/11/14	Antimony	J	0.24	0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/15/15	Antimony	J	0.2	0.1	0.5	ug/L	EPA 200.8	
EFF-001	05/16/15	Antimony	J	0.25	0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/17/15	Antimony	J	0.26	0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/18/15	Antimony	J	0.24	0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/19/15	Antimony	J0.23		0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/20/15	Antimony	J	0.28	0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Antimony	<	0.05	0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Antimony	<	0.05	0.05	0.5	ug/L	EPA 200.8	
EFF-001	06/26/13	Arsenic		3.4	0.06		ug/L		
EFF-001	07/15/13	Arsenic		9.5	0.06		ug/L		
EFF-001	10/07/13	Arsenic		4.1	0.06		ug/L		
EFF-001	10/27/14	Arsenic		4.9	0.06	0.5	ug/L	EPA 200.8	
EFF-001	12/11/14	Arsenic		3.5	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/15/15	Arsenic		4.5	0.12	0.5	ug/L	EPA 200.8	
EFF-001	05/16/15	Arsenic		4.2	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/17/15	Arsenic		4.5	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/18/15	Arsenic		4.3	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/19/15	Arsenic		4	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/20/15	Arsenic		4.2	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Arsenic		3.6	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Arsenic		3.8	0.06	0.5	ug/L	EPA 200.8	
EFF-001	06/26/13	Barium		79	0.04		ug/L		
EFF-001	07/15/13	Barium		75	0.04		ug/L		
EFF-001	10/07/13	Barium		74	0.04		ug/L		
EFF-001	10/27/14	Barium		76	0.08	0.1	ug/L	EPA 200.8	
EFF-001	12/11/14	Barium		65	0.08	0.1	ug/L	EPA 200.8	
EFF-001	05/15/15	Barium		66	0.16	0.2	ug/L	EPA 200.8	
EFF-001	05/16/15	Barium		67	0.08	0.1	ug/L	EPA 200.8	
EFF-001	05/17/15	Barium		69	0.08	0.1	ug/L	EPA 200.8	
EFF-001	05/18/15	Barium		68	0.08	0.1	ug/L	EPA 200.8	
EFF-001	05/19/15	Barium		70	0.08	0.1	ug/L	EPA 200.8	
EFF-001	05/20/15	Barium		71	0.08	0.1	ug/L	EPA 200.8	
EFF-001	05/21/15	Barium		60	0.08	0.1	ug/L	EPA 200.8	
EFF-001	05/21/15	Barium		65	0.08	0.1	ug/L	EPA 200.8	
EFF-001	06/26/13	Benzene	<	0.18	0.18		ug/L		
EFF-001	10/28/14	Benzene	<	0.18	0.18	0.5	ug/L	EPA 624	
EFF-001	06/26/13	Beryllium	<	0.06	0.06		ug/L		

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
EFF-001	07/15/13	Beryllium	<	0.06	0.06		ug/L		
EFF-001	10/07/13	Beryllium	<	0.06	0.06		ug/L		
EFF-001	10/27/14	Beryllium	<	0.09	0.09	0.1	ug/L	EPA 200.8	
EFF-001	12/11/14	Beryllium	<	0.09	0.09	0.1	ug/L	EPA 200.8	
EFF-001	12/11/14	Beryllium	<	0.09	0.09	0.1	ug/L	EPA 200.8	
EFF-001	06/26/13	Cadmium	<	0.05	0.05		ug/L		
EFF-001	07/15/13	Cadmium	J	0.09	0.05		ug/L		
EFF-001	10/07/13	Cadmium	<	0.05	0.05		ug/L		
EFF-001	01/06/14	Cadmium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	01/22/14	Cadmium	J	0.06	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/05/14	Cadmium	J	0.06	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/19/14	Cadmium		0.19	0.05	0.1	ug/L	EPA 200.8	
EFF-001	06/04/14	Cadmium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	08/04/14	Cadmium	J	0.06	0.05	0.1	ug/L	EPA 200.8	
EFF-001	10/06/14	Cadmium	J	0.08	0.05	0.1	ug/L	EPA 200.8	
EFF-001	10/20/14	Cadmium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	10/27/14	Cadmium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	11/03/14	Cadmium	J	0.07	0.05	0.1	ug/L	EPA 200.8	
EFF-001	12/01/14	Cadmium	J	0.07	0.05	0.1	ug/L	EPA 200.8	
EFF-001	12/11/14	Cadmium	J	0.08	0.05	0.1	ug/L	EPA 200.8	
EFF-001	03/09/15	Cadmium	J	0.07	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/05/15	Cadmium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/15/15	Cadmium	<	0.1	0.1	0.2	ug/L	EPA 200.8	
EFF-001	05/16/15	Cadmium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/17/15	Cadmium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/18/15	Cadmium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/19/15	Cadmium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/20/15	Cadmium	J	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/21/15	Cadmium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/21/15	Cadmium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	06/26/13	Carbon tetrachloride	<	0.16	0.16		ug/L		
EFF-001	10/28/14	Carbon tetrachloride	<	0.16	0.16	0.5	ug/L	EPA 624	
EFF-001	06/26/13	Chlordane	<	0.02	0.02		ug/L		
EFF-001	10/28/14	Chlordane	<	0.02	0.02	0.05	ug/L	EPA 608	
EFF-001	06/26/13	Chlorobenzene	<	0.18	0.18		ug/L		
EFF-001	10/28/14	Chlorobenzene	<	0.18	0.18	0.5	ug/L	EPA 624	
EFF-001	06/26/13	Chloroform		6.3	0.19		ug/L		
EFF-001	10/28/14	Chloroform		3.7	0.19	0.5	ug/L	EPA 624	
EFF-001	10/28/14	Chlorpyrifos	<	0.005	0.005	0.01	ug/L	EPA 614	
EFF-001	06/26/13	Chromium		3.1	0.05		ug/L		
EFF-001	07/15/13	Chromium		3	0.05		ug/L		
EFF-001	10/07/13	Chromium		4.4	0.05		ug/L		
EFF-001	10/27/14	Chromium		3.5	0.05	0.5	ug/L	EPA 200.8	
EFF-001	12/11/14	Chromium		4.2	0.05	0.5	ug/L	EPA 200.8	
EFF-001	12/11/14	Chromium		4.2	0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/15/15	Chromium		4	0.1	0.5	ug/L	EPA 200.8	

Sample Location	Sample Date	Pollutant	Result	MDL	RL	Units	Analytical Method	Notes
EFF-001	05/16/15	Chromium	3.9	0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/17/15	Chromium	4.1	0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/18/15	Chromium	3.8	0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/19/15	Chromium	4.3	0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/20/15	Chromium	4.5	0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Chromium	3.6	0.05	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Chromium	3.7	0.05	0.5	ug/L	EPA 200.8	
EFF-001	06/26/13	Cobalt	3.5	0.02		ug/L		
EFF-001	07/15/13	Cobalt	2.4	0.02		ug/L		
EFF-001	10/07/13	Cobalt	3.4	0.02		ug/L		
EFF-001	10/27/14	Cobalt	3	0.02	0.5	ug/L	EPA 200.8	
EFF-001	12/11/14	Cobalt	3	0.02	0.5	ug/L	EPA 200.8	
EFF-001	05/15/15	Cobalt	3.7	0.04	0.5	ug/L	EPA 200.8	
EFF-001	05/16/15	Cobalt	3.6	0.02	0.5	ug/L	EPA 200.8	
EFF-001	05/17/15	Cobalt	3.7	0.02	0.5	ug/L	EPA 200.8	
EFF-001	05/18/15	Cobalt	3.7	0.02	0.5	ug/L	EPA 200.8	
EFF-001	05/19/15	Cobalt	3.9	0.02	0.5	ug/L	EPA 200.8	
EFF-001	05/20/15	Cobalt	4.3	0.02	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Cobalt	3.8	0.02	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Cobalt	4	0.02	0.5	ug/L	EPA 200.8	
EFF-001	06/26/13	Copper	J 6	1		ug/L		
EFF-001	06/26/13	Copper	7.6	0.07		ug/L		
EFF-001	07/15/13	Copper	18	0.07		ug/L		
EFF-001	08/13/13	Copper	17	0.07		ug/L		
EFF-001	10/07/13	Copper	7.2	0.07		ug/L		
EFF-001	12/09/13	Copper	8	0.07		ug/L		
EFF-001	01/06/14	Copper	10	0.07	0.5	ug/L	EPA 200.8	
EFF-001	01/22/14	Copper	9.5	0.07	0.5	ug/L	EPA 200.8	
EFF-001	02/10/14	Copper	16	0.07	0.5	ug/L	EPA 200.8	
EFF-001	03/03/14	Copper	12	0.07	0.5	ug/L	EPA 200.8	
EFF-001	05/05/14	Copper	18	0.07	0.5	ug/L	EPA 200.8	
EFF-001	05/19/14	Copper	890	0.35	2.5	ug/L	EPA 200.8	
EFF-001	06/04/14	Copper	10	0.07	0.5	ug/L	EPA 200.8	
EFF-001	07/07/14	Copper	13	0.07	0.5	ug/L	EPA 200.8	
EFF-001	08/04/14	Copper	13	0.07	0.5	ug/L	EPA 200.8	
EFF-001	09/08/14	Copper	16	0.15	0.5	ug/L	EPA 200.8	
EFF-001	10/06/14	Copper	20	0.15	0.5	ug/L	EPA 200.8	
EFF-001	10/20/14	Copper	9.1	0.15	0.5	ug/L	EPA 200.8	
EFF-001	10/27/14	Copper	20	0.15	0.5	ug/L	EPA 200.8	
EFF-001	11/03/14	Copper	14	0.15	0.5	ug/L	EPA 200.8	
EFF-001	12/01/14	Copper	14	0.15	0.5	ug/L	EPA 200.8	
EFF-001	12/11/14	Copper	11	0.15	0.5	ug/L	EPA 200.8	Detected in equipment blank at 1.5 ug/L.
EFF-001	01/05/15	Copper	6.8	0.15	0.5	ug/L	EPA 200.8	
EFF-001	05/05/15	Copper	8.4	0.15	0.5	ug/L	EPA 200.8	
EFF-001	05/15/15	Copper	7.4	0.3	1	ug/L	EPA 200.8	
EFF-001	05/16/15	Copper	6.8	0.15	0.5	ug/L	EPA 200.8	

Sample Location	Sample Date	Pollutant	Result	MDL	RL	Units	Analytical Method	Notes
EFF-001	05/17/15	Copper	7.9	0.15	0.5	ug/L	EPA 200.8	
EFF-001	05/18/15	Copper	7.4	0.15	0.5	ug/L	EPA 200.8	
EFF-001	05/19/15	Copper	7.2	0.15	0.5	ug/L	EPA 200.8	
EFF-001	05/20/15	Copper	7	0.15	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Copper	6.5	0.15	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Copper	6.6	0.15	0.5	ug/L	EPA 200.8	
EFF-001	06/04/13	Cyanide	< 0.9	0.9		ug/L		
EFF-001	06/26/13	Cyanide	J 1.6	0.9		ug/L		
EFF-001	07/09/13	Cyanide	J 1.2	0.9		ug/L		
EFF-001	08/05/13	Cyanide	J 1.4	0.9		ug/L		
EFF-001	09/03/13	Cyanide	J 0.92	0.9		ug/L		
EFF-001	10/01/13	Cyanide	< 0.9	0.9		ug/L		
EFF-001	11/03/13	Cyanide	J 1.8	0.9		ug/L		
EFF-001	12/09/13	Cyanide	< 0.9	0.9		ug/L		
EFF-001	01/06/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	01/06/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	02/10/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	02/10/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	03/03/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	03/03/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	05/05/14	Cyanide	J 2	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	06/04/14	Cyanide	4.8	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	07/07/14	Cyanide	J 1.3	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	08/04/14	Cyanide	J 1.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	09/08/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	10/06/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	10/27/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	11/03/14	Cyanide	J 1.4	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	12/01/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	12/10/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	12/11/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	01/05/15	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	05/05/15	Cyanide	J 1.5	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	05/15/15	Cyanide	J 1.4	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	05/16/15	Cyanide	J 1.1	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	05/17/15	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	05/18/15	Cyanide	J 1.1	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	05/19/15	Cyanide	J 1.1	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	05/20/15	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	05/21/15	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-001	10/28/14	Diazinon	< 0.007	0.007	0.02	ug/L	EPA 614	
EFF-001	06/26/13	Endrin	< 0.005	0.005		ug/L		
EFF-001	10/28/14	Endrin	< 0.005	0.005	0.01	ug/L	EPA 608	
EFF-001	06/26/13	Ethylbenzene	< 0.26	0.26		ug/L		
EFF-001	10/28/14	Ethylbenzene	< 0.26	0.26	0.5	ug/L	EPA 624	
EFF-001	06/26/13	gamma-BHC	< 0.004	0.004		ug/L		

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
EFF-001	10/28/14	gamma-BHC	<	0.004	0.004	0.01	ug/L	EPA 608	
EFF-001	06/26/13	Heptachlor	<	0.005	0.005		ug/L		
EFF-001	10/28/14	Heptachlor	<	0.005	0.005	0.01	ug/L	EPA 608	
EFF-001	06/26/13	Hexachlorobenzene	<	0.91	0.91		ug/L		
EFF-001	10/28/14	Hexachlorobenzene	<	0.7	0.7	1	ug/L	EPA 625	
EFF-001	06/26/13	Lead		0.27	0.03		ug/L		
EFF-001	07/15/13	Lead		0.43	0.03		ug/L		
EFF-001	10/07/13	Lead		0.57	0.03		ug/L		
EFF-001	10/27/14	Lead		0.4	0.03	0.25	ug/L	EPA 200.8	
EFF-001	12/11/14	Lead		0.47	0.03	0.25	ug/L	EPA 200.8	Detected in equipment blank at 0.26 ug/L.
EFF-001	05/15/15	Lead		0.44	0.12	0.25	ug/L	EPA 200.8	
EFF-001	05/16/15	Lead		0.42	0.06	0.25	ug/L	EPA 200.8	
EFF-001	05/17/15	Lead		0.46	0.06	0.25	ug/L	EPA 200.8	
EFF-001	05/18/15	Lead		0.42	0.06	0.25	ug/L	EPA 200.8	
EFF-001	05/19/15	Lead		0.47	0.06	0.25	ug/L	EPA 200.8	
EFF-001	05/20/15	Lead		0.48	0.06	0.25	ug/L	EPA 200.8	
EFF-001	05/21/15	Lead		0.47	0.06	0.25	ug/L	EPA 200.8	
EFF-001	05/21/15	Lead		0.45	0.06	0.25	ug/L	EPA 200.8	
EFF-001	05/15/15	Manganese		210	0.2	0.5	ug/L	EPA 200.8	
EFF-001	05/16/15	Manganese		220	0.1	0.5	ug/L	EPA 200.8	
EFF-001	05/17/15	Manganese		220	0.1	0.5	ug/L	EPA 200.8	
EFF-001	05/18/15	Manganese		230	0.1	0.5	ug/L	EPA 200.8	
EFF-001	05/19/15	Manganese		250	0.1	0.5	ug/L	EPA 200.8	
EFF-001	05/20/15	Manganese		300	0.1	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Manganese		270	0.1	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Manganese		290	0.1	0.5	ug/L	EPA 200.8	
EFF-001	06/04/13	Mercury		0.0088	0.0002		ug/L		
EFF-001	06/26/13	Mercury		0.0077	0.0002		ug/L		
EFF-001	07/09/13	Mercury		0.013	0.0002		ug/L		
EFF-001	08/05/13	Mercury		0.0076	0.0002		ug/L		
EFF-001	09/03/13	Mercury		0.013	0.0002		ug/L		
EFF-001	10/11/13	Mercury		0.0091	0.0002		ug/L		
EFF-001	11/03/13	Mercury		0.0084	0.0002		ug/L		
EFF-001	11/07/13	Mercury		0.0089	0.0002		ug/L		
EFF-001	12/09/13	Mercury		0.0073	0.0002		ug/L		
EFF-001	01/06/14	Mercury		0.0077	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	01/06/14	Mercury		0.0077	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	01/28/14	Mercury		0.011	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	01/28/14	Mercury		0.011	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	02/10/14	Mercury		0.014	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	02/10/14	Mercury		0.014	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	03/03/14	Mercury		0.014	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	03/03/14	Mercury		0.014	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	05/05/14	Mercury		0.013	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	06/04/14	Mercury		0.0091	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	06/10/14	Mercury		0.012	0.0002	0.0005	ug/L	EPA 1631E	

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
EFF-001	07/07/14	Mercury		0.01	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	07/15/14	Mercury		0.01	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	08/04/14	Mercury		0.0087	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	08/11/14	Mercury		0.0077	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	09/08/14	Mercury		0.012	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	09/19/14	Mercury		0.013	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	10/06/14	Mercury		0.012	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	10/27/14	Mercury		0.0084	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	11/03/14	Mercury		0.01	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	12/01/14	Mercury		0.012	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	12/10/14	Mercury		0.012	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	12/11/14	Mercury		0.013	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	01/05/15	Mercury		0.0062	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	05/05/15	Mercury		0.01	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	05/15/15	Mercury		0.0083	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	05/16/15	Mercury		0.0092	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	05/17/15	Mercury		0.0098	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	05/18/15	Mercury		0.0088	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	05/19/15	Mercury		0.0095	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	05/20/15	Mercury		0.0092	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	05/21/15	Mercury		0.0083	0.0002	0.0005	ug/L	EPA 1631E	
EFF-001	06/26/13	Methoxychlor	<	0.005	0.005		ug/L		
EFF-001	10/28/14	Methoxychlor	<	0.005	0.005	0.01	ug/L	EPA 608	
EFF-001	06/26/13	Methyl chloride	<	0.23	0.23		ug/L		
EFF-001	10/28/14	Methyl chloride	<	0.23	0.23	0.5	ug/L	EPA 624	
EFF-001	06/04/13	Methylmercury		0.51	0.02		ng/L		
EFF-001	07/09/13	Methylmercury		0.39	0.02		ng/L		
EFF-001	08/05/13	Methylmercury		0.15	0.02		ng/L		
EFF-001	09/03/13	Methylmercury		0.36	0.02		ng/L		
EFF-001	10/11/13	Methylmercury		0.3	0.02		ng/L		
EFF-001	11/07/13	Methylmercury		0.21	0.02		ng/L		
EFF-001	01/28/14	Methylmercury		0.13	0.02	0.05	ng/L	EPA 1630	
EFF-001	02/10/14	Methylmercury		0.21	0.02	0.05	ng/L	EPA 1630	
EFF-001	03/03/14	Methylmercury		0.17	0.02	0.05	ng/L	EPA 1630	
EFF-001	06/26/13	Molybdenum		0.41	0.05		ug/L		
EFF-001	07/15/13	Molybdenum		6.3	0.05		ug/L		
EFF-001	10/07/13	Molybdenum		1	0.05		ug/L		
EFF-001	10/27/14	Molybdenum		2.9	0.07	0.25	ug/L	EPA 200.8	
EFF-001	12/11/14	Molybdenum		1.5	0.07	0.25	ug/L	EPA 200.8	
EFF-001	05/15/15	Molybdenum		1.3	0.14	0.25	ug/L	EPA 200.8	
EFF-001	05/16/15	Molybdenum		1.7	0.07	0.25	ug/L	EPA 200.8	
EFF-001	05/17/15	Molybdenum		2	0.07	0.25	ug/L	EPA 200.8	
EFF-001	05/18/15	Molybdenum		1.8	0.07	0.25	ug/L	EPA 200.8	
EFF-001	05/19/15	Molybdenum		1.5	0.07	0.25	ug/L	EPA 200.8	
EFF-001	05/20/15	Molybdenum		1.4	0.07	0.25	ug/L	EPA 200.8	
EFF-001	05/21/15	Molybdenum		1.2	0.07	0.25	ug/L	EPA 200.8	

Sample Location	Sample Date	Pollutant	Result	MDL	RL	Units	Analytical Method	Notes
EFF-001	05/21/15	Molybdenum	1.2	0.07	0.25	ug/L	EPA 200.8	
EFF-001	06/26/13	Naphthalene	< 0.03	0.03		ug/L		
EFF-001	10/28/14	Naphthalene	< 0.02	0.02	0.2	ug/L	EPA 625	
EFF-001	06/26/13	Nickel	16	0.06		ug/L		
EFF-001	07/15/13	Nickel	22	0.06		ug/L		
EFF-001	10/07/13	Nickel	20	0.06		ug/L		
EFF-001	10/27/14	Nickel	21	0.06	0.5	ug/L	EPA 200.8	
EFF-001	12/11/14	Nickel	17	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/15/15	Nickel	21	0.12	0.5	ug/L	EPA 200.8	
EFF-001	05/16/15	Nickel	19	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/17/15	Nickel	20	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/18/15	Nickel	20	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/19/15	Nickel	21	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/20/15	Nickel	22	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Nickel	20	0.06	0.5	ug/L	EPA 200.8	
EFF-001	05/21/15	Nickel	21	0.06	0.5	ug/L	EPA 200.8	
EFF-001	06/26/13	Nitrobenzene	< 0.95	0.95		ug/L		
EFF-001	10/28/14	Nitrobenzene	< 0.9	0.9	1	ug/L	EPA 625	
EFF-001	06/26/13	PCB 1016	< 0.05	0.05		ug/L		
EFF-001	10/28/14	PCB 1016	< 0.05	0.05	0.1	ug/L	EPA 608	
EFF-001	06/26/13	PCB 1221	< 0.05	0.05		ug/L		
EFF-001	10/28/14	PCB 1221	< 0.05	0.05	0.1	ug/L	EPA 608	
EFF-001	06/26/13	PCB 1232	< 0.05	0.05		ug/L		
EFF-001	10/28/14	PCB 1232	< 0.05	0.05	0.1	ug/L	EPA 608	
EFF-001	06/26/13	PCB 1242	< 0.04	0.04		ug/L		
EFF-001	10/28/14	PCB 1242	< 0.04	0.04	0.1	ug/L	EPA 608	
EFF-001	06/26/13	PCB 1248	< 0.05	0.05		ug/L		
EFF-001	10/28/14	PCB 1248	< 0.05	0.05	0.1	ug/L	EPA 608	
EFF-001	06/26/13	PCB 1254	< 0.05	0.05		ug/L		
EFF-001	10/28/14	PCB 1254	< 0.05	0.05	0.1	ug/L	EPA 608	
EFF-001	06/26/13	PCB 1260	< 0.05	0.05		ug/L		
EFF-001	10/28/14	PCB 1260	< 0.05	0.05	0.1	ug/L	EPA 608	
EFF-001	06/26/13	Pentachlorophenol	< 0.81	0.81		ug/L		
EFF-001	10/28/14	Pentachlorophenol	< 0.6	0.6	1	ug/L	EPA 625	
EFF-001	06/26/13	Phenanthrene	< 0.03	0.03		ug/L		
EFF-001	10/28/14	Phenanthrene	< 0.01	0.01	0.05	ug/L	EPA 625	
EFF-001	06/26/13	Phenol	< 0.69	0.69		ug/L		
EFF-001	10/28/14	Phenol	< 0.5	0.5	1	ug/L	EPA 625	
EFF-001	06/04/13	Selenium	2.4	0.06		ug/L		
EFF-001	06/26/13	Selenium	2.8	0.06		ug/L		
EFF-001	07/09/13	Selenium	4.7	0.06		ug/L		
EFF-001	07/15/13	Selenium	3	0.06		ug/L		
EFF-001	08/05/13	Selenium	5.2	0.06		ug/L		
EFF-001	08/13/13	Selenium	3.2	0.06		ug/L		
EFF-001	09/03/13	Selenium	3.2	0.06		ug/L		
EFF-001	10/01/13	Selenium	2.5	0.06		ug/L		

Sample Location	Sample Date	Pollutant	Result	MDL	RL	Units	Analytical Method	Notes
EFF-001	10/07/13	Selenium	2.1	0.06		ug/L		
EFF-001	11/03/13	Selenium	2.4	0.06		ug/L		
EFF-001	12/09/13	Selenium	1.8	0.06		ug/L		
EFF-001	01/06/14	Selenium	2	0.06	1	ug/L	EPA 200.8	
EFF-001	01/22/14	Selenium	1.7	0.06	1	ug/L	EPA 200.8	
EFF-001	02/10/14	Selenium	1.8	0.06	1	ug/L	EPA 200.8	
EFF-001	03/03/14	Selenium	1.7	0.06	1	ug/L	EPA 200.8	
EFF-001	05/05/14	Selenium	2.8	0.06	1	ug/L	EPA 200.8	
EFF-001	05/19/14	Selenium	2.6	0.06	1	ug/L	EPA 200.8	
EFF-001	06/04/14	Selenium	1.7	0.06	1	ug/L	EPA 200.8	
EFF-001	07/07/14	Selenium	2.6	0.06	1	ug/L	EPA 200.8	
EFF-001	08/04/14	Selenium	3.2	0.06	1	ug/L	EPA 200.8	
EFF-001	09/08/14	Selenium	5.7	0.07	1	ug/L	EPA 200.8	
EFF-001	10/06/14	Selenium	2.7	0.07	1	ug/L	EPA 200.8	
EFF-001	10/20/14	Selenium	1.6	0.07	1	ug/L	EPA 200.8	
EFF-001	10/27/14	Selenium	2.2	0.07	1	ug/L	EPA 200.8	
EFF-001	11/03/14	Selenium	2.5	0.07	1	ug/L	EPA 200.8	
EFF-001	12/01/14	Selenium	1.7	0.07	1	ug/L	EPA 200.8	
EFF-001	12/11/14	Selenium	2	0.07	1	ug/L	EPA 200.8	
EFF-001	01/05/15	Selenium	1.1	0.07	1	ug/L	EPA 200.8	
EFF-001	05/05/15	Selenium	1.7	0.07	1	ug/L	EPA 200.8	
EFF-001	05/15/15	Selenium	1.7	0.14	1	ug/L	EPA 200.8	
EFF-001	05/16/15	Selenium	1.8	0.07	1	ug/L	EPA 200.8	
EFF-001	05/17/15	Selenium	1.8	0.07	1	ug/L	EPA 200.8	
EFF-001	05/18/15	Selenium	1.9	0.07	1	ug/L	EPA 200.8	
EFF-001	05/19/15	Selenium	1.8	0.07	1	ug/L	EPA 200.8	
EFF-001	05/20/15	Selenium	1.9	0.07	1	ug/L	EPA 200.8	
EFF-001	05/21/15	Selenium	1.7	0.07	1	ug/L	EPA 200.8	
EFF-001	05/21/15	Selenium	1.8	0.07	1	ug/L	EPA 200.8	
EFF-001	06/26/13	Silver	J 0.02	0.02		ug/L		
EFF-001	07/15/13	Silver	0.14	0.02		ug/L		
EFF-001	10/07/13	Silver	J 0.05	0.02		ug/L		
EFF-001	10/27/14	Silver	J 0.07	0.02	0.1	ug/L	EPA 200.8	
EFF-001	12/11/14	Silver	J 0.08	0.02	0.1	ug/L	EPA 200.8	
EFF-001	05/15/15	Silver	J 0.18	0.04	0.2	ug/L	EPA 200.8	
EFF-001	05/16/15	Silver	J 0.03	0.02	0.1	ug/L	EPA 200.8	
EFF-001	05/17/15	Silver	J 0.03	0.02	0.1	ug/L	EPA 200.8	
EFF-001	05/18/15	Silver	J 0.04	0.02	0.1	ug/L	EPA 200.8	
EFF-001	05/19/15	Silver	J 0.04	0.02	0.1	ug/L	EPA 200.8	
EFF-001	05/20/15	Silver	J 0.04	0.02	0.1	ug/L	EPA 200.8	
EFF-001	05/21/15	Silver	< 0.02	0.02	0.1	ug/L	EPA 200.8	
EFF-001	05/21/15	Silver	< 0.02	0.02	0.1	ug/L	EPA 200.8	
EFF-001	06/26/13	Sulfate as SO4	41	1		mg/L		
EFF-001	08/13/13	Sulfate as SO4	88	1		mg/L		
EFF-001	06/26/13	Surfactants (MBAS)	J 0.42	0.12		mg/L		
EFF-001	08/13/13	Surfactants (MBAS)	0.16	0.01		mg/L		

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
EFF-001	06/26/13	Tetrachloroethylene	<	0.19	0.19		ug/L		
EFF-001	10/28/14	Tetrachloroethylene	<	0.19	0.19	0.5	ug/L	EPA 624	
EFF-001	06/26/13	Thallium	<	0.05	0.05		ug/L		
EFF-001	07/15/13	Thallium	<	0.05	0.05		ug/L		
EFF-001	10/07/13	Thallium	<	0.05	0.05		ug/L		
EFF-001	10/27/14	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	12/11/14	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/15/15	Thallium	<	0.1	0.1	0.2	ug/L	EPA 200.8	
EFF-001	05/16/15	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/17/15	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/18/15	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/19/15	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/20/15	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/21/15	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	05/21/15	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-001	06/26/13	Toluene	<	0.19	0.19		ug/L		
EFF-001	10/28/14	Toluene	<	0.19	0.19	0.5	ug/L	EPA 624	
EFF-001	06/26/13	Toxaphene	<	0.3	0.3		ug/L		
EFF-001	10/28/14	Toxaphene	<	0.3	0.3	0.5	ug/L	EPA 608	
EFF-001	06/26/13	Trichloroethylene	<	0.2	0.2		ug/L		
EFF-001	10/28/14	Trichloroethylene	<	0.2	0.2	0.5	ug/L	EPA 624	
EFF-001	06/26/13	Vanadium		6.2	0.1		ug/L		
EFF-001	07/15/13	Vanadium		25	0.1		ug/L		
EFF-001	10/07/13	Vanadium		8.9	0.1		ug/L		
EFF-001	10/27/14	Vanadium		16	0.3	2	ug/L	EPA 200.8	
EFF-001	12/11/14	Vanadium		13	0.3	2	ug/L	EPA 200.8	
EFF-001	05/15/15	Vanadium		8.6	0.6	2	ug/L	EPA 200.8	
EFF-001	05/16/15	Vanadium		8.8	0.3	2	ug/L	EPA 200.8	
EFF-001	05/17/15	Vanadium		9.7	0.3	2	ug/L	EPA 200.8	
EFF-001	05/18/15	Vanadium		8.9	0.3	2	ug/L	EPA 200.8	
EFF-001	05/19/15	Vanadium		8.9	0.3	2	ug/L	EPA 200.8	
EFF-001	05/20/15	Vanadium		9.1	0.3	2	ug/L	EPA 200.8	
EFF-001	05/21/15	Vanadium		7.5	0.3	2	ug/L	EPA 200.8	
EFF-001	05/21/15	Vanadium		7.9	0.3	2	ug/L	EPA 200.8	
EFF-001	06/26/13	Zinc		7.3	0.7		ug/L		
EFF-001	06/26/13	Zinc	J	12	6		ug/L		
EFF-001	07/15/13	Zinc		5.3	0.7		ug/L		
EFF-001	08/13/13	Zinc		8.3	0.7		ug/L		
EFF-001	10/07/13	Zinc		5.8	0.7		ug/L		
EFF-001	10/27/14	Zinc		9	0.7	1	ug/L	EPA 200.8	
EFF-001	12/11/14	Zinc		10	0.7	1	ug/L	EPA 200.8	Detected in equipment blank at 60 ug/L.
EFF-001	05/15/15	Zinc		12	1.4	10	ug/L	EPA 200.8	
EFF-001	05/16/15	Zinc	J	7.7	0.7	10	ug/L	EPA 200.8	
EFF-001	05/17/15	Zinc	J	8.2	0.7	1	ug/L	EPA 200.8	
EFF-001	05/18/15	Zinc	J	8.1	0.7	1	ug/L	EPA 200.8	
EFF-001	05/19/15	Zinc	J	7.1	0.7	10	ug/L	EPA 200.8	

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
EFF-001	05/20/15	Zinc	J	6.9	0.7	10	ug/L	EPA 200.8	
EFF-001	05/21/15	Zinc	<	0.7	0.7	1	ug/L	EPA 200.8	
EFF-001	05/21/15	Zinc	<	0.7	0.7	1	ug/L	EPA 200.8	
EFF-002	04/09/14	1,2-Dichlorobenzene	<	0.27	0.27	0.5	ug/L	EPA 624	
EFF-002	02/18/15	1,2-Dichlorobenzene	<	0.27	0.27	0.5	ug/L	EPA 624	
EFF-002	04/09/14	1,2-Diphenylhydrazine	<	0.7	0.7	1	ug/L	EPA 625	
EFF-002	02/18/15	1,2-Diphenylhydrazine	<	0.7	0.7	1	ug/L	EPA 625	
EFF-002	04/09/14	1,3-Dichlorobenzene	<	0.18	0.18	0.5	ug/L	EPA 624	
EFF-002	02/18/15	1,3-Dichlorobenzene	<	0.18	0.18	0.5	ug/L	EPA 624	
EFF-002	04/09/14	1,4-Dichlorobenzene	<	0.18	0.18	0.5	ug/L	EPA 624	
EFF-002	02/18/15	1,4-Dichlorobenzene	<	0.18	0.18	0.5	ug/L	EPA 624	
EFF-002	04/09/14	2,4,6-Trichlorophenol	<	0.97	0.97	5	ug/L	EPA 625	
EFF-002	02/18/15	2,4,6-Trichlorophenol	<	0.97	0.97	5	ug/L	EPA 625	
EFF-002	04/09/14	2,4-Dimethylphenol	<	0.8	0.8	2	ug/L	EPA 625	
EFF-002	02/18/15	2,4-Dimethylphenol	<	0.8	0.8	2	ug/L	EPA 625	
EFF-002	04/09/14	2,4-Dinitrophenol	<	0.9	0.9	5	ug/L	EPA 625	
EFF-002	02/18/15	2,4-Dinitrophenol	<	0.9	0.9	5	ug/L	EPA 625	
EFF-002	04/09/14	2,4-Dinitrotoluene	<	0.7	0.7	5	ug/L	EPA 625	
EFF-002	02/18/15	2,4-Dinitrotoluene	<	0.7	0.7	5	ug/L	EPA 625	
EFF-002	04/09/14	2-4-Dichlorophenol	<	0.9	0.9	1	ug/L	EPA 625	
EFF-002	02/18/15	2-4-Dichlorophenol	<	0.9	0.9	1	ug/L	EPA 625	
EFF-002	04/09/14	2-Chlorophenol	<	0.7	0.7	2	ug/L	EPA 625	
EFF-002	02/18/15	2-Chlorophenol	<	0.7	0.7	2	ug/L	EPA 625	
EFF-002	04/09/14	4,4'-DDD	<	0.004	0.004	0.01	ug/L	EPA 608	
EFF-002	02/18/15	4,4'-DDD	<	0.004	0.004	0.01	ug/L	EPA 608	
EFF-002	04/09/14	4,4'-DDE	<	0.003	0.003	0.01	ug/L	EPA 608	
EFF-002	02/18/15	4,4'-DDE	<	0.003	0.003	0.01	ug/L	EPA 608	
EFF-002	04/09/14	4,4'-DDT	<	0.004	0.004	0.01	ug/L	EPA 608	
EFF-002	02/18/15	4,4'-DDT	<	0.004	0.004	0.01	ug/L	EPA 608	
EFF-002	04/09/14	Acrylonitrile	<	1	1	2	ug/L	EPA 624	
EFF-002	02/18/15	Acrylonitrile	<	0.69	0.69	2	ug/L	EPA 624	
EFF-002	04/09/14	Aldrin	<	0.004	0.004	0.005	ug/L	EPA 608	
EFF-002	02/18/15	Aldrin	<	0.004	0.004	0.005	ug/L	EPA 608	
EFF-002	04/07/14	Aluminum		1000	4	10	ug/L	EPA 200.8	
EFF-002	04/08/14	Aluminum		980	2	10	ug/L	EPA 200.8	
EFF-002	04/21/14	Aluminum		1400	4	10	ug/L	EPA 200.8	
EFF-002	04/09/14	Anthracene	<	0.01	0.01	0.3	ug/L	EPA 625	
EFF-002	02/18/15	Anthracene	<	0.01	0.01	0.3	ug/L	EPA 625	
EFF-002	04/08/14	Antimony	J	0.41	0.05	0.5	ug/L	EPA 200.8	
EFF-002	02/17/15	Antimony	J	0.35	0.05	0.5	ug/L	EPA 200.8	
EFF-002	04/08/14	Arsenic		11	0.06	0.5	ug/L	EPA 200.8	
EFF-002	02/17/15	Arsenic		7.3	0.06	0.5	ug/L	EPA 200.8	
EFF-002	04/09/14	Benzene	<	0.18	0.18	0.5	ug/L	EPA 624	
EFF-002	02/18/15	Benzene	<	0.18	0.18	0.5	ug/L	EPA 624	
EFF-002	04/08/14	Beryllium	<	0.06	0.06	0.1	ug/L	EPA 200.8	
EFF-002	02/17/15	Beryllium	<	0.09	0.09	0.1	ug/L	EPA 200.8	

Sample Location	Sample Date	Pollutant	Result	MDL	RL	Units	Analytical Method	Notes
EFF-002	04/08/14	Cadmium	0.23	0.05	0.1	ug/L	EPA 200.8	
EFF-002	02/09/15	Cadmium	< 0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-002	02/17/15	Cadmium	J 0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-002	04/09/14	Carbon tetrachloride	< 0.16	0.16	0.5	ug/L	EPA 624	
EFF-002	02/18/15	Carbon tetrachloride	< 0.16	0.16	0.5	ug/L	EPA 624	
EFF-002	04/09/14	Chlordane	< 0.02	0.02	0.05	ug/L	EPA 608	
EFF-002	02/18/15	Chlordane	< 0.02	0.02	0.05	ug/L	EPA 608	
EFF-002	04/09/14	Chlorobenzene	< 0.18	0.18	0.5	ug/L	EPA 624	
EFF-002	02/18/15	Chlorobenzene	< 0.18	0.18	0.5	ug/L	EPA 624	
EFF-002	04/09/14	Chloroform	0.7	0.19	0.5	ug/L	EPA 624	
EFF-002	02/18/15	Chloroform	< 0.19	0.19	0.5	ug/L	EPA 624	
EFF-002	04/09/14	Chlorpyrifos	< 0.005	0.005	0.01	ug/L	EPA 614	
EFF-002	02/18/15	Chlorpyrifos	< 0.005	0.005	0.01	ug/L	EPA 614	
EFF-002	04/08/14	Chromium	4.9	0.05	0.5	ug/L	EPA 200.8	
EFF-002	02/17/15	Chromium	5.1	0.05	0.5	ug/L	EPA 200.8	
EFF-002	04/07/14	Copper	7.6	0.07	0.5	ug/L	EPA 200.8	
EFF-002	04/08/14	Copper	21	0.07	0.5	ug/L	EPA 200.8	
EFF-002	04/21/14	Copper	8.2	0.07	0.5	ug/L	EPA 200.8	
EFF-002	02/09/15	Copper	4.1	0.15	0.5	ug/L	EPA 200.8	
EFF-002	02/17/15	Copper	13	0.15	0.5	ug/L	EPA 200.8	
EFF-002	03/09/15	Copper	7.8	0.15	0.5	ug/L	EPA 200.8	
EFF-002	04/08/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-002	02/17/15	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
EFF-002	04/09/14	Diazinon	< 0.007	0.007	0.02	ug/L	EPA 614	
EFF-002	02/18/15	Diazinon	< 0.007	0.007	0.02	ug/L	EPA 614	
EFF-002	04/09/14	Endrin	< 0.005	0.005	0.01	ug/L	EPA 608	
EFF-002	02/18/15	Endrin	< 0.005	0.005	0.01	ug/L	EPA 608	
EFF-002	04/09/14	Ethylbenzene	< 0.26	0.26	0.5	ug/L	EPA 624	
EFF-002	02/18/15	Ethylbenzene	< 0.26	0.26	0.5	ug/L	EPA 624	
EFF-002	04/09/14	gamma-BHC	< 0.004	0.004	0.01	ug/L	EPA 608	
EFF-002	02/18/15	gamma-BHC	< 0.004	0.004	0.01	ug/L	EPA 608	
EFF-002	04/09/14	Heptachlor	< 0.005	0.005	0.01	ug/L	EPA 608	
EFF-002	02/18/15	Heptachlor	< 0.005	0.005	0.01	ug/L	EPA 608	
EFF-002	04/09/14	Hexachlorobenzene	< 0.7	0.7	1	ug/L	EPA 625	
EFF-002	02/18/15	Hexachlorobenzene	< 0.7	0.7	1	ug/L	EPA 625	
EFF-002	04/08/14	Lead	0.55	0.03	0.25	ug/L	EPA 200.8	
EFF-002	02/17/15	Lead	0.45	0.03	0.25	ug/L	EPA 200.8	
EFF-002	04/08/14	Mercury	0.0058	0.0002	0.0005	ug/L	EPA 1631E	
EFF-002	02/09/15	Mercury	0.0089	0.0002	0.0005	ug/L	EPA 1631E	
EFF-002	02/17/15	Mercury	0.0061	0.0002	0.0005	ug/L	EPA 1631E	
EFF-002	03/09/15	Mercury	0.0066	0.0002	0.0005	ug/L	EPA 1631E	
EFF-002	04/09/14	Methoxychlor	< 0.005	0.005	0.01	ug/L	EPA 608	
EFF-002	02/18/15	Methoxychlor	< 0.005	0.005	0.01	ug/L	EPA 608	
EFF-002	04/09/14	Methyl chloride	< 0.23	0.23	0.5	ug/L	EPA 624	
EFF-002	02/18/15	Methyl chloride	< 0.3	0.3	0.5	ug/L	EPA 624	
EFF-002	04/08/14	Methylmercury	0.53	0.02	0.05	ng/L	EPA 1630	

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
EFF-002	02/09/15	Methylmercury		0.88	0.02	0.05	ng/L	EPA 1630	
EFF-002	03/09/15	Methylmercury		0.61	0.02	0.05	ng/L	EPA 1630	
EFF-002	04/09/14	Naphthalene	J	0.02	0.02	0.2	ug/L	EPA 625	
EFF-002	02/18/15	Naphthalene	<	0.02	0.02	0.2	ug/L	EPA 625	
EFF-002	04/08/14	Nickel		19	0.06	0.5	ug/L	EPA 200.8	
EFF-002	02/17/15	Nickel		18	0.06	0.5	ug/L	EPA 200.8	
EFF-002	04/09/14	Nitrobenzene	<	0.9	0.9	1	ug/L	EPA 625	
EFF-002	02/18/15	Nitrobenzene	<	0.9	0.9	1	ug/L	EPA 625	
EFF-002	04/09/14	PCB 1016	<	0.05	0.05	0.1	ug/L	EPA 608	
EFF-002	02/18/15	PCB 1016	<	0.05	0.05	0.1	ug/L	EPA 608	
EFF-002	04/09/14	PCB 1221	<	0.05	0.05	0.1	ug/L	EPA 608	
EFF-002	02/18/15	PCB 1221	<	0.05	0.05	0.1	ug/L	EPA 608	
EFF-002	04/09/14	PCB 1232	<	0.05	0.05	0.1	ug/L	EPA 608	
EFF-002	02/18/15	PCB 1232	<	0.05	0.05	0.1	ug/L	EPA 608	
EFF-002	04/09/14	PCB 1242	<	0.04	0.04	0.1	ug/L	EPA 608	
EFF-002	02/18/15	PCB 1242	<	0.04	0.04	0.1	ug/L	EPA 608	
EFF-002	04/09/14	PCB 1248	<	0.05	0.05	0.1	ug/L	EPA 608	
EFF-002	02/18/15	PCB 1248	<	0.05	0.05	0.1	ug/L	EPA 608	
EFF-002	04/09/14	PCB 1254	<	0.05	0.05	0.1	ug/L	EPA 608	
EFF-002	02/18/15	PCB 1254	<	0.05	0.05	0.1	ug/L	EPA 608	
EFF-002	04/09/14	PCB 1260	<	0.05	0.05	0.1	ug/L	EPA 608	
EFF-002	02/18/15	PCB 1260	<	0.05	0.05	0.1	ug/L	EPA 608	
EFF-002	04/09/14	Pentachlorophenol	<	0.6	0.6	1	ug/L	EPA 625	
EFF-002	02/18/15	Pentachlorophenol	<	0.6	0.6	1	ug/L	EPA 625	
EFF-002	04/09/14	Phenanthrene	<	0.01	0.01	0.05	ug/L	EPA 625	
EFF-002	02/18/15	Phenanthrene	<	0.01	0.01	0.05	ug/L	EPA 625	
EFF-002	04/09/14	Phenol	<	0.5	0.5	1	ug/L	EPA 625	
EFF-002	02/18/15	Phenol	<	0.5	0.5	1	ug/L	EPA 625	
EFF-002	04/07/14	Selenium		1.3	0.4	1	ug/L	EPA 200.8	
EFF-002	04/08/14	Selenium		1.6	0.4	1	ug/L	EPA 200.8	
EFF-002	04/21/14	Selenium		1.6	0.06	1	ug/L	EPA 200.8	
EFF-002	02/09/15	Selenium	J	0.66	0.07	1	ug/L	EPA 200.8	
EFF-002	02/17/15	Selenium		1.2	0.07	1	ug/L	EPA 200.8	
EFF-002	03/09/15	Selenium		1.3	0.07	1	ug/L	EPA 200.8	
EFF-002	04/08/14	Silver	<	0.02	0.02	0.1	ug/L	EPA 200.8	
EFF-002	02/17/15	Silver	<	0.02	0.02	0.1	ug/L	EPA 200.8	
EFF-002	04/09/14	Tetrachloroethylene	<	0.19	0.19	0.5	ug/L	EPA 624	
EFF-002	02/18/15	Tetrachloroethylene	<	0.19	0.19	0.5	ug/L	EPA 624	
EFF-002	04/08/14	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-002	02/17/15	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
EFF-002	04/09/14	Toluene	<	0.19	0.19	0.5	ug/L	EPA 624	
EFF-002	02/18/15	Toluene	<	0.19	0.19	0.5	ug/L	EPA 624	
EFF-002	04/09/14	Toxaphene	<	0.3	0.3	0.5	ug/L	EPA 608	
EFF-002	02/18/15	Toxaphene	<	0.3	0.3	0.5	ug/L	EPA 608	
EFF-002	04/09/14	Trichloroethylene	<	0.2	0.2	0.5	ug/L	EPA 624	
EFF-002	02/18/15	Trichloroethylene	<	0.2	0.2	0.5	ug/L	EPA 624	

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
EFF-002	04/08/14	Zinc		12	0.7	1	ug/L	EPA 200.8	
EFF-002	02/17/15	Zinc		6.9	0.7	1	ug/L	EPA 200.8	
INF-001	06/26/13	1,2-Dichlorobenzene	<	1.4	1.4		ug/L		
INF-001	10/28/14	1,2-Dichlorobenzene	<	1.4	1.4	2.5	ug/L	EPA 624	
INF-001	06/26/13	1,2-Diphenylhydrazine	<	9	9		ug/L		
INF-001	10/28/14	1,2-Diphenylhydrazine	<	3.5	3.5	5	ug/L	EPA 625	
INF-001	06/26/13	1,3-Dichlorobenzene	<	0.9	0.9		ug/L		
INF-001	10/28/14	1,3-Dichlorobenzene	<	0.9	0.9	2.5	ug/L	EPA 624	
INF-001	06/26/13	1,4-Dichlorobenzene	<	0.9	0.9		ug/L		
INF-001	10/28/14	1,4-Dichlorobenzene	<	0.9	0.9	2.5	ug/L	EPA 624	
INF-001	06/26/13	2,4,6-Trichlorophenol	<	9.7	9.7		ug/L		
INF-001	10/28/14	2,4,6-Trichlorophenol	<	4.8	4.8	10	ug/L	EPA 625	
INF-001	06/26/13	2,4-Dichlorophenol	<	9.9	9.9		ug/L		
INF-001	10/28/14	2,4-Dichlorophenol	<	4.5	4.5	5	ug/L	EPA 625	
INF-001	06/26/13	2,4-Dimethylphenol	<	8.7	8.7		ug/L		
INF-001	10/28/14	2,4-Dimethylphenol	<	4	4	5	ug/L	EPA 625	
INF-001	06/26/13	2,4-Dinitrophenol	<	8.3	8.3		ug/L		
INF-001	10/28/14	2,4-Dinitrophenol	<	4.5	4.5	10	ug/L	EPA 625	
INF-001	06/26/13	2,4-Dinitrotoluene	<	9.6	9.6		ug/L		
INF-001	10/28/14	2,4-Dinitrotoluene	<	3.5	3.5	5	ug/L	EPA 625	
INF-001	06/26/13	2-Chlorophenol	<	9.8	9.8		ug/L		
INF-001	10/28/14	2-Chlorophenol	<	3.5	3.5	10	ug/L	EPA 625	
INF-001	06/26/13	4,4'-DDD	<	0.008	0.008		ug/L		
INF-001	10/28/14	4,4'-DDD	<	0.008	0.008	0.1	ug/L	EPA 608	
INF-001	06/26/13	4,4'-DDE	<	0.006	0.006		ug/L		
INF-001	10/28/14	4,4'-DDE	<	0.006	0.006	0.1	ug/L	EPA 608	
INF-001	06/26/13	4,4'-DDT	<	0.008	0.008		ug/L		
INF-001	10/28/14	4,4'-DDT	<	0.008	0.008	0.1	ug/L	EPA 608	
INF-001	06/26/13	Acrylonitrile	<	5	5		ug/L		
INF-001	10/28/14	Acrylonitrile	<	5	5	10	ug/L	EPA 624	
INF-001	06/26/13	Aldrin	<	0.008	0.008		ug/L		
INF-001	10/28/14	Aldrin	<	0.008	0.008	0.05	ug/L	EPA 608	
INF-001	10/28/14	alpha-Chlordane	<	0.008	0.008	0.5	ug/L	EPA 608	
INF-001	06/26/13	Aluminum		260	1		ug/L		
INF-001	06/26/13	Aluminum		400	1		ug/L		
INF-001	08/13/13	Aluminum		400	1		ug/L		
INF-001	10/07/13	Aluminum		310	1		ug/L		
INF-001	10/27/14	Aluminum		320	1.2	10	ug/L	EPA 200.8	
INF-001	11/13/14	Aluminum		330	1.2	10	ug/L	EPA 200.8	
INF-001	11/14/14	Aluminum		330	1.2	10	ug/L	EPA 200.8	
INF-001	11/15/14	Aluminum		280	1.2	10	ug/L	EPA 200.8	
INF-001	11/16/14	Aluminum		350	1.2	10	ug/L	EPA 200.8	
INF-001	11/17/14	Aluminum		380	1.2	10	ug/L	EPA 200.8	
INF-001	11/18/14	Aluminum		390	1.2	10	ug/L	EPA 200.8	
INF-001	11/19/14	Aluminum		600	2.4	10	ug/L	EPA 200.8	
INF-001	11/20/14	Aluminum		420	1.2	10	ug/L	EPA 200.8	

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
INF-001	11/21/14	Aluminum		240	1.2	10	ug/L	EPA 200.8	
INF-001	06/26/13	Anthracene	<	0.3	0.3		ug/L		
INF-001	10/28/14	Anthracene	<	0.05	0.05	5	ug/L	EPA 625	
INF-001	06/26/13	Antimony	J	0.4	0.05		ug/L		
INF-001	08/13/13	Antimony	J	0.47	0.05		ug/L		
INF-001	10/07/13	Antimony	J	0.34	0.05		ug/L		
INF-001	10/27/14	Antimony	J	0.32	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/13/14	Antimony	J	0.27	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/14/14	Antimony	J	0.32	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/15/14	Antimony	J	0.3	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/16/14	Antimony	J	0.38	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/17/14	Antimony	J	0.35	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/18/14	Antimony	J	0.34	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/19/14	Antimony	J	0.32	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/20/14	Antimony	J	0.27	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/21/14	Antimony	J	0.23	0.05	0.5	ug/L	EPA 200.8	
INF-001	06/26/13	Arsenic		5	0.06		ug/L		
INF-001	08/13/13	Arsenic		5.7	0.06		ug/L		
INF-001	10/07/13	Arsenic		4.9	0.06		ug/L		
INF-001	10/27/14	Arsenic		5.1	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/13/14	Arsenic		5.1	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/14/14	Arsenic		5	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/15/14	Arsenic		4.4	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/16/14	Arsenic		4.9	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/17/14	Arsenic		5	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/18/14	Arsenic		4.9	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/19/14	Arsenic		5.4	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/20/14	Arsenic		4.6	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/21/14	Arsenic		4.4	0.06	0.5	ug/L	EPA 200.8	
INF-001	06/26/13	Barium		86	0.04		ug/L		
INF-001	08/13/13	Barium		110	0.04		ug/L		
INF-001	10/07/13	Barium		94	0.04		ug/L		
INF-001	10/27/14	Barium		78	0.08	0.1	ug/L	EPA 200.8	
INF-001	11/13/14	Barium		100	0.08	0.1	ug/L	EPA 200.8	
INF-001	11/14/14	Barium		98	0.08	0.1	ug/L	EPA 200.8	
INF-001	11/15/14	Barium		97	0.08	0.1	ug/L	EPA 200.8	
INF-001	11/16/14	Barium		94	0.08	0.1	ug/L	EPA 200.8	
INF-001	11/17/14	Barium		94	0.08	0.1	ug/L	EPA 200.8	
INF-001	11/18/14	Barium		100	0.08	0.1	ug/L	EPA 200.8	
INF-001	11/19/14	Barium		130	0.08	0.1	ug/L	EPA 200.8	
INF-001	11/20/14	Barium		100	0.08	0.1	ug/L	EPA 200.8	
INF-001	11/21/14	Barium		85	0.08	0.1	ug/L	EPA 200.8	
INF-001	06/26/13	Benzene	<	0.9	0.9		ug/L		
INF-001	10/28/14	Benzene	<	0.9	0.9	2.5	ug/L	EPA 624	
INF-001	06/26/13	Beryllium	<	0.06	0.06		ug/L		
INF-001	08/13/13	Beryllium	<	0.06	0.06		ug/L		

Sample Location	Sample Date	Pollutant	Result	MDL	RL	Units	Analytical Method	Notes
INF-001	10/07/13	Beryllium	< 0.06	0.06		ug/L		
INF-001	10/27/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
INF-001	11/13/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
INF-001	11/14/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
INF-001	11/15/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
INF-001	11/16/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
INF-001	11/17/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
INF-001	11/18/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
INF-001	11/19/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
INF-001	11/20/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
INF-001	11/21/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
INF-001	06/26/13	Cadmium	0.14	0.05		ug/L		
INF-001	08/13/13	Cadmium	0.14	0.05		ug/L		
INF-001	10/07/13	Cadmium	0.17	0.05		ug/L		
INF-001	10/27/14	Cadmium	0.12	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/13/14	Cadmium	0.18	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/14/14	Cadmium	0.18	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/15/14	Cadmium	0.2	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/16/14	Cadmium	0.41	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/17/14	Cadmium	0.21	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/18/14	Cadmium	0.2	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/19/14	Cadmium	0.19	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/20/14	Cadmium	0.2	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/21/14	Cadmium	0.19	0.05	0.1	ug/L	EPA 200.8	
INF-001	06/26/13	Carbon tetrachloride	< 0.8	0.8		ug/L		
INF-001	10/28/14	Carbon tetrachloride	< 0.8	0.8	2.5	ug/L	EPA 624	
INF-001	06/26/13	Chlordane	< 0.01	0.01		ug/L		
INF-001	10/28/14	Chlordane	< 0.04	0.04	0.5	ug/L	EPA 608	
INF-001	06/26/13	Chlorobenzene	< 0.9	0.9		ug/L		
INF-001	10/28/14	Chlorobenzene	< 0.9	0.9	2.5	ug/L	EPA 624	
INF-001	06/26/13	Chloroform	< 0.95	0.95		ug/L		
INF-001	10/28/14	Chloroform	< 0.95	0.95	2.5	ug/L	EPA 624	
INF-001	06/26/13	Chromium	9.8	0.05		ug/L		
INF-001	08/13/13	Chromium	13	0.05		ug/L		
INF-001	10/07/13	Chromium	12	0.05		ug/L		
INF-001	10/27/14	Chromium	10	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/13/14	Chromium	15	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/14/14	Chromium	14	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/15/14	Chromium	15	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/16/14	Chromium	13	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/17/14	Chromium	14	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/18/14	Chromium	16	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/19/14	Chromium	20	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/20/14	Chromium	15	0.05	0.5	ug/L	EPA 200.8	
INF-001	11/21/14	Chromium	10	0.05	0.5	ug/L	EPA 200.8	
INF-001	06/26/13	Cobalt	J 0.4	0.02		ug/L		

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
INF-001	08/13/13	Cobalt		0.55	0.02		ug/L		
INF-001	10/07/13	Cobalt	J	0.3	0.02		ug/L		
INF-001	10/27/14	Cobalt	J	0.32	0.02	0.5	ug/L	EPA 200.8	
INF-001	11/13/14	Cobalt	J	0.42	0.02	0.5	ug/L	EPA 200.8	
INF-001	11/14/14	Cobalt	J	0.41	0.02	0.5	ug/L	EPA 200.8	
INF-001	11/15/14	Cobalt	J	0.36	0.02	0.5	ug/L	EPA 200.8	
INF-001	11/16/14	Cobalt	J	0.34	0.02	0.5	ug/L	EPA 200.8	
INF-001	11/17/14	Cobalt	J	0.32	0.02	0.5	ug/L	EPA 200.8	
INF-001	11/18/14	Cobalt	J	0.42	0.02	0.5	ug/L	EPA 200.8	
INF-001	11/19/14	Cobalt		0.56	0.02	0.5	ug/L	EPA 200.8	
INF-001	11/20/14	Cobalt	J	0.46	0.02	0.5	ug/L	EPA 200.8	
INF-001	11/21/14	Cobalt	J	0.3	0.02	0.5	ug/L	EPA 200.8	
INF-001	06/26/13	Copper		61	1		ug/L		
INF-001	06/26/13	Copper		62	0.07		ug/L		
INF-001	07/09/13	Copper		71	0.07		ug/L		
INF-001	08/13/13	Copper		78	0.07		ug/L		
INF-001	08/13/13	Copper		83	1		ug/L		
INF-001	10/07/13	Copper		98	0.07		ug/L		
INF-001	10/27/14	Copper		64	0.15	0.5	ug/L	EPA 200.8	
INF-001	11/13/14	Copper		75	0.15	0.5	ug/L	EPA 200.8	
INF-001	11/14/14	Copper		69	0.15	0.5	ug/L	EPA 200.8	
INF-001	11/15/14	Copper		69	0.15	0.5	ug/L	EPA 200.8	
INF-001	11/16/14	Copper		69	0.15	0.5	ug/L	EPA 200.8	
INF-001	11/17/14	Copper		68	0.15	0.5	ug/L	EPA 200.8	
INF-001	11/18/14	Copper		69	0.15	0.5	ug/L	EPA 200.8	
INF-001	11/19/14	Copper		85	0.15	0.5	ug/L	EPA 200.8	
INF-001	11/20/14	Copper		69	0.15	0.5	ug/L	EPA 200.8	
INF-001	11/21/14	Copper		52	0.15	0.5	ug/L	EPA 200.8	
INF-001	06/26/13	Cyanide	<	0.9	0.9		ug/L		
INF-001	10/27/14	Cyanide	J	2.7	0.9	3	ug/L	SM 4500CN_C&E	
INF-001	11/13/14	Cyanide	J	0.96	0.9	3	ug/L	SM 4500CN_C&E	
INF-001	11/14/14	Cyanide	J	0.96	0.9	3	ug/L	SM 4500CN_C&E	
INF-001	11/15/14	Cyanide	<	0.9	0.9	3	ug/L	SM 4500CN_C&E	
INF-001	11/16/14	Cyanide	<	0.9	0.9	3	ug/L	SM 4500CN_C&E	
INF-001	11/17/14	Cyanide	<	0.9	0.9	3	ug/L	SM 4500CN_C&E	
INF-001	11/18/14	Cyanide	<	0.9	0.9	3	ug/L	SM 4500CN_C&E	
INF-001	11/19/14	Cyanide	<	0.9	0.9	3	ug/L	SM 4500CN_C&E	
INF-001	06/26/13	Endrin	<	0.01	0.01		ug/L		
INF-001	10/28/14	Endrin	<	0.01	0.01	0.1	ug/L	EPA 608	
INF-001	06/26/13	Ethylbenzene	<	1.3	1.3		ug/L		
INF-001	10/28/14	Ethylbenzene	<	1.3	1.3	2.5	ug/L	EPA 624	
INF-001	06/26/13	gamma-BHC	<	0.008	0.008		ug/L		
INF-001	10/28/14	gamma-BHC	<	0.008	0.008	0.05	ug/L	EPA 608	
INF-001	10/28/14	gamma-Chlordane	<	0.008	0.008	0.5	ug/L	EPA 608	
INF-001	06/26/13	Heptachlor	<	0.01	0.01		ug/L		
INF-001	10/28/14	Heptachlor	<	0.05	0.05	0.05	ug/L	EPA 608	

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
INF-001	06/26/13	Hexachlorobenzene	<	9.1	9.1		ug/L		
INF-001	10/28/14	Hexachlorobenzene	<	3.5	3.5	5	ug/L	EPA 625	
INF-001	06/26/13	Lead		1.3	0.03		ug/L		
INF-001	08/13/13	Lead		1.4	0.03		ug/L		
INF-001	10/07/13	Lead		0.93	0.03		ug/L		
INF-001	10/27/14	Lead		0.87	0.03	0.25	ug/L	EPA 200.8	
INF-001	11/13/14	Lead		0.96	0.03	0.25	ug/L	EPA 200.8	
INF-001	11/14/14	Lead		1.1	0.03	0.25	ug/L	EPA 200.8	
INF-001	11/15/14	Lead		0.9	0.03	0.25	ug/L	EPA 200.8	
INF-001	11/16/14	Lead		1.3	0.03	0.25	ug/L	EPA 200.8	
INF-001	11/17/14	Lead		0.93	0.03	0.25	ug/L	EPA 200.8	
INF-001	11/18/14	Lead		1.2	0.03	0.25	ug/L	EPA 200.8	
INF-001	11/19/14	Lead		3.4	0.03	0.25	ug/L	EPA 200.8	
INF-001	11/20/14	Lead		0.99	0.03	0.25	ug/L	EPA 200.8	
INF-001	11/21/14	Lead		0.68	0.03	0.25	ug/L	EPA 200.8	
INF-001	06/04/13	Mercury		0.93	0.002		ug/L		
INF-001	06/26/13	Mercury		0.043	0.0002		ug/L		
INF-001	07/09/13	Mercury		0.034	0.0002		ug/L		
INF-001	08/05/13	Mercury		0.025	0.0002		ug/L		
INF-001	09/03/13	Mercury		0.08	0.0004		ug/L		
INF-001	10/11/13	Mercury		0.11	0.0004		ug/L		
INF-001	11/07/13	Mercury		0.11	0.0004		ug/L		
INF-001	02/10/14	Mercury		0.043	0.0002	0.0005	ug/L	EPA 1631E	
INF-001	03/04/14	Mercury		0.033	0.0002	0.0005	ug/L	EPA 1631E	
INF-001	10/27/14	Mercury		0.066	0.0002	0.0005	ug/L	EPA 1631E	
INF-001	11/13/14	Mercury		0.028	0.0002	0.0005	ug/L	EPA 1631E	
INF-001	11/14/14	Mercury		0.032	0.0002	0.0005	ug/L	EPA 1631E	
INF-001	11/15/14	Mercury		0.024	0.0002	0.0005	ug/L	EPA 1631E	
INF-001	11/16/14	Mercury		0.071	0.0002	0.0005	ug/L	EPA 1631E	
INF-001	11/17/14	Mercury		0.041	0.0002	0.0005	ug/L	EPA 1631E	
INF-001	11/18/14	Mercury		0.052	0.0002	0.0005	ug/L	EPA 1631E	
INF-001	11/19/14	Mercury		0.027	0.0002	0.0005	ug/L	EPA 1631E	
INF-001	02/10/14	Mercury_Methyl (Trace LevelL)		0.97	0.02	0.05	ng/L	EPA 1630	
INF-001	03/04/14	Mercury_Methyl (Trace LevelL)		0.53	0.02	0.05	ng/L	EPA 1630	
INF-001	06/26/13	Methoxychlor	<	0.01	0.01		ug/L		
INF-001	10/28/14	Methoxychlor	<	0.01	0.01	0.5	ug/L	EPA 608	
INF-001	06/26/13	Methyl chloride	<	1.2	1.2		ug/L		
INF-001	10/28/14	Methyl chloride	<	1.2	1.2	2.5	ug/L	EPA 624	
INF-001	06/04/13	Methylmercury		0.51	0.02		ng/L		
INF-001	07/09/13	Methylmercury		0.44	0.02		ng/L		
INF-001	08/05/13	Methylmercury		0.31	0.02		ng/L		
INF-001	09/03/13	Methylmercury		0.78	0.02		ng/L		
INF-001	10/11/13	Methylmercury		0.75	0.02		ng/L		
INF-001	11/07/13	Methylmercury		0.57	0.02		ng/L		
INF-001	06/26/13	Molybdenum		5.2	0.05		ug/L		
INF-001	08/13/13	Molybdenum		4.2	0.05		ug/L		

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
INF-001	10/07/13	Molybdenum		3	0.05		ug/L		
INF-001	10/27/14	Molybdenum		3.4	0.07	0.25	ug/L	EPA 200.8	
INF-001	11/13/14	Molybdenum		2.9	0.07	0.25	ug/L	EPA 200.8	
INF-001	11/14/14	Molybdenum		3.9	0.07	0.25	ug/L	EPA 200.8	
INF-001	11/15/14	Molybdenum		3.4	0.07	0.25	ug/L	EPA 200.8	
INF-001	11/16/14	Molybdenum		3.1	0.07	0.25	ug/L	EPA 200.8	
INF-001	11/17/14	Molybdenum		3	0.07	0.25	ug/L	EPA 200.8	
INF-001	11/18/14	Molybdenum		3.1	0.07	0.25	ug/L	EPA 200.8	
INF-001	11/19/14	Molybdenum		3.4	0.07	0.25	ug/L	EPA 200.8	
INF-001	11/20/14	Molybdenum		3.2	0.07	0.25	ug/L	EPA 200.8	
INF-001	11/21/14	Molybdenum		2.9	0.07	0.25	ug/L	EPA 200.8	
INF-001	06/26/13	Naphthalene	<	0.3	0.3		ug/L		
INF-001	10/28/14	Naphthalene	<	0.1	0.1	5	ug/L	EPA 625	
INF-001	06/26/13	Nickel		3.6	0.06		ug/L		
INF-001	08/13/13	Nickel		4	0.06		ug/L		
INF-001	10/07/13	Nickel		3.7	0.06		ug/L		
INF-001	10/27/14	Nickel		3.1	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/13/14	Nickel		3.6	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/14/14	Nickel		3.4	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/15/14	Nickel		4.5	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/16/14	Nickel		3.5	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/17/14	Nickel		3.3	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/18/14	Nickel		3.9	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/19/14	Nickel		5.3	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/20/14	Nickel		4.3	0.06	0.5	ug/L	EPA 200.8	
INF-001	11/21/14	Nickel		3.2	0.06	0.5	ug/L	EPA 200.8	
INF-001	06/26/13	Nitrobenzene	<	9.5	9.5		ug/L		
INF-001	10/28/14	Nitrobenzene	<	4.5	4.5	5	ug/L	EPA 625	
INF-001	06/26/13	PCB 1016	<	0.1	0.1		ug/L		
INF-001	10/28/14	PCB 1016	<	0.1	0.1	0.2	ug/L	EPA 608	
INF-001	06/26/13	PCB 1221	<	0.1	0.1		ug/L		
INF-001	10/28/14	PCB 1221	<	0.1	0.1	0.2	ug/L	EPA 608	
INF-001	06/26/13	PCB 1232	<	0.1	0.1		ug/L		
INF-001	10/28/14	PCB 1232	<	0.1	0.1	0.2	ug/L	EPA 608	
INF-001	06/26/13	PCB 1242	<	0.08	0.08		ug/L		
INF-001	10/28/14	PCB 1242	<	0.08	0.08	0.2	ug/L	EPA 608	
INF-001	06/26/13	PCB 1248	<	0.1	0.1		ug/L		
INF-001	10/28/14	PCB 1248	<	0.1	0.1	0.2	ug/L	EPA 608	
INF-001	06/26/13	PCB 1254	<	0.1	0.1		ug/L		
INF-001	10/28/14	PCB 1254	<	0.1	0.1	0.2	ug/L	EPA 608	
INF-001	06/26/13	PCB 1260	<	0.1	0.1		ug/L		
INF-001	10/28/14	PCB 1260	<	0.1	0.1	0.2	ug/L	EPA 608	
INF-001	06/26/13	Pentachlorophenol	<	8.1	8.1		ug/L		
INF-001	10/28/14	Pentachlorophenol	<	3	3	5	ug/L	EPA 625	
INF-001	06/26/13	Phenanthrene	<	0.3	0.3		ug/L		
INF-001	10/28/14	Phenanthrene	<	0.05	0.05	5	ug/L	EPA 625	

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
INF-001	06/26/13	Phenol	<	6.9	6.9		ug/L		
INF-001	10/28/14	Phenol		6.7	2.5	5	ug/L	EPA 625	
INF-001	06/26/13	Selenium		3.8	0.06		ug/L		
INF-001	07/09/13	Selenium		3.7	0.06		ug/L		
INF-001	08/13/13	Selenium		3.6	0.06		ug/L		
INF-001	09/04/13	Selenium		3.9	0.06		ug/L		
INF-001	10/07/13	Selenium		3.4	0.06		ug/L		
INF-001	10/27/14	Selenium		1.9	0.07	1	ug/L	EPA 200.8	
INF-001	11/13/14	Selenium		3.4	0.07	1	ug/L	EPA 200.8	
INF-001	11/14/14	Selenium		3.5	0.07	1	ug/L	EPA 200.8	
INF-001	11/15/14	Selenium		3.1	0.07	1	ug/L	EPA 200.8	
INF-001	11/16/14	Selenium		3.4	0.07	1	ug/L	EPA 200.8	
INF-001	11/17/14	Selenium		2.5	0.07	1	ug/L	EPA 200.8	
INF-001	11/18/14	Selenium		2.8	0.07	1	ug/L	EPA 200.8	
INF-001	11/19/14	Selenium		2.9	0.07	1	ug/L	EPA 200.8	
INF-001	11/20/14	Selenium		3.1	0.07	1	ug/L	EPA 200.8	
INF-001	11/21/14	Selenium		2.7	0.07	1	ug/L	EPA 200.8	
INF-001	06/26/13	Silver		0.42	0.02		ug/L		
INF-001	08/13/13	Silver		0.21	0.02		ug/L		
INF-001	10/07/13	Silver		0.18	0.02		ug/L		
INF-001	10/27/14	Silver		0.15	0.02	0.1	ug/L	EPA 200.8	
INF-001	11/13/14	Silver		0.19	0.02	0.1	ug/L	EPA 200.8	
INF-001	11/14/14	Silver		0.18	0.02	0.1	ug/L	EPA 200.8	
INF-001	11/15/14	Silver		0.25	0.02	0.1	ug/L	EPA 200.8	
INF-001	11/16/14	Silver		0.16	0.02	0.1	ug/L	EPA 200.8	
INF-001	11/17/14	Silver		0.17	0.02	0.1	ug/L	EPA 200.8	
INF-001	11/18/14	Silver		0.62	0.02	0.1	ug/L	EPA 200.8	
INF-001	11/19/14	Silver		0.28	0.02	0.1	ug/L	EPA 200.8	
INF-001	11/20/14	Silver		0.21	0.02	0.1	ug/L	EPA 200.8	
INF-001	11/21/14	Silver		0.12	0.02	0.1	ug/L	EPA 200.8	
INF-001	06/26/13	Sulfate as SO4		57	1		mg/L		
INF-001	08/13/13	Sulfate as SO4		57	1		mg/L		
INF-001	11/13/14	Sulfide, Total (as S)		2.4	0.3	1	mg/L	SM 4500-SE	
INF-001	11/14/14	Sulfide, Total (as S)		5.3	0.6	2	mg/L	SM 4500-SE	
INF-001	11/15/14	Sulfide, Total (as S)		0.4	0.03	0.1	mg/L	SM 4500-SE	
INF-001	11/16/14	Sulfide, Total (as S)		0.76	0.03	0.1	mg/L	SM 4500-SE	
INF-001	11/17/14	Sulfide, Total (as S)		0.53	0.03	0.1	mg/L	SM 4500-SE	
INF-001	11/18/14	Sulfide, Total (as S)		0.4	0.03	0.1	mg/L	SM 4500-SE	
INF-001	11/19/14	Sulfide, Total (as S)		1.2	0.3	1	mg/L	SM 4500-SE	
INF-001	06/26/13	Surfactants (MBAS)		2.1	0.25		mg/L		
INF-001	08/13/13	Surfactants (MBAS)		4.5	0.01		mg/L		
INF-001	08/13/13	Surfactants (MBAS)		7	0.01		mg/L		
INF-001	06/26/13	Tetrachloroethylene	<	0.95	0.95		ug/L		
INF-001	10/28/14	Tetrachloroethylene	<	0.95	0.95	2.5	ug/L	EPA 624	
INF-001	06/26/13	Thallium	<	0.05	0.05		ug/L		
INF-001	08/13/13	Thallium	<	0.05	0.05		ug/L		

Sample Location	Sample Date	Pollutant	Result	MDL	RL	Units	Analytical Method	Notes
INF-001	10/07/13	Thallium	< 0.05	0.05		ug/L		
INF-001	10/27/14	Thallium	< 0.05	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/13/14	Thallium	< 0.05	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/14/14	Thallium	< 0.05	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/15/14	Thallium	< 0.05	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/16/14	Thallium	< 0.05	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/17/14	Thallium	< 0.05	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/18/14	Thallium	< 0.05	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/19/14	Thallium	< 0.05	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/20/14	Thallium	< 0.05	0.05	0.1	ug/L	EPA 200.8	
INF-001	11/21/14	Thallium	< 0.05	0.05	0.1	ug/L	EPA 200.8	
INF-001	06/26/13	Toluene	< 0.95	0.95		ug/L		
INF-001	10/28/14	Toluene	< 0.95	0.95	2.5	ug/L	EPA 624	
INF-001	06/26/13	Toxaphene	< 0.4	0.4		ug/L		
INF-001	10/28/14	Toxaphene	< 0.6	0.6	1	ug/L	EPA 608	
INF-001	06/26/13	Trichloroethylene	< 1	1		ug/L		
INF-001	10/28/14	Trichloroethylene	< 1	1	2.5	ug/L	EPA 624	
INF-001	06/26/13	Vanadium	8.2	0.1		ug/L		
INF-001	08/13/13	Vanadium	11	0.1		ug/L		
INF-001	10/07/13	Vanadium	7.6	0.1		ug/L		
INF-001	10/27/14	Vanadium	6.6	0.3	2	ug/L	EPA 200.8	
INF-001	11/13/14	Vanadium	9.1	0.3	2	ug/L	EPA 200.8	
INF-001	11/14/14	Vanadium	8.7	0.3	2	ug/L	EPA 200.8	
INF-001	11/15/14	Vanadium	8.1	0.1	2	ug/L	EPA 200.8	
INF-001	11/16/14	Vanadium	8.3	0.3	2	ug/L	EPA 200.8	
INF-001	11/17/14	Vanadium	8.6	0.3	2	ug/L	EPA 200.8	
INF-001	11/18/14	Vanadium	9	0.3	2	ug/L	EPA 200.8	
INF-001	11/19/14	Vanadium	11	0.3	2	ug/L	EPA 200.8	
INF-001	11/20/14	Vanadium	9	0.3	2	ug/L	EPA 200.8	
INF-001	11/21/14	Vanadium	6.8	0.3	2	ug/L	EPA 200.8	
INF-001	06/26/13	Zinc	120	0.7		ug/L		
INF-001	06/26/13	Zinc	130	6		ug/L		
INF-001	08/13/13	Zinc	120	0.7		ug/L		
INF-001	10/07/13	Zinc	110	0.7		ug/L		
INF-001	10/27/14	Zinc	100	0.7	10	ug/L	EPA 200.8	
INF-001	11/13/14	Zinc	120	0.7	10	ug/L	EPA 200.8	
INF-001	11/14/14	Zinc	120	0.7	10	ug/L	EPA 200.8	
INF-001	11/15/14	Zinc	99	0.7	10	ug/L	EPA 200.8	
INF-001	11/16/14	Zinc	110	0.7	10	ug/L	EPA 200.8	
INF-001	11/17/14	Zinc	120	0.7	10	ug/L	EPA 200.8	
INF-001	11/18/14	Zinc	120	0.7	10	ug/L	EPA 200.8	
INF-001	11/19/14	Zinc	150	0.7	10	ug/L	EPA 200.8	
INF-001	11/20/14	Zinc	120	0.7	10	ug/L	EPA 200.8	
INF-001	11/21/14	Zinc	86	0.7	10	ug/L	EPA 200.8	
M-16_#6	11/13/14	Aluminum	260	1.2	10	ug/L	EPA 200.8	
M-16_#6	11/14/14	Aluminum	300	1.2	10	ug/L	EPA 200.8	

Sample Location	Sample Date	Pollutant	Result	MDL	RL	Units	Analytical Method	Notes
M-16_#6	11/15/14	Aluminum	290	1.2	10	ug/L	EPA 200.8	
M-16_#6	11/16/14	Aluminum	270	1.2	10	ug/L	EPA 200.8	
M-16_#6	11/17/14	Aluminum	280	1.2	10	ug/L	EPA 200.8	
M-16_#6	11/18/14	Aluminum	480	1.2	10	ug/L	EPA 200.8	
M-16_#6	11/19/14	Aluminum	280	1.2	10	ug/L	EPA 200.8	
M-16_#6	11/20/14	Aluminum	260	1.2	10	ug/L	EPA 200.8	
M-16_#6	11/21/14	Aluminum	400	1.2	10	ug/L	EPA 200.8	
M-16_#6	11/13/14	Ammonia as N	39	0.04	0.1	mg/L	SM 4500NH3_C	
M-16_#6	11/14/14	Ammonia as N	40	0.04	0.1	mg/L	SM 4500NH3_C	
M-16_#6	11/15/14	Ammonia as N	48	0.04	0.1	mg/L	SM 4500NH3_C	
M-16_#6	11/16/14	Ammonia as N	44	0.04	0.1	mg/L	SM 4500NH3_C	
M-16_#6	11/17/14	Ammonia as N	42	0.04	0.1	mg/L	SM 4500NH3_C	
M-16_#6	11/18/14	Ammonia as N	36	0.04	0.1	mg/L	SM 4500NH3_C	
M-16_#6	11/19/14	Ammonia as N	37	0.04	0.1	mg/L	SM 4500NH3_C	
M-16_#6	11/13/14	Antimony	J 0.22	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/14/14	Antimony	J 0.31	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/15/14	Antimony	J 0.32	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/16/14	Antimony	J 0.3	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/17/14	Antimony	J 0.3	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/18/14	Antimony	J 0.49	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/19/14	Antimony	J 0.26	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/20/14	Antimony	J 0.2	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/21/14	Antimony	J 0.26	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/13/14	Arsenic	4.3	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/14/14	Arsenic	4.5	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/15/14	Arsenic	4.2	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/16/14	Arsenic	4.1	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/17/14	Arsenic	4.3	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/18/14	Arsenic	4.4	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/19/14	Arsenic	4.2	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/20/14	Arsenic	4.2	0.6	0.5	ug/L	EPA 200.8	
M-16_#6	11/21/14	Arsenic	4.4	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/13/14	Barium	110	0.08	0.1	ug/L	EPA 200.8	
M-16_#6	11/14/14	Barium	100	0.08	0.1	ug/L	EPA 200.8	
M-16_#6	11/15/14	Barium	110	0.08	0.1	ug/L	EPA 200.8	
M-16_#6	11/16/14	Barium	110	0.08	0.1	ug/L	EPA 200.8	
M-16_#6	11/17/14	Barium	100	0.08	0.1	ug/L	EPA 200.8	
M-16_#6	11/18/14	Barium	110	0.08	0.1	ug/L	EPA 200.8	
M-16_#6	11/19/14	Barium	110	0.08	0.1	ug/L	EPA 200.8	
M-16_#6	11/20/14	Barium	100	0.08	0.1	ug/L	EPA 200.8	
M-16_#6	11/21/14	Barium	99	0.08	0.1	ug/L	EPA 200.8	
M-16_#6	11/13/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
M-16_#6	11/14/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
M-16_#6	11/15/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
M-16_#6	11/16/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	
M-16_#6	11/17/14	Beryllium	< 0.09	0.09	0.1	ug/L	EPA 200.8	

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
M-16_#6	11/18/14	Beryllium	<	0.09	0.09	0.1	ug/L	EPA 200.8	
M-16_#6	11/19/14	Beryllium	<	0.09	0.09	0.1	ug/L	EPA 200.8	
M-16_#6	11/20/14	Beryllium	<	0.09	0.09	0.1	ug/L	EPA 200.8	
M-16_#6	11/21/14	Beryllium	<	0.09	0.09	0.1	ug/L	EPA 200.8	
M-16_#6	11/13/14	Biochemical Oxygen Demand		287	5	5	mg/L	SMOL 5210B	
M-16_#6	11/14/14	Biochemical Oxygen Demand		251	5	5	mg/L	SMOL 5210B	
M-16_#6	11/15/14	Biochemical Oxygen Demand		212	5	5	mg/L	SMOL 5210B	
M-16_#6	11/16/14	Biochemical Oxygen Demand		169	5	5	mg/L	SMOL 5210B	
M-16_#6	11/17/14	Biochemical Oxygen Demand		256	5	5	mg/L	SMOL 5210B	
M-16_#6	11/18/14	Biochemical Oxygen Demand		251	5	5	mg/L	SMOL 5210B	
M-16_#6	11/19/14	Biochemical Oxygen Demand		233	5	5	mg/L	SMOL 5210B	
M-16_#6	11/13/14	Cadmium		0.14	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/14/14	Cadmium		0.16	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/15/14	Cadmium		0.4	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/16/14	Cadmium		0.16	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/17/14	Cadmium		0.16	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/18/14	Cadmium		0.25	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/19/14	Cadmium		0.16	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/20/14	Cadmium		0.23	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/21/14	Cadmium		0.23	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/13/14	Chromium		15	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/14/14	Chromium		14	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/15/14	Chromium		15	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/16/14	Chromium		14	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/17/14	Chromium		14	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/18/14	Chromium		18	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/19/14	Chromium		16	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/20/14	Chromium		15	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/21/14	Chromium		14	0.05	0.5	ug/L	EPA 200.8	
M-16_#6	11/13/14	Cobalt	J	0.26	0.02	0.5	ug/L	EPA 200.8	
M-16_#6	11/14/14	Cobalt	J	0.31	0.02	0.5	ug/L	EPA 200.8	
M-16_#6	11/15/14	Cobalt	J	0.29	0.02	0.5	ug/L	EPA 200.8	
M-16_#6	11/16/14	Cobalt	J	0.22	0.02	0.5	ug/L	EPA 200.8	
M-16_#6	11/17/14	Cobalt	J	0.21	0.02	0.5	ug/L	EPA 200.8	
M-16_#6	11/18/14	Cobalt	J	0.48	0.02	0.5	ug/L	EPA 200.8	
M-16_#6	11/19/14	Cobalt	J	0.29	0.02	0.5	ug/L	EPA 200.8	
M-16_#6	11/20/14	Cobalt	J	0.25	0.02	0.5	ug/L	EPA 200.8	
M-16_#6	11/21/14	Cobalt	J	0.45	0.02	0.5	ug/L	EPA 200.8	
M-16_#6	11/13/14	Copper		64	0.15	0.5	ug/L	EPA 200.8	
M-16_#6	11/14/14	Copper		62	0.15	0.5	ug/L	EPA 200.8	
M-16_#6	11/15/14	Copper		63	0.15	0.5	ug/L	EPA 200.8	
M-16_#6	11/16/14	Copper		58	0.15	0.5	ug/L	EPA 200.8	
M-16_#6	11/17/14	Copper		66	0.15	0.5	ug/L	EPA 200.8	
M-16_#6	11/18/14	Copper		67	0.15	0.5	ug/L	EPA 200.8	
M-16_#6	11/19/14	Copper		61	0.15	0.5	ug/L	EPA 200.8	
M-16_#6	11/20/14	Copper		58	0.15	0.5	ug/L	EPA 200.8	

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
M-16_#6	11/21/14	Copper		67	0.15	0.5	ug/L	EPA 200.8	
M-16_#6	11/13/14	Cyanide	<	0.9	0.9	3	ug/L	SM 4500CN_C&E	
M-16_#6	11/14/14	Cyanide	<	0.9	0.9	3	ug/L	SM 4500CN_C&E	
M-16_#6	11/15/14	Cyanide	<	0.9	0.9	3	ug/L	SM 4500CN_C&E	
M-16_#6	11/16/14	Cyanide	J	2.2	0.9	3	ug/L	SM 4500CN_C&E	
M-16_#6	11/17/14	Cyanide	<	0.9	0.9	3	ug/L	SM 4500CN_C&E	
M-16_#6	11/18/14	Cyanide	<	0.9	0.9	3	ug/L	SM 4500CN_C&E	
M-16_#6	11/19/14	Cyanide	<	0.9	0.9	3	ug/L	SM 4500CN_C&E	
M-16_#6	11/13/14	Lead		0.91	0.03	0.25	ug/L	EPA 200.8	
M-16_#6	11/14/14	Lead		0.95	0.03	0.25	ug/L	EPA 200.8	
M-16_#6	11/15/14	Lead		0.91	0.03	0.25	ug/L	EPA 200.8	
M-16_#6	11/16/14	Lead		0.78	0.03	0.25	ug/L	EPA 200.8	
M-16_#6	11/17/14	Lead		0.83	0.03	0.25	ug/L	EPA 200.8	
M-16_#6	11/18/14	Lead		1.6	0.03	0.25	ug/L	EPA 200.8	
M-16_#6	11/19/14	Lead		0.95	0.03	0.25	ug/L	EPA 200.8	
M-16_#6	11/20/14	Lead		0.74	0.03	0.25	ug/L	EPA 200.8	
M-16_#6	11/21/14	Lead		0.93	0.03	0.25	ug/L	EPA 200.8	
M-16_#6	11/13/14	Mercury		0.031	0.0002	0.0005	ug/L	EPA 1631E	
M-16_#6	11/14/14	Mercury		0.051	0.0002	0.0005	ug/L	EPA 1631E	
M-16_#6	11/15/14	Mercury		0.018	0.0002	0.0005	ug/L	EPA 1631E	
M-16_#6	11/16/14	Mercury		0.016	0.0002	0.0005	ug/L	EPA 1631E	
M-16_#6	11/17/14	Mercury		0.036	0.0002	0.0005	ug/L	EPA 1631E	
M-16_#6	11/18/14	Mercury		0.014	0.0002	0.0005	ug/L	EPA 1631E	
M-16_#6	11/19/14	Mercury		0.016	0.0002	0.0005	ug/L	EPA 1631E	
M-16_#6	11/13/14	Molybdenum		2.4	0.07	0.25	ug/L	EPA 200.8	
M-16_#6	11/14/14	Molybdenum		3	0.07	0.25	ug/L	EPA 200.8	
M-16_#6	11/15/14	Molybdenum		2.9	0.07	0.25	ug/L	EPA 200.8	
M-16_#6	11/16/14	Molybdenum		2.5	0.07	0.25	ug/L	EPA 200.8	
M-16_#6	11/17/14	Molybdenum		2.6	0.07	0.25	ug/L	EPA 200.8	
M-16_#6	11/18/14	Molybdenum		3	0.07	0.25	ug/L	EPA 200.8	
M-16_#6	11/19/14	Molybdenum		2.6	0.07	0.25	ug/L	EPA 200.8	
M-16_#6	11/20/14	Molybdenum		2.7	0.07	0.25	ug/L	EPA 200.8	
M-16_#6	11/21/14	Molybdenum		3	0.07	0.25	ug/L	EPA 200.8	
M-16_#6	11/13/14	Nickel		2.6	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/14/14	Nickel		3.4	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/15/14	Nickel		3.3	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/16/14	Nickel		2.3	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/17/14	Nickel		2.1	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/18/14	Nickel		4.8	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/19/14	Nickel		2.7	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/20/14	Nickel		2.6	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/21/14	Nickel		3.8	0.06	0.5	ug/L	EPA 200.8	
M-16_#6	11/13/14	Selenium		2.7	0.07	1	ug/L	EPA 200.8	
M-16_#6	11/14/14	Selenium		3.1	0.4	1	ug/L	EPA 200.8	
M-16_#6	11/15/14	Selenium		2.7	0.07	1	ug/L	EPA 200.8	
M-16_#6	11/16/14	Selenium		2.8	0.07	1	ug/L	EPA 200.8	

Sample Location	Sample Date	Pollutant	Result		MDL	RL	Units	Analytical Method	Notes
M-16_#6	11/17/14	Selenium		2.2	0.07	1	ug/L	EPA 200.8	
M-16_#6	11/18/14	Selenium		2.3	0.07	1	ug/L	EPA 200.8	
M-16_#6	11/19/14	Selenium		2.3	0.07	1	ug/L	EPA 200.8	
M-16_#6	11/20/14	Selenium		2.7	0.07	1	ug/L	EPA 200.8	
M-16_#6	11/21/14	Selenium		1.8	0.07	1	ug/L	EPA 200.8	
M-16_#6	11/13/14	Silver		0.13	0.02	0.1	ug/L	EPA 200.8	
M-16_#6	11/14/14	Silver		0.21	0.6	0.1	ug/L	EPA 200.8	
M-16_#6	11/15/14	Silver		0.26	0.02	0.1	ug/L	EPA 200.8	
M-16_#6	11/16/14	Silver		0.13	0.02	0.1	ug/L	EPA 200.8	
M-16_#6	11/17/14	Silver		0.11	0.02	0.1	ug/L	EPA 200.8	
M-16_#6	11/18/14	Silver		0.46	0.02	0.1	ug/L	EPA 200.8	
M-16_#6	11/19/14	Silver		0.36	0.02	0.1	ug/L	EPA 200.8	
M-16_#6	11/20/14	Silver		0.18	0.02	0.1	ug/L	EPA 200.8	
M-16_#6	11/21/14	Silver		0.15	0.02	0.1	ug/L	EPA 200.8	
M-16_#6	11/13/14	Sulfide, Total (as S)		0.45	0.03	0.1	mg/L	SM 4500-SE	
M-16_#6	11/14/14	Sulfide, Total (as S)		0.72	0.03	0.1	mg/L	SM 4500-SE	
M-16_#6	11/15/14	Sulfide, Total (as S)		5.7	0.6	2	mg/L	SM 4500-SE	
M-16_#6	11/16/14	Sulfide, Total (as S)		2.7	0.3	1	mg/L	SM 4500-SE	
M-16_#6	11/17/14	Sulfide, Total (as S)		2.6	0.3	1	mg/L	SM 4500-SE	
M-16_#6	11/18/14	Sulfide, Total (as S)		2.4	0.3	1	mg/L	SM 4500-SE	
M-16_#6	11/19/14	Sulfide, Total (as S)		2.2	0.3	1	mg/L	SM 4500-SE	
M-16_#6	11/13/14	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/14/14	Thallium	<	0.04	0.04	0.1	ug/L	EPA 200.8	
M-16_#6	11/15/14	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/16/14	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/17/14	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/18/14	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/19/14	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/20/14	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/21/14	Thallium	<	0.05	0.05	0.1	ug/L	EPA 200.8	
M-16_#6	11/13/14	Total Suspended Solids		242	4	6	mg/L	SM20_2540D	
M-16_#6	11/14/14	Total Suspended Solids		242	4	6	mg/L	SM20_2540D	
M-16_#6	11/15/14	Total Suspended Solids		260	4	6	mg/L	SM20_2540D	
M-16_#6	11/16/14	Total Suspended Solids		242	4	6	mg/L	SM20_2540D	
M-16_#6	11/17/14	Total Suspended Solids		228	4	6	mg/L	SM20_2540D	
M-16_#6	11/18/14	Total Suspended Solids		236	4	6	mg/L	SM20_2540D	
M-16_#6	11/19/14	Total Suspended Solids		284	4	6	mg/L	SM20_2540D	
M-16_#6	11/13/14	Vanadium		9.4	0.3	2	ug/L	EPA 200.8	
M-16_#6	11/14/14	Vanadium		8.8	0.3	2	ug/L	EPA 200.8	
M-16_#6	11/15/14	Vanadium		8.8	0.3	2	ug/L	EPA 200.8	
M-16_#6	11/16/14	Vanadium		8.7	0.3	2	ug/L	EPA 200.8	
M-16_#6	11/17/14	Vanadium		8.1	0.3	2	ug/L	EPA 200.8	
M-16_#6	11/18/14	Vanadium		10	0.3	2	ug/L	EPA 200.8	
M-16_#6	11/19/14	Vanadium		10	0.3	2	ug/L	EPA 200.8	
M-16_#6	11/20/14	Vanadium		8.5	0.3	2	ug/L	EPA 200.8	
M-16_#6	11/21/14	Vanadium		9.8	0.3	2	ug/L	EPA 200.8	

Sample Location	Sample Date	Pollutant	Result	MDL	RL	Units	Analytical Method	Notes
M-16_#6	11/13/14	Zinc	110	0.7	10	ug/L	EPA 200.8	
M-16_#6	11/14/14	Zinc	110	0.7	1	ug/L	EPA 200.8	
M-16_#6	11/15/14	Zinc	99	0.7	10	ug/L	EPA 200.8	
M-16_#6	11/16/14	Zinc	95	0.7	10	ug/L	EPA 200.8	
M-16_#6	11/17/14	Zinc	91	0.7	10	ug/L	EPA 200.8	
M-16_#6	11/18/14	Zinc	120	0.7	10	ug/L	EPA 200.8	
M-16_#6	11/19/14	Zinc	110	0.7	10	ug/L	EPA 200.8	
M-16_#6	11/20/14	Zinc	95	0.7	10	ug/L	EPA 200.8	
M-16_#6	11/21/14	Zinc	110	0.7	10	ug/L	EPA 200.8	
Primary	06/26/13	1,2-Dichlorobenzene	< 0.27	0.27		ug/L		
Primary	06/26/13	1,2-Diphenylhydrazine	< 4.5	4.5		ug/L		
Primary	06/26/13	1,3-Dichlorobenzene	< 0.18	0.18		ug/L		
Primary	06/26/13	1,4-Dichlorobenzene	< 0.18	0.18		ug/L		
Primary	06/26/13	2,4,6-Trichlorophenol	< 4.8	4.8		ug/L		
Primary	06/26/13	2,4-Dichlorophenol	< 5	5		ug/L		
Primary	06/26/13	2,4-Dimethylphenol	< 4.4	4.4		ug/L		
Primary	06/26/13	2,4-Dinitrophenol	< 4.2	4.2		ug/L		
Primary	06/26/13	2,4-Dinitrotoluene	< 4.8	4.8		ug/L		
Primary	06/26/13	2-Chlorophenol	< 4.9	4.9		ug/L		
Primary	06/26/13	Acrylonitrile	< 1	1		ug/L		
Primary	06/26/13	Ammonia as N	33	0.04		mg/L		
Primary	09/08/14	Ammonia as N	38	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	09/09/14	Ammonia as N	36	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	09/10/14	Ammonia as N	38	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	09/11/14	Ammonia as N	37	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	09/12/14	Ammonia as N	37	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	09/13/14	Ammonia as N	37	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	09/14/14	Ammonia as N	37	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	10/13/14	Ammonia as N	40	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	10/14/14	Ammonia as N	39	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	10/15/14	Ammonia as N	39	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	10/16/14	Ammonia as N	39	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	10/17/14	Ammonia as N	39	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	10/18/14	Ammonia as N	39	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	10/19/14	Ammonia as N	39	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	11/13/14	Ammonia as N	36	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	11/14/14	Ammonia as N	36	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	11/15/14	Ammonia as N	40	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	11/16/14	Ammonia as N	42	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	11/17/14	Ammonia as N	37	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	11/18/14	Ammonia as N	37	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	11/19/14	Ammonia as N	37	0.04	0.1	mg/L	SM 4500NH3_C	
Primary	06/26/13	Anthracene	< 0.15	0.15		ug/L		
Primary	06/26/13	Arsenic	4.6	0.06		ug/L		
Primary	10/07/13	Arsenic	4.4	0.06		ug/L		
Primary	11/15/14	Arsenic	4.3	0.6	0.5	ug/L	EPA 200.8	

Sample Location	Sample Date	Pollutant	Result	MDL	RL	Units	Analytical Method	Notes
Primary	11/16/14	Arsenic	4.4	0.06	0.5	ug/L	EPA 200.8	
Primary	11/17/14	Arsenic	4.5	0.06	0.5	ug/L	EPA 200.8	
Primary	11/18/14	Arsenic	4.3	0.06	0.5	ug/L	EPA 200.8	
Primary	11/19/14	Arsenic	4.2	0.06	0.5	ug/L	EPA 200.8	
Primary	11/20/14	Arsenic	4.3	0.06	0.5	ug/L	EPA 200.8	
Primary	11/21/14	Arsenic	4.3	0.06	0.5	ug/L	EPA 200.8	
Primary	06/26/13	Benzene	< 0.18	0.18		ug/L		
Primary	06/26/13	Cadmium	J 0.07	0.05		ug/L		
Primary	10/07/13	Cadmium	0.12	0.05		ug/L		
Primary	11/15/14	Cadmium	0.23	0.05	0.1	ug/L	EPA 200.8	
Primary	11/16/14	Cadmium	0.23	0.05	0.1	ug/L	EPA 200.8	
Primary	11/17/14	Cadmium	0.17	0.05	0.1	ug/L	EPA 200.8	
Primary	11/18/14	Cadmium	J 0.09	0.05	0.1	ug/L	EPA 200.8	
Primary	11/19/14	Cadmium	J 0.09	0.05	0.1	ug/L	EPA 200.8	
Primary	11/20/14	Cadmium	0.12	0.05	0.1	ug/L	EPA 200.8	
Primary	11/21/14	Cadmium	0.12	0.05	0.1	ug/L	EPA 200.8	
Primary	06/26/13	Carbon tetrachloride	< 0.16	0.16		ug/L		
Primary	06/26/13	Chlorobenzene	< 0.18	0.18		ug/L		
Primary	06/26/13	Chloroform	1	0.19		ug/L		
Primary	06/26/13	Chromium	6.6	0.05		ug/L		
Primary	10/07/13	Chromium	9.7	0.05		ug/L		
Primary	11/15/14	Chromium	10	0.05	0.5	ug/L	EPA 200.8	
Primary	11/16/14	Chromium	9.7	0.05	0.5	ug/L	EPA 200.8	
Primary	11/17/14	Chromium	9.6	0.05	0.5	ug/L	EPA 200.8	
Primary	11/18/14	Chromium	9.7	0.05	0.5	ug/L	EPA 200.8	
Primary	11/19/14	Chromium	9.7	0.05	0.5	ug/L	EPA 200.8	
Primary	11/20/14	Chromium	9.8	0.05	0.5	ug/L	EPA 200.8	
Primary	11/21/14	Chromium	7.9	0.05	0.5	ug/L	EPA 200.8	
Primary	06/26/13	Copper	39	0.07		ug/L		
Primary	06/26/13	Copper	42	1		ug/L		
Primary	10/07/13	Copper	57	0.07		ug/L		
Primary	11/15/14	Copper	43	0.15	0.5	ug/L	EPA 200.8	
Primary	11/15/14	Copper	44	0.15	0.5	ug/L	EPA 200.8	
Primary	11/16/14	Copper	47	0.15	0.05	ug/L	EPA 200.8	
Primary	11/17/14	Copper	43	0.15	0.5	ug/L	EPA 200.8	
Primary	11/18/14	Copper	40	0.15	0.5	ug/L	EPA 200.8	
Primary	11/19/14	Copper	41	0.15	0.5	ug/L	EPA 200.8	
Primary	11/20/14	Copper	40	0.15	0.5	ug/L	EPA 200.8	
Primary	11/21/14	Copper	42	0.15	0.5	ug/L	EPA 200.8	
Primary	06/26/13	Cyanide	J 1.4	0.9		ug/L		
Primary	11/13/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
Primary	11/14/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
Primary	11/15/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
Primary	11/16/14	Cyanide	J 0.96	0.9	3	ug/L	SM 4500CN_C&E	
Primary	11/17/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	
Primary	11/18/14	Cyanide	< 0.9	0.9	3	ug/L	SM 4500CN_C&E	

Sample Location	Sample Date	Pollutant	Result		MDL	RL	Units	Analytical Method	Notes
Primary	11/19/14	Cyanide	<	0.9	0.9	3	ug/L	SM 4500CN_C&E	
Primary	06/26/13	Ethylbenzene	<	0.26	0.26		ug/L		
Primary	06/26/13	Hexachlorobenzene	<	4.6	4.6		ug/L		
Primary	06/26/13	Lead		0.59	0.03		ug/L		
Primary	10/07/13	Lead		0.88	0.03		ug/L		
Primary	11/15/14	Lead		0.59	0.03	0.25	ug/L	EPA 200.8	Detected in equipment blank at J0.07 ug/L.
Primary	11/16/14	Lead		0.55	0.03	0.25	ug/L	EPA 200.8	Detected in equipment blank at J0.07 ug/L.
Primary	11/17/14	Lead		0.54	0.03	0.25	ug/L	EPA 200.8	Detected in equipment blank at J0.07 ug/L.
Primary	11/18/14	Lead		0.59	0.03	0.25	ug/L	EPA 200.8	Detected in equipment blank at J0.07 ug/L.
Primary	11/19/14	Lead		0.5	0.03	0.25	ug/L	EPA 200.8	Detected in equipment blank at J0.07 ug/L.
Primary	11/20/14	Lead		0.45	0.03	0.25	ug/L	EPA 200.8	Detected in equipment blank at J0.07 ug/L.
Primary	11/21/14	Lead		0.57	0.03	0.25	ug/L	EPA 200.8	Detected in equipment blank at J0.07 ug/L.
Primary	06/26/13	Mercury		0.02	0.0002		ug/L		
Primary	11/13/14	Mercury		0.015	0.0002	0.0005	ug/L	EPA 1631E	
Primary	11/14/14	Mercury		0.02	0.0002	0.0005	ug/L	EPA 1631E	
Primary	11/15/14	Mercury		0.031	0.0002	0.0005	ug/L	EPA 1631E	
Primary	11/16/14	Mercury		0.017	0.0002	0.0005	ug/L	EPA 1631E	
Primary	11/17/14	Mercury		0.017	0.0002	0.0005	ug/L	EPA 1631E	
Primary	11/18/14	Mercury		0.022	0.0002	0.0005	ug/L	EPA 1631E	
Primary	11/19/14	Mercury		0.02	0.0002	0.0005	ug/L	EPA 1631E	
Primary	06/26/13	Methyl chloride	<	0.23	0.23		ug/L		
Primary	06/26/13	Naphthalene	<	0.15	0.15		ug/L		
Primary	06/26/13	Nickel		3.5	0.06		ug/L		
Primary	10/07/13	Nickel		3.6	0.06		ug/L		
Primary	11/15/14	Nickel		4.3	0.06	0.5	ug/L	EPA 200.8	Detected in equipment blank at 0.51 ug/L
Primary	11/16/14	Nickel		3.7	0.06	0.5	ug/L	EPA 200.8	Detected in equipment blank at 0.51 ug/L
Primary	11/17/14	Nickel		3.3	0.06	0.5	ug/L	EPA 200.8	Detected in equipment blank at 0.51 ug/L
Primary	11/18/14	Nickel		3.3	0.06	0.5	ug/L	EPA 200.8	Detected in equipment blank at 0.51 ug/L
Primary	11/19/14	Nickel		3	0.06	0.5	ug/L	EPA 200.8	Detected in equipment blank at 0.51 ug/L
Primary	11/20/14	Nickel		3.3	0.06	0.5	ug/L	EPA 200.8	Detected in equipment blank at 0.51 ug/L
Primary	11/21/14	Nickel		3.7	0.06	0.5	ug/L	EPA 200.8	Detected in equipment blank at 0.51 ug/L
Primary	06/26/13	Nitrobenzene	<	4.8	4.8		ug/L		
Primary	06/26/13	Pentachlorophenol	<	4	4		ug/L		
Primary	06/26/13	Phenanthrene	<	0.15	0.15		ug/L		
Primary	06/26/13	Phenol	<	3.4	3.4		ug/L		
Primary	06/26/13	Silver		0.55	0.02		ug/L		
Primary	10/07/13	Silver		0.1	0.02		ug/L		
Primary	11/15/14	Silver		0.12	0.02	0.1	ug/L	EPA 200.8	
Primary	11/16/14	Silver	J	0.09	0.02	0.1	ug/L	EPA 200.8	
Primary	11/17/14	Silver		0.1	0.02	0.1	ug/L	EPA 200.8	
Primary	11/18/14	Silver		0.18	0.02	0.1	ug/L	EPA 200.8	
Primary	11/19/14	Silver		0.21	0.02	0.1	ug/L	EPA 200.8	
Primary	11/20/14	Silver	J	0.1	0.02	0.1	ug/L	EPA 200.8	
Primary	11/21/14	Silver		0.1	0.02	0.1	ug/L	EPA 200.8	
Primary	06/26/13	Sulfate as SO4		54	1		mg/L		
Primary	11/13/14	Sulfide, Total (as S)		1.8	0.3	1	mg/L	SM 4500-SE	

Sample Location	Sample Date	Pollutant		Result	MDL	RL	Units	Analytical Method	Notes
Primary	11/14/14	Sulfide, Total (as S)		2.5	0.3	1	mg/L	SM 4500-SE	
Primary	11/15/14	Sulfide, Total (as S)		1.4	0.06	0.2	mg/L	SM 4500-SE	
Primary	11/16/14	Sulfide, Total (as S)		2.2	0.3	1	mg/L	SM 4500-SE	
Primary	11/17/14	Sulfide, Total (as S)		2	3	10	mg/L	SM 4500-SE	
Primary	11/18/14	Sulfide, Total (as S)		2.1	0.3	1	mg/L	SM 4500-SE	
Primary	11/19/14	Sulfide, Total (as S)		1.9	0.3	1	mg/L	SM 4500-SE	
Primary	06/26/13	Surfactants (MBAS)		3.8	0.25		mg/L		
Primary	06/26/13	Tetrachloroethylene	<	0.19	0.19		ug/L		
Primary	06/26/13	Toluene	<	0.19	0.19		ug/L		
Primary	06/26/13	Trichloroethylene	<	0.2	0.2		ug/L		
Primary	06/26/13	Zinc		64	0.7		ug/L		
Primary	06/26/13	Zinc		72	6		ug/L		
Primary	10/07/13	Zinc		78	0.7		ug/L		
Primary	11/15/14	Zinc		59	0.7	10	ug/L	EPA 200.8	
Primary	11/16/14	Zinc		62	0.7	10	ug/L	EPA 200.8	
Primary	11/17/14	Zinc		63	0.7	10	ug/L	EPA 200.8	
Primary	11/18/14	Zinc		61	0.7	10	ug/L	EPA 200.8	
Primary	11/19/14	Zinc		56	0.7	10	ug/L	EPA 200.8	
Primary	11/20/14	Zinc		54	0.7	10	ug/L	EPA 200.8	
Primary	11/21/14	Zinc		61	0.7	10	ug/L	EPA 200.8	

APPENDIX D

AHL Derivation Worksheets

	A	B	C	D	E
1	**Ammonia as N**				
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	mg/L	42	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	1,500	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	mg/L	61	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	2,300	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	mg/L	38	2014 Local Limits Monitoring
13		Average Final Effluent (EFF-001) Concentration	mg/L	6.2	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	mg/L	19	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	mg/L	1.3	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	mg/L	3.7	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	mg/L	41	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	1,446	8.34*(D4-D7)*D17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	87.3%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	96.6%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Primary Treatment Removal	%	9.5%	2014 Local Limits Monitoring
23	**Existing Conditions (Biosolids)**				
24		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
25		Average Digester Concentration	mg/L	530	2014 Local Limits Monitoring
26	**Treatment/Discharge Limits**				
27		EFF-001 Daily Maximum Discharge Limit	mg/L	3.3	2013 NPDES Permit
28		EFF-001 Average Weekly Discharge Limit	mg/L	-	-
29		EFF-001 Average Monthly Discharge Limit	mg/L	1.3	2013 NPDES Permit
30		EFF-002 Daily Maximum Discharge Limit	mg/L	4.7	2013 NPDES Permit
31		EFF-002 Average Weekly Discharge Limit	mg/L	-	-
32		EFF-002 Average Monthly Discharge Limit	mg/L	1.5	2013 NPDES Permit
33		Activated Sludge Inhibition Limit	mg/L	480	USEPA Local Limits Guidance Manual
34		Anaerobic Digestion Inhibition Limit	mg/L	1,500	USEPA Local Limits Guidance Manual
35		Plant Design Capacity	mg/L	-	-
36	**Headworks Loading Limits**				
37		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	621	8.34*D5*D27/(1-D20)
38		EFF-001 Average Weekly Discharge Loading Limit	lbs/day	-	-
39		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	245	8.34*D5*D29/(1-D20)
40		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	4,819	8.34*D6*D30/(1-D21)
41		EFF-002 Average Weekly Discharge Loading Limit	lbs/day	-	-
42		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	1,538	8.34*D6*D32/(1-D21)
43		Activated Sludge Inhibition Loading Limit	lbs/day	18,937	8.34*D4*D33/(1-D22)
44		Anaerobic Digestion Inhibition Loading Limit	lbs/day	4,245	D9*D34/D25
45		Plant Design Capacity Loading Limit	lbs/day	-	-
46	**Maximum Allowable Headworks Loading (MAHL)**				
47		**Headworks Limit**	lbs/day	**245**	MIN(D37:D45)
48		Basis of MAHL		EFF-001 Average Monthly Discharge Loading Limit	
49	**Maximum Allowable Industrial Loading (MAIL)**				
50		Safety Factor	10%	24	C50*D47
51		**Industrial Allocation**	lbs/day	**-1,226**	D47-D18-D50
52		Uniform Local Limit	mg/L	(2,940)	D51/D7/8.34

	F	G	H	I	J
1	**Biochemical Oxygen Demand (BOD)**				
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	mg/L	240	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	8,700	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	mg/L	440	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	16,000	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	mg/L	-	-
13		Average Final Effluent (EFF-001) Concentration	mg/L	19	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	mg/L	42	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	mg/L	5.4	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	mg/L	16	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	mg/L	240	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	8,467	8.34*(I4-I7)*I17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	94.5%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	97.9%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Primary Treatment Removal	%	-	-
23	**Existing Conditions (Biosolids)**				
24		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
25		Average Digester Concentration	mg/L	-	-
26	**Treatment/Discharge Limits**				
27		EFF-001 Daily Maximum Discharge Limit	mg/L	90	2013 NPDES Permit
28		EFF-001 Average Weekly Discharge Limit	mg/L	45	2013 NPDES Permit
29		EFF-001 Average Monthly Discharge Limit	mg/L	30	2013 NPDES Permit
30		EFF-002 Daily Maximum Discharge Limit	mg/L	90	2013 NPDES Permit
31		EFF-002 Average Weekly Discharge Limit	mg/L	45	2013 NPDES Permit
32		EFF-002 Average Monthly Discharge Limit	mg/L	30	2013 NPDES Permit
33		Activated Sludge Inhibition Limit	mg/L	-	-
34		Anaerobic Digestion Inhibition Limit	mg/L	-	-
35		Plant Design Capacity	mg/L	275	Estimated Design Capacity
36	**Headworks Loading Limits**				
37		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	38,909	8.34*I5*I27/(1-I20)
38		EFF-001 Average Weekly Discharge Loading Limit	lbs/day	19,455	8.34*I5*I28/(1-I20)
39		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	12,970	8.34*I5*I29/(1-I20)
40		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	151,646	8.34*I6*I30/(1-I21)
41		EFF-002 Average Weekly Discharge Loading Limit	lbs/day	75,823	8.34*I6*I31/(1-I21)
42		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	50,549	8.34*I6*I32/(1-I21)
43		Activated Sludge Inhibition Loading Limit	lbs/day	-	-
44		Anaerobic Digestion Inhibition Loading Limit	lbs/day	-	-
45		Plant Design Capacity Loading Limit	lbs/day	9,816	8.34*I4*I35
46	**Maximum Allowable Headworks Loading (MAHL)**				
47		**Headworks Limit**	lbs/day	**9,816**	MIN(I37:I45)
48		Basis of MAHL		Plant Design Capacity Loading Limit	
49	**Maximum Allowable Industrial Loading (MAIL)**				
50		Safety Factor	10%	982	H50*I47
51		**Industrial Allocation**	lbs/day	**368**	I47-I18-I50
52		Uniform Local Limit	mg/L	882	I51/I7/8.34

	K	L	M	N	O
1	**Total Suspended Solids (TSS)**				
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	mg/L	280	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	10,000	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	mg/L	1400	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	44,000	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	mg/L	-	-
13		Average Final Effluent (EFF-001) Concentration	mg/L	25	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	mg/L	89	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	mg/L	16	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	mg/L	104	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	mg/L	250	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	8,820	8.34*(N4-N7)*N17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	93.3%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	95.0%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Primary Treatment Removal	%	-	-
23	**Existing Conditions (Biosolids)**				
24		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
25		Average Digester Concentration	mg/L	-	-
26	**Treatment/Discharge Limits**				
27		EFF-001 Daily Maximum Discharge Limit	mg/L	150	2013 NPDES Permit
28		EFF-001 Average Weekly Discharge Limit	mg/L	75	2013 NPDES Permit
29		EFF-001 Average Monthly Discharge Limit	mg/L	50	2013 NPDES Permit
30		EFF-002 Daily Maximum Discharge Limit	mg/L	150	2013 NPDES Permit
31		EFF-002 Average Weekly Discharge Limit	mg/L	75	2013 NPDES Permit
32		EFF-002 Average Monthly Discharge Limit	mg/L	50	2013 NPDES Permit
33		Activated Sludge Inhibition Limit	mg/L	-	-
34		Anaerobic Digestion Inhibition Limit	mg/L	-	-
35		Plant Design Capacity	mg/L	275	Estimated Design Capacity
36	**Headworks Loading Limits**				
37		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	53,401	8.34*N5*N27/(1-N20)
38		EFF-001 Average Weekly Discharge Loading Limit	lbs/day	26,700	8.34*N5*N28/(1-N20)
39		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	17,800	8.34*N5*N29/(1-N20)
40		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	104,584	8.34*N6*N30/(1-N21)
41		EFF-002 Average Weekly Discharge Loading Limit	lbs/day	52,292	8.34*N6*N31/(1-N21)
42		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	34,861	8.34*N6*N32/(1-N21)
43		Activated Sludge Inhibition Loading Limit	lbs/day	-	-
44		Anaerobic Digestion Inhibition Loading Limit	lbs/day	-	-
45		Plant Design Capacity Loading Limit	lbs/day	9,816	8.34*N4*N35
46	**Maximum Allowable Headworks Loading (MAHL)**				
47		**Headworks Limit**	lbs/day	**9,816**	MIN(N37:N45)
48		Basis of MAHL		Plant Design Capacity Loading Limit	
49	**Maximum Allowable Industrial Loading (MAIL)**				
50		Safety Factor	10%	982	M50*N47
51		**Industrial Allocation**	lbs/day	**15**	N47-N18-N50
52		Uniform Local Limit	mg/L	36	N51/N7/8.34

	A	B	C	D	E
1	**Aluminum**				
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	ug/L	360	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	13	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	ug/L	600	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	20	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	ug/L	-	-
13		Average Final Effluent (EFF-001) Concentration	ug/L	530	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	ug/L	1,800	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	ug/L	1,100	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	ug/L	1,400	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	ug/L	310	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	11	0.00834*(D4-D7)*D17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	0.0%	Zero Removal
21		In-Plant Total Removal (EFF-002)	%	-154%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Average Total Removal	%	-23.1%	Jun 2013-May 2015 Monitoring Data
23		In-Plant Primary Treatment Removal	%	-	-
24	**Existing Conditions (Biosolids)**				
25		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
26		Biosolids Volume to Landfill, Dry	lb/day	17,863	2014 Average Daily Volume (dry weight)
27		Percent Solids of Biosolids to Landfill	%	56.9%	2014 Biosolids Monitoring
28		Specific Gravity at Disposal Point	kg/L	1.0	Estimated
29		Average Digester Concentration	ug/L	-	-
30		Average Biosolids Concentration, Dry	mg/kg	-	-
31	**Treatment/Discharge/Disposal Limits**				
32		EFF-001 Daily Maximum Discharge Limit	ug/L	750	2013 NPDES Permit
33		EFF-001 Average Monthly Discharge Limit	ug/L	392	2013 NPDES Permit
34		EFF-001 Monthly Total Load	lbs/day	-	-
35		EFF-002 Daily Maximum Discharge Limit	ug/L	750	2013 NPDES Permit
36		EFF-002 Average Monthly Discharge Limit	ug/L	400	2013 NPDES Permit
37		EFF-002 Annual Total Load	lbs/day	-	-
38		Activated Sludge Inhibition Limit	ug/L	-	-
39		Anaerobic Digestion Inhibition Limit	ug/L	-	-
40		Biosolids CCR Title 22 Disposal Limit, Wet	mg/kg	-	-
41	**Headworks Loading Limits**				
42		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	18	0.00834*D5*D32/(1-D20)
43		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	9.4	0.00834*D5*D33/(1-D20)
44		EFF-001 Monthly Total Discharge Loading Limit	lbs/day	-	-
45		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	10	0.00834*D6*D35/(1-D21)
46		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	5.5	0.00834*D6*D36/(1-D21)
47		EFF-002 Monthly Total Discharge Loading Limit	lbs/day	-	-
48		Activated Sludge Inhibition Loading Limit	lbs/day	-	-
49		Anaerobic Digestion Inhibition Loading Limit	lbs/day	-	-
50		Biosolids CCR Title 22 Loading Limit	lbs/day	-	-
51	**Maximum Allowable Headworks Loading (MAHL)**				
52		**Limiting MAHL**	lbs/day	**5.5**	MIN(D42:D50)
53		Basis of MAHL		EFF-002 Average Monthly Discharge Loading Limit	
54	**Maximum Allowable Industrial Loading (MAIL)**				
55		Safety Factor	10%	0.55	C55*D52
56		**Industrial Allocation**	lbs/day	**(6.0)**	D52-D18-D55
57		Uniform Local Limit	ug/L	(14,370)	D56/D7/0.00834

	F	G	H	I	J
1	**Arsenic**				
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	ug/L	5.0	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	0.18	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	ug/L	5.7	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	0.22	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	ug/L	4.4	2014 Local Limits Monitoring
13		Average Final Effluent (EFF-001) Concentration	ug/L	4.7	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	ug/L	9.5	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	ug/L	9.2	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	ug/L	11	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	ug/L	4.3	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	0.15	0.00834*(I4-I7)*I17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	38.9%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	-88.9%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Average Total Removal	%	22.2%	Jun 2013-May 2015 Monitoring Data
23		In-Plant Primary Treatment Removal	%	12.0%	2014 Local Limits Monitoring
24	**Existing Conditions (Biosolids)**				
25		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
26		Biosolids Volume to Landfill, Dry	lb/day	17,863	2014 Average Daily Volume (dry weight)
27		Percent Solids of Biosolids to Landfill	%	56.9%	2014 Biosolids Monitoring
28		Specific Gravity at Disposal Point	kg/L	1.0	Estimated
29		Average Digester Concentration	ug/L	210	2014 Local Limits Monitoring
30		Average Biosolids Concentration, Dry	mg/kg	7.1	-
31	**Treatment/Discharge/Disposal Limits**				
32		EFF-001 Daily Maximum Discharge Limit	ug/L	-	-
33		EFF-001 Average Monthly Discharge Limit	ug/L	-	-
34		EFF-001 Monthly Total Load	lbs/day	-	-
35		EFF-002 Daily Maximum Discharge Limit	ug/L	-	-
36		EFF-002 Average Monthly Discharge Limit	ug/L	-	-
37		EFF-002 Annual Total Load	lbs/day	-	-
38		Activated Sludge Inhibition Limit	ug/L	100	USEPA Local Limits Guidance Manual
39		Anaerobic Digestion Inhibition Limit	ug/L	1,600	USEPA Local Limits Guidance Manual
40		Biosolids CCR Title 22 Disposal Limit, Wet	mg/kg	500	CCR Title 22
41	**Headworks Loading Limits**				
42		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	-	-
43		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	-	-
44		EFF-001 Monthly Total Discharge Loading Limit	lbs/day	-	-
45		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	-	-
46		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	-	-
47		EFF-002 Monthly Total Discharge Loading Limit	lbs/day	-	-
48		Activated Sludge Inhibition Loading Limit	lbs/day	4.1	0.00834*I4*I38/(1-I23)
49		Anaerobic Digestion Inhibition Loading Limit	lbs/day	1.0	0.00834*I25*I39/I22
50		Biosolids CCR Title 22 Loading Limit	lbs/day	71	0.000001*I26*I40/I27/I22
51	**Maximum Allowable Headworks Loading (MAHL)**				
52		**Limiting MAHL**	lbs/day	**1.0**	MIN(I42:I50)
53		Basis of MAHL		Anaerobic Digestion Inhibition Loading Limit	
54	**Maximum Allowable Industrial Loading (MAIL)**				
55		Safety Factor	10%	0.099	H55*I52
56		**Industrial Allocation**	lbs/day	**0.74**	I52-I18-I55
57		Uniform Local Limit	ug/L	1,775	I56/I7/0.00834

	K	L	M	N	O
1	Cadmium				
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	ug/L	0.19	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	0.0068	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	ug/L	0.41	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	0.014	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	ug/L	0.14	2014 Local Limits Monitoring
13		Average Final Effluent (EFF-001) Concentration	ug/L	0.052	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	ug/L	0.19	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	ug/L	0.10	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	ug/L	0.23	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	ug/L	0.21	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	0.0074	0.00834*(N4-N7)*N17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	-61.8%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	45.6%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Average Total Removal	%	79.4%	Jun 2013-May 2015 Monitoring Data
23		In-Plant Primary Treatment Removal	%	26.3%	2014 Local Limits Monitoring
24	**Existing Conditions (Biosolids)**				
25		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
26		Biosolids Volume to Landfill, Dry	lb/day	17,863	2014 Average Daily Volume (dry weight)
27		Percent Solids of Biosolids to Landfill	%	56.9%	2014 Biosolids Monitoring
28		Specific Gravity at Disposal Point	kg/L	1.0	Estimated
29		Average Digester Concentration	ug/L	19	2014 Local Limits Monitoring
30		Average Biosolids Concentration, Dry	mg/kg	0.51	-
31	**Treatment/Discharge/Disposal Limits**				
32		EFF-001 Daily Maximum Discharge Limit	ug/L	8.3	2013 NPDES Permit
33		EFF-001 Average Monthly Discharge Limit	ug/L	4.3	2013 NPDES Permit
34		EFF-001 Monthly Total Load	lbs/day	-	-
35		EFF-002 Daily Maximum Discharge Limit	ug/L	-	-
36		EFF-002 Average Monthly Discharge Limit	ug/L	-	-
37		EFF-002 Annual Total Load	lbs/day	-	-
38		Activated Sludge Inhibition Limit	ug/L	1,000	USEPA Local Limits Guidance Manual
39		Anaerobic Digestion Inhibition Limit	ug/L	20,000	USEPA Local Limits Guidance Manual
40		Biosolids CCR Title 22 Disposal Limit, Wet	mg/kg	100	CCR Title 22
41	**Headworks Loading Limits**				
42		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	0.12	0.00834*N5*N32/(1-N20)
43		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	0.063	0.00834*N5*N33/(1-N20)
44		EFF-001 Monthly Total Discharge Loading Limit	lbs/day	-	-
45		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	-	-
46		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	-	-
47		EFF-002 Monthly Total Discharge Loading Limit	lbs/day	-	-
48		Activated Sludge Inhibition Loading Limit	lbs/day	48	0.00834*N4*N38/(1-N23)
49		Anaerobic Digestion Inhibition Loading Limit	lbs/day	3.5	0.00834*N25*N39/N22
50		Biosolids CCR Title 22 Loading Limit	lbs/day	4.0	0.000001*N26*N40/N27/N22
51	**Maximum Allowable Headworks Loading (MAHL)**				
52		**Limiting MAHL**	lbs/day	**0.063**	MIN(N42:N50)
53		Basis of MAHL		EFF-001 Average Monthly Discharge Loading Limit	
54	**Maximum Allowable Industrial Loading (MAIL)**				
55		Safety Factor	10%	0.0063	M55*N52
56		**Industrial Allocation**	lbs/day	**0.050**	N52-N18-N55
57		Uniform Local Limit	ug/L	119	N56/N7/0.00834

	P	Q	R	S	T
1		Chromium			
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	ug/L	14	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	0.48	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	ug/L	20	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	0.67	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	ug/L	9.2	2014 Local Limits Monitoring
13		Average Final Effluent (EFF-001) Concentration	ug/L	3.9	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	ug/L	4.9	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	ug/L	5.0	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	ug/L	5.1	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	ug/L	15	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	0.53	0.00834*(S4-S7)*S17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	77.1%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	60.4%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Average Total Removal	%	77.1%	Jun 2013-May 2015 Monitoring Data
23		In-Plant Primary Treatment Removal	%	34.3%	2014 Local Limits Monitoring
24	**Existing Conditions (Biosolids)**				
25		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
26		Biosolids Volume to Landfill, Dry	lb/day	17,863	2014 Average Daily Volume (dry weight)
27		Percent Solids of Biosolids to Landfill	%	56.9%	2014 Biosolids Monitoring
28		Specific Gravity at Disposal Point	kg/L	1.0	Estimated
29		Average Digester Concentration	ug/L	1400	2014 Local Limits Monitoring
30		Average Biosolids Concentration, Dry	mg/kg	67	-
31	**Treatment/Discharge/Disposal Limits**				
32		EFF-001 Daily Maximum Discharge Limit	ug/L	-	-
33		EFF-001 Average Monthly Discharge Limit	ug/L	-	-
34		EFF-001 Monthly Total Load	lbs/day	-	-
35		EFF-002 Daily Maximum Discharge Limit	ug/L	-	-
36		EFF-002 Average Monthly Discharge Limit	ug/L	-	-
37		EFF-002 Annual Total Load	lbs/day	-	-
38		Activated Sludge Inhibition Limit	ug/L	1,000	USEPA Local Limits Guidance Manual
39		Anaerobic Digestion Inhibition Limit	ug/L	110,000	USEPA Local Limits Guidance Manual
40		Biosolids CCR Title 22 Disposal Limit, Wet	mg/kg	500	CCR Title 22
41	**Headworks Loading Limits**				
42		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	-	-
43		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	-	-
44		EFF-001 Monthly Total Discharge Loading Limit	lbs/day	-	-
45		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	-	-
46		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	-	-
47		EFF-002 Monthly Total Discharge Loading Limit	lbs/day	-	-
48		Activated Sludge Inhibition Loading Limit	lbs/day	54	0.00834*S4*S38/(1-S23)
49		Anaerobic Digestion Inhibition Loading Limit	lbs/day	20	0.00834*S25*S39/S22
50		Biosolids CCR Title 22 Loading Limit	lbs/day	20	0.000001*S26*S40/S27/S22
51	**Maximum Allowable Headworks Loading (MAHL)**				
52		**Limiting MAHL**	lbs/day	**20**	MIN(S42:S50)
53		Basis of MAHL		Anaerobic Digestion Inhibition Loading Limit	
54	**Maximum Allowable Industrial Loading (MAIL)**				
55		Safety Factor	10%	2.0	R55*S52
56		**Industrial Allocation**	lbs/day	**17**	S52-S18-S55
57		Uniform Local Limit	ug/L	41,114	S56/S7/0.00834

	U	V	W	X	Y
1	**Copper**				
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	ug/L	72	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	2.6	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	ug/L	98	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	4.0	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	ug/L	43	2014 Local Limits Monitoring
13		Average Final Effluent (EFF-001) Concentration	ug/L	11	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	ug/L	20	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	ug/L	9.0	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	ug/L	21	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	ug/L	63	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	2.2	0.00834*(X4-X7)*X17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	90.0%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	86.2%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Average Total Removal	%	66.9%	Jun 2013-May 2015 Monitoring Data
23		In-Plant Primary Treatment Removal	%	40.3%	2014 Local Limits Monitoring
24	**Existing Conditions (Biosolids)**				
25		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
26		Biosolids Volume to Landfill, Dry	lb/day	17,863	2014 Average Daily Volume (dry weight)
27		Percent Solids of Biosolids to Landfill	%	56.9%	2014 Biosolids Monitoring
28		Specific Gravity at Disposal Point	kg/L	1.0	Estimated
29		Average Digester Concentration	ug/L	6,600	2014 Local Limits Monitoring
30		Average Biosolids Concentration, Dry	mg/kg	130	-
31	**Treatment/Discharge/Disposal Limits**				
32		EFF-001 Daily Maximum Discharge Limit	ug/L	49	2013 NPDES Permit
33		EFF-001 Average Monthly Discharge Limit	ug/L	23	2013 NPDES Permit
34		EFF-001 Monthly Total Load	lbs/day	-	-
35		EFF-002 Daily Maximum Discharge Limit	ug/L	33	2013 NPDES Permit
36		EFF-002 Average Monthly Discharge Limit	ug/L	16	2013 NPDES Permit
37		EFF-002 Annual Total Load	lbs/day	-	-
38		Activated Sludge Inhibition Limit	ug/L	1,000	USEPA Local Limits Guidance Manual
39		Anaerobic Digestion Inhibition Limit	ug/L	40,000	USEPA Local Limits Guidance Manual
40		Biosolids CCR Title 22 Disposal Limit, Wet	mg/kg	2,500	CCR Title 22
41	**Headworks Loading Limits**				
42		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	12	0.00834*X5*X32/(1-X20)
43		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	5.5	0.00834*X5*X33/(1-X20)
44		EFF-001 Monthly Total Discharge Loading Limit	lbs/day	-	-
45		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	8.3	0.00834*X6*X35/(1-X21)
46		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	4.0	0.00834*X6*X36/(1-X21)
47		EFF-002 Monthly Total Discharge Loading Limit	lbs/day	-	-
48		Activated Sludge Inhibition Loading Limit	lbs/day	60	0.00834*X4*X38/(1-X23)
49		Anaerobic Digestion Inhibition Loading Limit	lbs/day	8.2	0.00834*X25*X39/X22
50		Biosolids CCR Title 22 Loading Limit	lbs/day	117	0.000001*X26*X40/X27/X22
51	**Maximum Allowable Headworks Loading (MAHL)**				
52		**Limiting MAHL**	lbs/day	**4.0**	MIN(X42:X50)
53		Basis of MAHL		EFF-002 Average Monthly Discharge Loading Limit	
54	**Maximum Allowable Industrial Loading (MAIL)**				
55		Safety Factor	10%	0.40	W55*X52
56		**Industrial Allocation**	lbs/day	**1.4**	X52-X18-X55
57		Uniform Local Limit	ug/L	3,365	X56/X7/0.00834

	Z	AA	AB	AC	AD
1		**Lead**			
2			Units	Calculations	Formula/Source
3		**Existing Conditions (Wastewater)**			
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	ug/L	1.2	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	0.04	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	ug/L	3.4	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	0.11	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	ug/L	0.58	2014 Local Limits Monitoring
13		Average Final Effluent (EFF-001) Concentration	ug/L	0.44	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	ug/L	0.57	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	ug/L	0.50	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	ug/L	0.55	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	ug/L	0.96	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	0.03	0.00834*(AC4-AC7)*AC17
19		**Removal Efficiency**			
20		In-Plant Total Removal (EFF-001)	%	74.4%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	55.8%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Average Total Removal	%	72.1%	Jun 2013-May 2015 Monitoring Data
23		In-Plant Primary Treatment Removal	%	51.7%	2014 Local Limits Monitoring
24		**Existing Conditions (Biosolids)**			
25		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
26		Biosolids Volume to Landfill, Dry	lb/day	17,863	2014 Average Daily Volume (dry weight)
27		Percent Solids of Biosolids to Landfill	%	56.9%	2014 Biosolids Monitoring
28		Specific Gravity at Disposal Point	kg/L	1.0	Estimated
29		Average Digester Concentration	ug/L	260	2014 Local Limits Monitoring
30		Average Biosolids Concentration, Dry	mg/kg	8.5	-
31		**Treatment/Discharge/Disposal Limits**			
32		EFF-001 Daily Maximum Discharge Limit	ug/L	-	-
33		EFF-001 Average Monthly Discharge Limit	ug/L	-	-
34		EFF-001 Monthly Total Load	lbs/day	-	-
35		EFF-002 Daily Maximum Discharge Limit	ug/L	-	-
36		EFF-002 Average Monthly Discharge Limit	ug/L	-	-
37		EFF-002 Annual Total Load	lbs/day	-	-
38		Activated Sludge Inhibition Limit	ug/L	1,000	USEPA Local Limits Guidance Manual
39		Anaerobic Digestion Inhibition Limit	ug/L	340,000	USEPA Local Limits Guidance Manual
40		Biosolids CCR Title 22 Disposal Limit, Wet	mg/kg	1,000	CCR Title 22
41		**Headworks Loading Limits**			
42		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	-	-
43		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	-	-
44		EFF-001 Monthly Total Discharge Loading Limit	lbs/day	-	-
45		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	-	-
46		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	-	-
47		EFF-002 Monthly Total Discharge Loading Limit	lbs/day	-	-
48		Activated Sludge Inhibition Loading Limit	lbs/day	74	0.00834*AC4*AC38/(1-AC23)
49		Anaerobic Digestion Inhibition Loading Limit	lbs/day	65	0.00834*AC25*AC39/AC22
50		Biosolids CCR Title 22 Loading Limit	lbs/day	44	0.000001*AC26*AC40/AC27/AC22
51		**Maximum Allowable Headworks Loading (MAHL)**			
52		**Limiting MAHL**	lbs/day	**44**	MIN(AC42:AC50)
53		Basis of MAHL		Biosolids CCR Title 22 Loading Limit	
54		**Maximum Allowable Industrial Loading (MAIL)**			
55		Safety Factor	10%	4.4	AB55*AC52
56		**Industrial Allocation**	lbs/day	**39**	AC52-AC18-AC55
57		Uniform Local Limit	ug/L	93,903	AC56/AC7/0.00834

	AE	AF	AG	AH	AI
1	**Mercury**				
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	ug/L	0.099	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	0.0038	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	ug/L	0.93	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	0.037	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	ug/L	0.020	2014 Local Limits Monitoring
13		Average Final Effluent (EFF-001) Concentration	ug/L	0.010	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	ug/L	0.014	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	ug/L	0.0069	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	ug/L	0.0089	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	ug/L	0.026	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	0.00092	0.00834*(AH4-AH7)*AH17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	42.1%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	92.9%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Average Total Removal	%	92.9%	Jun 2013-May 2015 Monitoring Data
23		In-Plant Primary Treatment Removal	%	79.8%	2014 Local Limits Monitoring
24	**Existing Conditions (Biosolids)**				
25		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
26		Biosolids Volume to Landfill, Dry	lb/day	17,863	2014 Average Daily Volume (dry weight)
27		Percent Solids of Biosolids to Landfill	%	56.9%	2014 Biosolids Monitoring
28		Specific Gravity at Disposal Point	kg/L	1.0	Estimated
29		Average Digester Concentration	ug/L	0.011	2014 Local Limits Monitoring
30		Average Biosolids Concentration, Dry	mg/kg	1.3	-
31	**Treatment/Discharge/Disposal Limits**				
32		EFF-001 Daily Maximum Discharge Limit	ug/L	-	-
33		EFF-001 Average Monthly Discharge Limit	ug/L	-	-
34		EFF-001 Monthly Total Load	lbs/day	0.0012	2013 NPDES Permit
35		EFF-002 Daily Maximum Discharge Limit	ug/L	-	-
36		EFF-002 Average Monthly Discharge Limit	ug/L	-	-
37		EFF-002 Annual Total Load	lbs/day	0.00045	2013 NPDES Permit
38		Activated Sludge Inhibition Limit	ug/L	100	USEPA Local Limits Guidance Manual
39		Anaerobic Digestion Inhibition Limit	ug/L	-	-
40		Biosolids CCR Title 22 Disposal Limit, Wet	mg/kg	20	CCR Title 22
41	**Headworks Loading Limits**				
42		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	-	-
43		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	-	-
44		EFF-001 Monthly Total Discharge Loading Limit	lbs/day	0.0021	AH34/(1-AH20)
45		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	-	-
46		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	-	-
47		EFF-002 Monthly Total Discharge Loading Limit	lbs/day	0.0063	AH37/(1-AH21)
48		Activated Sludge Inhibition Loading Limit	lbs/day	18	0.00834*AH4*AH38/(1-AH23)
49		Anaerobic Digestion Inhibition Loading Limit	lbs/day	-	-
50		Biosolids CCR Title 22 Loading Limit	lbs/day	0.68	0.000001*AH26*AH40/AH27/AH22
51	**Maximum Allowable Headworks Loading (MAHL)**				
52		**Limiting MAHL**	lbs/day	**0.0021**	MIN(AH42:AH50)
53		Basis of MAHL		EFF-001 Monthly Total Discharge Loading Limit	
54	**Maximum Allowable Industrial Loading (MAIL)**				
55		Safety Factor	10%	0.00021	AG55*AH52
56		**Industrial Allocation**	lbs/day	**0.0009**	AH52-AH18-AH55
57		Uniform Local Limit	ug/L	2.3	AH56/AH7/0.00834

	AJ	AK	AL	AM	AN
1		**Nickel**			
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	ug/L	3.8	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	0.13	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	ug/L	5.3	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	0.18	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	ug/L	3.5	2014 Local Limits Monitoring
13		Average Final Effluent (EFF-001) Concentration	ug/L	20	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	ug/L	23	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	ug/L	19	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	ug/L	19	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	ug/L	3.1	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	0.11	0.00834*(AM4-AM7)*AM17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	-254%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	-431%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Average Total Removal	%	-315%	Jun 2013-May 2015 Monitoring Data
23		In-Plant Primary Treatment Removal	%	7.9%	2014 Local Limits Monitoring
24	**Existing Conditions (Biosolids)**				
25		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
26		Biosolids Volume to Landfill, Dry	lb/day	17,863	2014 Average Daily Volume (dry weight)
27		Percent Solids of Biosolids to Landfill	%	56.9%	2014 Biosolids Monitoring
28		Specific Gravity at Disposal Point	kg/L	1.0	Estimated
29		Average Digester Concentration	ug/L	940	2014 Local Limits Monitoring
30		Average Biosolids Concentration, Dry	mg/kg	85	-
31	**Treatment/Discharge/Disposal Limits**				
32		EFF-001 Daily Maximum Discharge Limit	ug/L	-	-
33		EFF-001 Average Monthly Discharge Limit	ug/L	-	-
34		EFF-001 Monthly Total Load	lbs/day	-	-
35		EFF-002 Daily Maximum Discharge Limit	ug/L	-	-
36		EFF-002 Average Monthly Discharge Limit	ug/L	-	-
37		EFF-002 Annual Total Load	lbs/day	-	-
38		Activated Sludge Inhibition Limit	ug/L	1,000	USEPA Local Limits Guidance Manual
39		Anaerobic Digestion Inhibition Limit	ug/L	10,000	USEPA Local Limits Guidance Manual
40		Biosolids CCR Title 22 Disposal Limit, Wet	mg/kg	2,000	CCR Title 22
41	**Headworks Loading Limits**				
42		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	-	-
43		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	-	-
44		EFF-001 Monthly Total Discharge Loading Limit	lbs/day	-	-
45		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	-	-
46		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	-	-
47		EFF-002 Monthly Total Discharge Loading Limit	lbs/day	-	-
48		Activated Sludge Inhibition Loading Limit	lbs/day	39	0.00834*AM4*AM38/(1-AM23)
49		Anaerobic Digestion Inhibition Loading Limit	lbs/day	-0.4	0.00834*AM25*AM39/AM22
50		Biosolids CCR Title 22 Loading Limit	lbs/day	-20	0.000001*AM26*AM40/AM27/AM22
51	**Maximum Allowable Headworks Loading (MAHL)**				
52		**Limiting MAHL**	lbs/day	**(20)**	MIN(AM42:AM50)
53		Basis of MAHL		Biosolids CCR Title 22 Loading Limit	
54	**Maximum Allowable Industrial Loading (MAIL)**				
55		Safety Factor	10%	(2.0)	AL55*AM52
56		**Industrial Allocation**	lbs/day	**(18)**	AM52-AM18-AM55
57		Uniform Local Limit	ug/L	(43,230)	AM56/AM7/0.00834

	AO	AP	AQ	AR	AS
1		**Selenium**			
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	ug/L	3.2	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	0.12	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	ug/L	3.9	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	0.16	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	ug/L	-	-
13		Average Final Effluent (EFF-001) Concentration	ug/L	2.4	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	ug/L	5.7	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	ug/L	1.3	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	ug/L	1.6	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	ug/L	2.5	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	0.088	0.00834*(AR4-AR7)*AR17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	60.0%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	63.3%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Average Total Removal	%	56.7%	Jun 2013-May 2015 Monitoring Data
23		In-Plant Primary Treatment Removal	%	-	-
24	**Existing Conditions (Biosolids)**				
25		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
26		Biosolids Volume to Landfill, Dry	lb/day	17,863	2014 Average Daily Volume (dry weight)
27		Percent Solids of Biosolids to Landfill	%	56.9%	2014 Biosolids Monitoring
28		Specific Gravity at Disposal Point	kg/L	1.0	Estimated
29		Average Digester Concentration	ug/L	100	2014 Local Limits Monitoring
30		Average Biosolids Concentration, Dry	mg/kg	4.4	-
31	**Treatment/Discharge/Disposal Limits**				
32		EFF-001 Daily Maximum Discharge Limit	ug/L	7.1	2013 NPDES Permit
33		EFF-001 Average Monthly Discharge Limit	ug/L	4.4	2013 NPDES Permit
34		EFF-001 Monthly Total Load	lbs/day	-	-
35		EFF-002 Daily Maximum Discharge Limit	ug/L	6.9	2013 NPDES Permit
36		EFF-002 Average Monthly Discharge Limit	ug/L	4.5	2013 NPDES Permit
37		EFF-002 Annual Total Load	lbs/day	-	-
38		Activated Sludge Inhibition Limit	ug/L	-	-
39		Anaerobic Digestion Inhibition Limit	ug/L	-	-
40		Biosolids CCR Title 22 Disposal Limit, Wet	mg/kg	100	CCR Title 22
41	**Headworks Loading Limits**				
42		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	0.42	0.00834*AR5*AR32/(1-AR20)
43		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	0.26	0.00834*AR5*AR33/(1-AR20)
44		EFF-001 Monthly Total Discharge Loading Limit	lbs/day	-	-
45		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	0.66	0.00834*AR6*AR35/(1-AR21)
46		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	0.43	0.00834*AR6*AR36/(1-AR21)
47		EFF-002 Monthly Total Discharge Loading Limit	lbs/day	-	-
48		Activated Sludge Inhibition Loading Limit	lbs/day	-	-
49		Anaerobic Digestion Inhibition Loading Limit	lbs/day	-	-
50		Biosolids CCR Title 22 Loading Limit	lbs/day	5.5	0.000001*AR26*AR40/AR27/AR22
51	**Maximum Allowable Headworks Loading (MAHL)**				
52		**Limiting MAHL**	lbs/day	**0.26**	MIN(AR42:AR50)
53		Basis of MAHL		EFF-001 Average Monthly Discharge Loading Limit	
54	**Maximum Allowable Industrial Loading (MAIL)**				
55		Safety Factor	10%	0.026	AQ55*AR52
56		**Industrial Allocation**	lbs/day	**0.15**	AR52-AR18-AR55
57		Uniform Local Limit	ug/L	355	AR56/AR7/0.00834

	AT	AU	AV	AW	AX
1		**Silver**			
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	ug/L	0.24	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	0.0085	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	ug/L	0.62	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	0.021	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	ug/L	0.17	2014 Local Limits Monitoring
13		Average Final Effluent (EFF-001) Concentration	ug/L	0.059	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	ug/L	0.18	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	ug/L	<0.02	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	ug/L	<0.02	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	ug/L	0.22	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	0.0078	0.00834*(AW4-AW7)*AW17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	-112%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	95.9%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Average Total Removal	%	84.7%	Jun 2013-May 2015 Monitoring Data
23		In-Plant Primary Treatment Removal	%	-	-
24	**Existing Conditions (Biosolids)**				
25		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
26		Biosolids Volume to Landfill, Dry	lb/day	17,863	2014 Average Daily Volume (dry weight)
27		Percent Solids of Biosolids to Landfill	%	56.9%	2014 Biosolids Monitoring
28		Specific Gravity at Disposal Point	kg/L	1.0	Estimated
29		Average Digester Concentration	ug/L	58	2014 Local Limits Monitoring
30		Average Biosolids Concentration, Dry	mg/kg	1.5	-
31	**Treatment/Discharge/Disposal Limits**				
32		EFF-001 Daily Maximum Discharge Limit	ug/L	-	-
33		EFF-001 Average Monthly Discharge Limit	ug/L	-	-
34		EFF-001 Monthly Total Load	lbs/day	-	-
35		EFF-002 Daily Maximum Discharge Limit	ug/L	-	-
36		EFF-002 Average Monthly Discharge Limit	ug/L	-	-
37		EFF-002 Annual Total Load	lbs/day	-	-
38		Activated Sludge Inhibition Limit	ug/L	-	-
39		Anaerobic Digestion Inhibition Limit	ug/L	13,000	USEPA Local Limits Guidance Manual
40		Biosolids CCR Title 22 Disposal Limit, Wet	mg/kg	500	CCR Title 22
41	**Headworks Loading Limits**				
42		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	-	-
43		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	-	-
44		EFF-001 Monthly Total Discharge Loading Limit	lbs/day	-	-
45		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	-	-
46		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	-	-
47		EFF-002 Monthly Total Discharge Loading Limit	lbs/day	-	-
48		Activated Sludge Inhibition Loading Limit	lbs/day	-	-
49		Anaerobic Digestion Inhibition Loading Limit	lbs/day	2.1	0.00834*AW25*AW39/AW22
50		Biosolids CCR Title 22 Loading Limit	lbs/day	19	0.000001*AW26*AW40/AW27/AW22
51	**Maximum Allowable Headworks Loading (MAHL)**				
52		**Limiting MAHL**	lbs/day	**2.1**	MIN(AW42:AW50)
53		Basis of MAHL		Anaerobic Digestion Inhibition Loading Limit	
54	**Maximum Allowable Industrial Loading (MAIL)**				
55		Safety Factor	10%	0.21	AV55*AW52
56		**Industrial Allocation**	lbs/day	**1.9**	AW52-AW18-AW55
57		Uniform Local Limit	ug/L	4,540	AW56/AW7/0.00834

	AY	AZ	BA	BB	BC
1		**Zinc**			
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	ug/L	120	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	4.1	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	ug/L	150	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	5.1	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	ug/L	63	2014 Local Limits Monitoring
13		Average Final Effluent (EFF-001) Concentration	ug/L	7.8	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	ug/L	12	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	ug/L	9.5	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	ug/L	12	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	ug/L	100	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	3.5	0.00834*(BB4-BB7)*BB17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	94.6%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	91.5%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Average Total Removal	%	94.9%	Jun 2013-May 2015 Monitoring Data
23		In-Plant Primary Treatment Removal	%	47.5%	2014 Local Limits Monitoring
24	**Existing Conditions (Biosolids)**				
25		Biosolids Flow to Digester	mgd	0.02	Email Correspondence
26		Biosolids Volume to Landfill, Dry	lb/day	17,863	2014 Average Daily Volume (dry weight)
27		Percent Solids of Biosolids to Landfill	%	56.9%	2014 Biosolids Monitoring
28		Specific Gravity at Disposal Point	kg/L	1.0	Estimated
29		Average Digester Concentration	ug/L	13,000	2014 Local Limits Monitoring
30		Average Biosolids Concentration, Dry	mg/kg	270	-
31	**Treatment/Discharge/Disposal Limits**				
32		EFF-001 Daily Maximum Discharge Limit	ug/L	-	-
33		EFF-001 Average Monthly Discharge Limit	ug/L	-	-
34		EFF-001 Monthly Total Load	lbs/day	-	-
35		EFF-002 Daily Maximum Discharge Limit	ug/L	-	-
36		EFF-002 Average Monthly Discharge Limit	ug/L	-	-
37		EFF-002 Annual Total Load	lbs/day	-	-
38		Activated Sludge Inhibition Limit	ug/L	300	USEPA Local Limits Guidance Manual
39		Anaerobic Digestion Inhibition Limit	ug/L	400,000	USEPA Local Limits Guidance Manual
40		Biosolids CCR Title 22 Disposal Limit, Wet	mg/kg	5,000	CCR Title 22
41	**Headworks Loading Limits**				
42		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	-	-
43		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	-	-
44		EFF-001 Monthly Total Discharge Loading Limit	lbs/day	-	-
45		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	-	-
46		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	-	-
47		EFF-002 Monthly Total Discharge Loading Limit	lbs/day	-	-
48		Activated Sludge Inhibition Loading Limit	lbs/day	20	0.00834*BB4*BB38/(1-BB23)
49		Anaerobic Digestion Inhibition Loading Limit	lbs/day	58	0.00834*BB25*BB39/BB22
50		Biosolids CCR Title 22 Loading Limit	lbs/day	165	0.000001*BB26*BB40/BB27/BB22
51	**Maximum Allowable Headworks Loading (MAHL)**				
52		**Limiting MAHL**	lbs/day	**20**	MIN(BB42:BB50)
53		Basis of MAHL		Activated Sludge Inhibition Loading Limit	
54	**Maximum Allowable Industrial Loading (MAIL)**				
55		Safety Factor	10%	2.0	BA55*BB52
56		**Industrial Allocation**	lbs/day	**15**	BB52-BB18-BB55
57		Uniform Local Limit	ug/L	35,563	BB56/BB7/0.00834

	A	B	C	D	E
1		**Cyanide**			
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average WWTP Influent Flow	mgd	4.28	Jun 2013-May 2015 Average Daily Influent Flow
5		Average WWTP Effluent Flow (EFF-001)	mgd	2.86	Jun 2013-May 2015 Average Daily Effluent Flow
6		Average WWTP Effluent Flow (EFF-002)	mgd	4.18	Jun 2013-May 2015 Average Daily Effluent Flow
7		Average Industrial Flow	mgd	0.05	Estimated
8		Average Influent Concentration	ug/L	0.81	Jun 2013-May 2015 Monitoring Data
9		Average Influent Loading	lbs/day	0.028	Jun 2013-May 2015 Monitoring Data
10		Maximum Influent Concentration	ug/L	2.7	Jun 2013-May 2015 Monitoring Data
11		Maximum Influent Loading	lbs/day	0.10	Jun 2013-May 2015 Monitoring Data
12		Average Primary Effluent Concentration	ug/L	0.63	2014 Local Limits Monitoring
13		Average Final Effluent (EFF-001) Concentration	ug/L	1.0	Jun 2013-May 2015 Monitoring Data
14		Maximum Final Effluent (EFF-001) Concentration	ug/L	4.8	Jun 2013-May 2015 Monitoring Data
15		Average Final Effluent (EFF-002) Concentration	ug/L	<0.9	Jun 2013-May 2015 Monitoring Data
16		Maximum Final Effluent (EFF-002) Concentration	ug/L	<0.9	Jun 2013-May 2015 Monitoring Data
17		Average Non-Industrial Concentration	ug/L	0.7	2014 Local Limits Monitoring
18		Average Non-Industrial Loading	lbs/day	0.025	0.00834*(D4-D7)*D17
19	**Removal Efficiency**				
20		In-Plant Total Removal (EFF-001)	%	25.0%	Jun 2013-May 2015 Monitoring Data
21		In-Plant Total Removal (EFF-002)	%	44.6%	Jun 2013-May 2015 Monitoring Data
22		In-Plant Average Total Removal	%	25.0%	Jun 2013-May 2015 Monitoring Data
23		In-Plant Primary Treatment Removal	%	22.2%	2014 Local Limits Monitoring
24	**Existing Conditions (Biosolids)**				
25		Biosolids Flow to Digester	mgd	0.017	Email Correspondence
26		Biosolids Volume to Landfill, Dry	kg/day	17,863	2014 Average Daily Volume (dry weight)
27		Percent Solids of Biosolids to Landfill	%	56.9%	2014 Biosolids Monitoring
28		Specific Gravity at Disposal Point	kg/L	1.0	Estimated
29		Average Digester Concentration	ug/L	38	2014 Local Limits Monitoring
30		Average Biosolids Concentration, Dry	mg/kg	-	-
31	**Treatment/Discharge/Disposal Limits**				
32		EFF-001 Daily Maximum Discharge Limit	ug/L	8.1	2013 NPDES Permit
33		EFF-001 Average Monthly Discharge Limit	ug/L	3.8	2013 NPDES Permit
34		EFF-001 Monthly Total Load	lbs/day	-	-
35		EFF-002 Daily Maximum Discharge Limit	ug/L	-	-
36		EFF-002 Average Monthly Discharge Limit	ug/L	-	-
37		EFF-002 Annual Total Load	lbs/day	-	-
38		Activated Sludge Inhibition Limit	ug/L	100	USEPA Local Limits Guidance Manual
39		Anaerobic Digestion Inhibition Limit	ug/L	1,000	USEPA Local Limits Guidance Manual
40		Biosolids CCR Title 22 Disposal Limit, Wet	mg/kg	-	-
41	**Headworks Loading Limits**				
42		EFF-001 Daily Maximum Discharge Loading Limit	lbs/day	0.26	0.00834*D5*D32/(1-D20)
43		EFF-001 Average Monthly Discharge Loading Limit	lbs/day	0.12	0.00834*D5*D33/(1-D20)
44		EFF-001 Monthly Total Discharge Loading Limit	lbs/day	-	-
45		EFF-002 Daily Maximum Discharge Loading Limit	lbs/day	-	-
46		EFF-002 Average Monthly Discharge Loading Limit	lbs/day	-	-
47		EFF-002 Monthly Total Discharge Loading Limit	lbs/day	-	-
48		Activated Sludge Inhibition Loading Limit	lbs/day	4.6	0.00834*D4*D38/(1-D23)
49		Anaerobic Digestion Inhibition Loading Limit	lbs/day	0.74	D9*D39/D29
50		Biosolids CCR Title 22 Loading Limit	lbs/day	-	-
51	**Maximum Allowable Headworks Loading (MAHL)**				
52		**Limiting MAHL**	lbs/day	**0.12**	MIN(D42:D50)
53		Basis of MAHL		EFF-001 Average Monthly Discharge Loading Limit	
54	**Maximum Allowable Industrial Loading (MAIL)**				
55		Safety Factor	10%	0.012	C55*D52
56		**Industrial Allocation**	lbs/day	**0.084**	D52-D18-D55
57		Uniform Local Limit	ug/L	202	D56/D7/0.00834

APPENDIX E

AHL Documentation/Assumptions

This appendix lists the source of data and assumptions used in the derivation of the City of Davis (City) Wastewater Treatment Plant (Plant) maximum allowable headworks loadings (MAHL), maximum allowable industrial loadings (MAIL), and local limits for pollutants of concern. Variations from these data sources are noted on a pollutant-by-pollutant basis. This appendix also discusses sampling and quality assurance and quality control (QA/QC) issues and addresses how these issues were handled in the development of the local limits.

For All Pollutants

- The June 2013 to May 2015 average daily influent flow was 4.28 million gallons per day (MGD).
- The June 2013 to May 2015 average daily effluent flow to the Willow Slough Bypass (EFF-001) was 2.86 MGD.
- The June 2013 to May 2015 average daily effluent flow to the Conaway Ranch Toe Drain (EFF-002) was 4.18 MGD.
- The estimated daily industrial flow was 0.05 MGD based on recent Pretreatment Compliance Inspection and Audit reports.
- The daily feed rate to the anaerobic sludge digesters was 0.0165 MGD based on correspondence with Plant operators.
- In 2013, approximately 3,260 tons of biosolids (dry weight) that was 56.9% solids were disposed of at the Yolo County Central Landfill.
- The average biosolids density at disposal was estimated to be 1.0 kilogram/liter (kg/L).
- Regression on order statistics (ROS) was used to estimate average pollutant concentrations and loads if there are sufficient detected data. If there were insufficient detected data to estimate the average using ROS, then the one-half of the method detection limit was used for concentrations that are non-detect. The average was then calculated based on the estimate of the one-half of the method detection limit.
- Biosolids disposal limits were from Title 22 of the California Code of Regulations and Title 40 of the Code of Federal Regulations Part 503.
- Effluent limitations for conventional and toxic pollutants were from the City's National Pollutant Discharge Elimination System (NPDES) permit (CA0079049, Order No. R2-2013-0127-01).
- All collection system, Plant influent, Plant primary treatment effluent, Plant final effluent, and Plant anaerobic sludge digester data were from regular monitoring and/or local limits monitoring from June 2013 to May 2015.
- Biosolids disposal data were from regular biosolids monitoring in 2014.
- A 10% safety factor was used in calculating all MAILs unless specified.

Conventional Pollutants

Ammonia as N

- Data were collected for the influent, primary treatment effluent, final effluent, anaerobic digester, and collection system during local limits monitoring in 2014 and 2015. Data collected from local limits monitoring were supplemented by historic data (June 2013 to May 2015) from the influent, primary effluent, and final effluent.

Biochemical Oxygen Demand

- Historic data (June 2013 to May 2015) for the influent and final effluent were used. Collection system data were collected during local limits monitoring in 2014.
- The Plant design capacity for BOD was assumed to be 275 mg/L.

Total Suspended Solids

- Historic data (June 2013 to May 2015) for the influent and final effluent were used. Collection system data were collected during local limits monitoring in 2014.
- The Plant design capacity for TSS was assumed to be 275 mg/L.

Metals (Total Recoverable)

Aluminum

- Data were collected for the influent, primary treatment effluent, final effluent, and collection system during local limits monitoring in 2014 and 2015. Data collected from local limits monitoring were supplemented by historic data (June 2013 to May 2015) from the influent and final effluent.

Arsenic

- Data were collected for the influent, primary treatment effluent, final effluent, anaerobic digester, and collection system during local limits monitoring in 2014 and 2015. Data collected from local limits monitoring were supplemented by historic data (June 2013 to May 2015) from the influent, primary effluent, and final effluent.

Cadmium

- Data were collected for the influent, primary treatment effluent, final effluent, anaerobic digester, and collection system during local limits monitoring in 2014 and 2015. Data collected from local limits monitoring were supplemented by historic data (June 2013 to May 2015) from the influent, primary effluent, and final effluent.

Chromium

- Data were collected for the influent, primary treatment effluent, final effluent, anaerobic digester, and collection system during local limits monitoring in 2014 and 2015. Data collected from local limits monitoring were supplemented by historic data (June 2013 to May 2015) from the influent, primary effluent, and final effluent.
- The inhibition values for chromium (VI) were used to derive the MAHL if they were more stringent than the inhibition values for chromium (total).

Copper

- Data were collected for the influent, primary treatment effluent, final effluent, anaerobic digester, and collection system during local limits monitoring in 2014 and 2015. Data collected from local limits monitoring were supplemented by historic data (June 2013 to May 2015) from the influent, primary effluent, and final effluent.
- The 9 December 2014 final effluent equipment blank for copper was detected at 1.5 μg/L. Only one final effluent sample was collected for copper during the December 2014 Local Limits Monitoring Program sampling period. The final effluent copper result was similar to historic sampling results. As a result, this data point was neither qualified nor excluded from this analysis.
- A final effluent (E-001) sample collected on 19 May 2014 (890 μg/L) was excluded from this analysis as an outlier.

Lead

- Data were collected for the influent, primary treatment effluent, final effluent, anaerobic digester, and collection system during local limits monitoring in 2014 and 2015. Data collected from local limits monitoring were supplemented by historic data (June 2013 to May 2015) from the influent, primary effluent, and final effluent.
- The 12 November 2014 primary treatment effluent equipment blank for lead was detected at J0.07 μg/L. Primary treatment effluent concentrations for lead collected during the Local Limits Monitoring Program were similar to historic sampling results. As a result, no data were qualified or excluded from this analysis.
- The 9 December 2014 final effluent equipment blank for lead was detected at 0.26 μg/L. Only one final effluent sample was collected for lead during the December 2014 Local Limits Monitoring Program sampling period. The final effluent lead result was similar to historic sampling results. As a result, this data point was neither qualified nor excluded from this analysis.

Mercury

- Data were collected for the influent, primary treatment effluent, final effluent, anaerobic digester, and collection system during local limits monitoring in 2014 and 2015. Data collected from local limits monitoring were supplemented by historic data (June 2013 to May 2015) from the influent, primary effluent, and final effluent.

Nickel

- Data were collected for the influent, primary treatment effluent, final effluent, anaerobic digester, and collection system during local limits monitoring in 2014 and 2015. Data collected from local limits monitoring were supplemented by historic data (June 2013 to May 2015) from the influent, primary effluent, and final effluent.
- The 12 November 2014 primary treatment effluent equipment blank for nickel was detected at 0.51 μg/L. Primary treatment effluent concentrations for nickel collected during the Local Limits Monitoring Program were similar to historic sampling results. As a result, no data were qualified or excluded from this analysis.

Selenium

- Data were collected for the influent, final effluent, anaerobic digester, and collection system during local limits monitoring in 2014 and 2015. Data collected from local limits monitoring were supplemented by historic data (June 2013 to May 2015) from the influent and final effluent.

Silver

- Data were collected for the influent, final effluent, anaerobic digester, and collection system during local limits monitoring in 2014 and 2015. Data collected from local limits monitoring were supplemented by historic data (June 2013 to May 2015) from the influent and final effluent.

Zinc

- Data were collected for the influent, primary treatment effluent, final effluent, anaerobic digester, and collection system during local limits monitoring in 2014 and 2015. Data collected from local limits monitoring were supplemented by historic data (June 2013 to May 2015) from the influent, primary effluent, and final effluent.
- The 9 December 2014 final effluent equipment blank for zinc was detected at 60 μg/L. Only one final effluent sample was collected for zinc during the December 2014 Local Limits Monitoring Program sampling period. The final effluent zinc result was similar to historic sampling results. As a result, this data point was neither qualified nor excluded from this analysis.

Other Toxics

Cyanide

- Data were collected for the influent, primary treatment effluent, final effluent, anaerobic digester, and collection system during local limits monitoring in 2014 and 2015. Data collected from local limits monitoring were supplemented by historic data (June 2013 to May 2015) from the influent, primary effluent, and final effluent.
- ROS analyses could not be conducted for data from the collection system, influent, and primary effluent because most sample results were non-detect. For data collected at these locations, a surrogate of one-half the method detection level (MDL) was used to calculate average concentrations.

Attachment B Davis Local Limits Calculations (July 2017)

Local Limits Determination Based on NPDES Daily Effluent Limits

ENVIRONMENTAL CRITERIA AND PROCESS DATA BASE

Pollutant	IU Pollut. Flow (MGD) (Qind)	POTW Flow (MGD) (Qpotw)	Removal Efficiency (%) (Rpotw)	NPDES Daily Limit (mg/l) (Ccrit)	Domestic and Conc. (mg/l) (Cdom)
Ammonia as N	0.05	4.28	96.6	3.3	41
BOD	0.05	4.28	94.5	90	240
TSS	0.05	4.28	93.3	150	250
Arsenic	0.05	4.28	22.2		0.0043
Cadmium	0.05	4.28	79.4	0.0083	0.00021
Chromium	0.05	4.28	77.1		0.015
Copper	0.05	4.28	66.9	0.033	0.063
Lead	0.05	4.28	72.1		0.00096
Mercury	0.05	4.28	92.9		0.000026
Nickel	0.05	4.28	-315		0.0031
Selenium	0.05	4.28	56.7	0.0069	0.0025
Silver	0.05	4.28	84.7		0.00022
Zinc	0.05	4.28	94.9		0.1
Cyanide	0.05	4.28	25	0.0081	0.0007

(Qind) Industrial User total plant discharge flow in Million Gallons per Day (MGD) that contai

(Qpotw) POTW's average influent flow in MGD.

(Rpotw) Removal efficiency across POTW as percent.

(Ccrit) NPDES daily maximum permit limit for a particular pollutant in mg/l.

(Qdom) Domestic/commercial background flow in MGD.

(Cdom) Domestic/commercial background concentration for a particular pollutant in mg/l.

(Lhw) Maximum allowable headworks pollutant loading to the POTW in pounds per day (lbs

(Ldom) Domestic/commercial background loading to the POTW for a particular pollutant in po

(Lind) Maximum allowable industrial loading to the POTW in pounds per day.

(Cind) Industrial allowable local limit for a given pollutant in mg/l.

(SF) Safety factor as a percent.

8.34 Unit conversion factor

Lhw = 8.34 * Ccrit * Qpotw

1 - Rpotw

::

Local Limits Determination Based on NPDES Monthly Effluent Limits

ENVIRONMENTAL CRITERIA AND PROCESS DATA BASE

Pollutant	IU Pollut. Flow (MGD) (Qind)	POTW Flow (MGD) (Qpotw)	Removal Efficiency (%) (Rpotw)	NPDES Monthly Limit (mg/l) (Ccrit)	Domestic and Conc. (mg/l) (Cdom)
Ammonia as N	0.05	4.28	96.6	1.3	41

BOD	0.05	4.28	94.5	30	240
TSS	0.05	4.28	93.3	50	250
Aresnic	0.05	4.28	22.2		0.0043
Cadmium	0.05	4.28	79.4	0.0043	0.00021
Chromium	0.05	4.28	77.1		0.015
Copper	0.05	4.28	66.9	0.016	0.063
Lead	0.05	4.28	72.1		0.00096
Mercury	0.05	4.28	92.9		0.000026
Nickel	0.05	4.28	-315		0.0031
Selenium	0.05	4.28	56.7	0.0044	0.0025
Silver	0.05	4.28	84.7		0.00022
Zinc	0.05	4.28	94.9		0.1
Cyanide	0.05	4.28	25	0.0038	0.0007

(Qind) Industrial User total plant discharge flow in Million Gallons per Day (MGD) that contai
(Qpotw) POTW's average influent flow in MGD.
(Rpotw) Removal efficiency across POTW as percent.
(Ccrit) NPDES monthly maximum permit limit for a particular pollutant in mg/l.
(Qdom) Domestic/commercial background flow in MGD.
(Cdom) Domestic/commercial background concentration for a particular pollutant in mg/l.
(Lhw) Maximum allowable headworks pollutant loading to the POTW in pounds per day (lbs
(Ldom) Domestic/commercial background loading to the POTW for a particular pollutant in pc
(Lind) Maximum allowable industrial loading to the POTW in pounds per day.
(Cind) Industrial allowable local limit for a given pollutant in mg/l.
(SF) Safety factor as a percent.
8.34 Unit conversion factor

Lhw = 8.34 * Ccrit * Qpotw
1 - Rpotw

Mercury Lhw = .0012/(1-Rpotw) Based on NPDES permit monthly total load limit

::

Local Limits Determination Based on Activated Sludge Inhibition Level

ENVIRONMENTAL CRITERIA AND PROCESS DATA BASE

Pollutant	IU Pollut. Flow (MGD) (Qind)	POTW Flow (MGD) (Qpotw)	Removal Efficiency (%) (Rprim)	Activated Sludge Inhibition Level (mg/l) (Ccrit)	Domestic and Conc. (mg/l) (Cdom)
Ammonia as N	0.05	4.28	9.5	480	41
BOD	0.05	4.28			240
TSS	0.05	4.28			250
Aresnic	0.05	4.28	12		0.0043
Cadmium	0.05	4.28	26.3	0.1	0.00021
Chromium	0.05	4.28	34.3	1	0.015
Copper	0.05	4.28	40.3	1	0.063
Lead	0.05	4.28	51.7	1	0.00096
Mercury	0.05	4.28	79.8	1	0.000026
Nickel	0.05	4.28	7.9	0.1	0.0031

Selenium	0.05	4.28			0.0025
Silver	0.05	4.28		1	0.00022
Zinc	0.05	4.28	47.5	0.3	0.1
Cyanide	0.05	4.28	22.2	0.1	0.0007

(Qind) Industrial User total plant discharge flow in Million Gallons per Day (MGD) that contai
(Qpotw) POTW's average influent flow in MGD.
(Rprim) Removal efficiency across across primary treatment as percent.
(Ccrit) Activated sludge threshold inhibition level, mg/l.
(Qdom) Domestic/commercial background flow in MGD.
(Cdom) Domestic/commercial background concentration for a particular pollutant in mg/l.
(Lhw) Maximum allowable headworks pollutant loading to the POTW in pounds per day (lbs
(Ldom) Domestic/commercial background loading to the POTW for a particular pollutant in po
(Lind) Maximum allowable industrial loading to the POTW in pounds per day.
(Cind) Industrial allowable local limit for a given pollutant in mg/l.
(SF) Safety factor as a percent.
8.34 Unit conversion factor

$$Lhw = \frac{8.34 * Ccrit * Qpotw}{1 - Rprim}$$

::

Local Limits Determination Based on Nitrification Inhibition Level

ENVIRONMENTAL CRITERIA AND PROCESS DATA BASE

Pollutant	IU Pollut. Flow (MGD) (Qind)	POTW Flow (MGD) (Qpotw)	Removal Efficiency (%) (Rsec)	Nitrification Inhibition Level (mg/l) (Ccrit)	Domestic and Conc. (mg/l) (Cdom)
Ammonia as N	0.05	4.28			41
BOD	0.05	4.28			240
TSS	0.05	4.28			250
Aresnic	0.05	4.28			0.0043
Cadmium	0.05	4.28			0.00021
Chromium	0.05	4.28			0.015
Copper	0.05	4.28			0.063
Lead	0.05	4.28			0.00096
Mercury	0.05	4.28			0.000026
Nickel	0.05	4.28			0.0031
Selenium	0.05	4.28			0.0025
Silver	0.05	4.28			0.00022
Zinc	0.05	4.28			0.1
Cyanide	0.05	4.28			0.0007

(Qind) Industrial User total plant discharge flow in Million Gallons per Day (MGD) that contai
(Qpotw) POTW's average influent flow in MGD.
(Rsec) Removal efficiency across primary treatment and secodary treatment as percent.
(Ccrit) Nitrification threshold inhibition level, mg/l.

(Qdom)	Domestic/commercial background flow in MGD.
(Cdom)	Domestic/commercial background concentration for a particular pollutant in mg/l.
(Lhw)	Maximum allowable headworks pollutant loading to the POTW in pounds per day (lbs
(Ldom)	Domestic/commercial background loading to the POTW for a particular pollutant in pc
(Lind)	Maximum allowable industrial loading to the POTW in pounds per day.
(Cind)	Industrial allowable local limit for a given pollutant in mg/l.
(SF)	Safety factor as a percent.
8.34	Unit conversion factor

$$Lhw = \frac{8.34 * Ccrit * Qpotw}{1 - Rsec}$$

::

Local Limits Determination Based on USEPA 503 Sludge Regulations
ENVIRONMENTAL CRITERIA AND PROCESS DATA BASE

Pollutant	IU Pollut. Flow (MGD) (Qind)	POTW Flow (MGD) (Qpotw)	Sludge Flow (MGD) (Qsldg)	Percent Solids (%) (PS)	Removal Efficiency (%) (Rpotw)
Ammonia as N	0.05	4.28	0.02	56.9	96.6
BOD	0.05	4.28	0.02	56.9	94.5
TSS	0.05	4.28	0.02	56.9	93.3
Aresnic	0.05	4.28	0.02	56.9	22.2
Cadmium	0.05	4.28	0.02	56.9	79.4
Chromium	0.05	4.28	0.02	56.9	77.1
Copper	0.05	4.28	0.02	56.9	66.9
Lead	0.05	4.28	0.02	56.9	72.1
Mercury	0.05	4.28	0.02	56.9	92.9
Nickel	0.05	4.28	0.02	56.9	-315
Selenium	0.05	4.28	0.02	56.9	56.7
Silver	0.05	4.28	0.02	56.9	84.7
Zinc	0.05	4.28	0.02	56.9	94.9
Cyanide	0.05	4.28	0.02	56.9	25

(Qind)	Industrial User total plant discharge flow in Million Gallons per Day (MGD) that contai
(Qpotw)	POTW's average influent flow in MGD.
(Qsldg)	Sludge flow to disposal in MGD.
(PS)	Percent solids of sludge to disposal.
(Rpotw)	Removal efficiency across POTW as a percent.
(Cslcrit)	503 sludge criteria in mg/kg dry sludge.
(Qdom)	Domestic/commercial background flow in MGD.
(Cdom)	Domestic/commercial background concentration for a particular pollutant in mg/l.
(Lhw)	Maximum allowable headworks pollutant loading to the POTW in pounds per day (lbs
(Ldom)	Domestic/commercial background loading to the POTW for a particular pollutant in pc
(Lind)	Maximum allowable industrial loading to the POTW in pounds per day.
(Cind)	Industrial allowable local limit for a given pollutant in mg/l.
(SF)	Safety factor as a percent.

8.34 Unit conversion factor

Lhw = 8.34 * Cslcrit * (PS/100) * Qsldg
Rpotw

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Local Limits Determination Based on State Sludge Criteria
ENVIRONMENTAL CRITERIA AND PROCESS DATA BASE

Pollutant	IU Pollut. Flow (MGD) (Qind)	POTW Flow (MGD) (Qpotw)	Sludge Flow (MGD) (Qsldg)	Percent Solids (%) (PS)	Removal Efficiency (%) (Rpotw)
Ammonia as N	0.05	4.28	0.02	56.9	96.6
BOD	0.05	4.28	0.02	56.9	94.5
TSS	0.05	4.28	0.02	56.9	93.3
Aresnic	0.05	4.28	0.02	56.9	22.2
Cadmium	0.05	4.28	0.02	56.9	79.4
Chromium	0.05	4.28	0.02	56.9	77.1
Copper	0.05	4.28	0.02	56.9	66.9
Lead	0.05	4.28	0.02	56.9	72.1
Mercury	0.05	4.28	0.02	56.9	92.9
Nickel	0.05	4.28	0.02	56.9	-315
Selenium	0.05	4.28	0.02	56.9	56.7
Silver	0.05	4.28	0.02	56.9	84.7
Zinc	0.05	4.28	0.02	56.9	94.9
Cyanide	0.05	4.28	0.02	56.9	25

(Qind) Industrial User total plant discharge flow in Million Gallons per Day (MGD) that contai
(Qpotw) POTW's average influent flow in MGD.
(Qsldg) Sludge flow to disposal in MGD.
(PS) Percent solids of sludge to disposal.
(Rpotw) Removal efficiency across POTW as a percent.
(Cslcrit) State sludge criteria in mg/kg dry sludge.
(Qdom) Domestic/commercial background flow in MGD.
(Cdom) Domestic/commercial background concentration for a particular pollutant in mg/l.
(Lhw) Maximum allowable headworks pollutant loading to the POTW in pounds per day (lbs
(Ldom) Domestic/commercial background loading to the POTW for a particular pollutant in pc
(Lind) Maximum allowable industrial loading to the POTW in pounds per day.
(Cind) Industrial allowable local limit for a given pollutant in mg/l.
(SF) Safety factor as a percent.
8.34 Unit conversion factor

Lhw = 8.34 * Cslcrit * (PS/100) * Qsldg
Rpotw

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Local Limits Determination Based on Chronic Water Quality Standards
ENVIRONMENTAL CRITERIA AND PROCESS DATA BASE

Pollutant	IU Pollut. Flow (MGD) (Qind)	POTW Flow (MGD) (Qpotw)	Upstream Flow (MGD) (Qstr)	Upstream Conc. (mg/l) (Cstr)		Removal Efficiency (%) (Rpotw)
Ammonia as N	0.05	4.28				96.6
BOD	0.05	4.28				94.5
TSS	0.05	4.28				93.3
Aresnic	0.05	4.28				22.2
Cadmium	0.05	4.28				79.4
Chromium	0.05	4.28				77.1
Copper	0.05	4.28				66.9
Lead	0.05	4.28				72.1
Mercury	0.05	4.28				92.9
Nickel	0.05	4.28				-315
Selenium	0.05	4.28				56.7
Silver	0.05	4.28				84.7
Zinc	0.05	4.28				94.9
Cyanide	0.05	4.28				25

(Qind)	Industrial User total plant discharge flow in Million Gallons per Day (MGD) that contai
(Qpotw)	POTW's average influent flow in MGD.
(Qstr)	Receiving stream (upstream) 7Q10 flow in MGD.
(Cstr)	Receiving stream background level in mg/l.
(Rpotw)	Removal efficiency across POTW as percent.
(Ccrit)	State chronic water quality standard for a particular pollutant in mg/l.
(Qdom)	Domestic/commercial background flow in MGD.
(Cdom)	Domestic/commercial background concentration for a particular pollutant in mg/l.
(Lhw)	Maximum allowable headworks pollutant loading to the POTW in pounds per day (lbs
(Ldom)	Domestic/commercial background loading to the POTW for a particular pollutant in po
(Lind)	Maximum allowable industrial loading to the POTW in pounds per day.
(Cind)	Industrial allowable local limit for a given pollutant in mg/l.
(SF)	Safety factor as a percent.
8.34	Unit conversion factor

$$Lhw = \frac{8.34 * (Ccrit * (Qstr + Qpotw) - (Cstr * Qstr))}{1 - Rpotw}$$

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Local Limits Determination Based on Acute Water Quality Stand

ENVIRONMENTAL CRITERIA AND PROCESS DATA BASE

Pollutant	IU Pollut. Flow (MGD) (Qind)	POTW Flow (MGD) (Qpotw)	Upstream Flow (MGD) (Qstr)	Upstream Conc. (mg/l) (Cstr)		Removal Efficiency (%) (Rpotw)
Ammonia as N	0.05	4.28			0	96.6
BOD	0.05	4.28			0	94.5
TSS	0.05	4.28			0	93.3
Aresnic	0.05	4.28			0	22.2

Cadmium	0.05	4.28	0	79.4
Chromium	0.05	4.28	0	77.1
Copper	0.05	4.28	0	66.9
Lead	0.05	4.28	0	72.1
Mercury	0.05	4.28	0	92.9
Nickel	0.05	4.28	0	-315
Selenium	0.05	4.28	0	56.7
Silver	0.05	4.28	0	84.7
Zinc	0.05	4.28	0	94.9
Cyanide	0.05	4.28	0	25

(Qind) Industrial User total plant discharge flow in Million Gallons per Day (MGD) that contai

(Qpotw) POTW's average influent flow in MGD.

(Qstr) Receiving stream (upstream) 1Q10 flow in MGD.

(Cstr) Receiving stream background level in mg/l.

(Rpotw) Removal efficiency across POTW as percent.

(Ccrit) State acute water quality standard for a particular pollutant in mg/l.

(Qdom) Domestic/commercial background flow in MGD.

(Cdom) Domestic/commercial background concentration for a particular pollutant in mg/l.

(Lhw) Maximum allowable headworks pollutant loading to the POTW in pounds per day (lbs

(Ldom) Domestic/commercial background loading to the POTW for a particular pollutant in pc

(Lind) Maximum allowable industrial loading to the POTW in pounds per day.

(Cind) Industrial allowable local limit for a given pollutant in mg/l.

(SF) Safety factor as a percent.

8.34 Unit conversion factor

$$Lhw = \frac{8.34 * (Ccrit * (Qstr + Qpotw) - (Cstr * Qstr))}{1 - Rpotw}$$

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Local Limits Determination Based on Anaerobic Digester Inhibition

ENVIRONMENTAL CRITERIA AND PROCESS DATA BASE

Pollutant	IU Pollut. Flow (MGD) (Qind)	POTW Flow (MGD) (Qpotw)	Sludge Flow to Digester (MGD) (Qdig)	Removal Efficiency (%) (Rpotw)	Anaerobic Digester Inhibition Level (mg/l) (Ccrit)
Ammonia as N	0.05	4.28	0.02	96.6	480
BOD	0.05	4.28	0.02	94.5	
TSS	0.05	4.28	0.02	93.3	
Aresnic	0.05	4.28	0.02	22.2	1.6
Cadmium	0.05	4.28	0.02	79.4	20
Chromium	0.05	4.28	0.02	77.1	110
Copper	0.05	4.28	0.02	66.9	40
Lead	0.05	4.28	0.02	72.1	340
Mercury	0.05	4.28	0.02	92.9	
Nickel	0.05	4.28	0.02	-315	10
Selenium	0.05	4.28	0.02	56.7	
Silver	0.05	4.28	0.02	84.7	13

Zinc	0.05	4.28	0.02	94.9	400
Cyanide	0.05	4.28	0.02	25	1

(Qind) Industrial User total plant discharge flow in Million Gallons per Day (MGD) that contai
(Qpotw) POTW's average influent flow in MGD.
(Qdig) Sludge flow to digester in MGD.
(Rpotw) Removal efficiency across POTW as percent.
(Ccrit) Anaerobic digester threshold inhibition level in mg/l.
(Qdom) Domestic/commercial background flow in MGD.
(Cdom) Domestic/commercial background concentration for a particular pollutant in mg/l.
(Lhw) Maximum allowable headworks pollutant loading to the POTW in pounds per day (lbs
(Ldom) Domestic/commercial background loading to the POTW for a particular pollutant in po
(Lind) Maximum allowable industrial loading to the POTW in pounds per day.
(Cind) Industrial allowable local limit for a given pollutant in mg/l.
(SF) Safety factor as a percent.
8.34 Unit conversion factor

$$Lhw = \frac{8.34 * Ccrit * Qdig}{Rpotw}$$

TABLE 1

	MAXIMUM LOADING		INDUSTRIAL			
Commercial Flow (MGD) (Qdom)	Allowable Headworks (lbs/day) (Lhw)	Domestic/ Commercial (lbs/day) (Ldom)	Allowable Loading (lbs/day) (Lind)	Local Limit (mg/l) (Cind)	Safety Factor (%) (SF)	
4.23	3464.534118	1446.4062	1671.674506	4008.81176		10
4.23	58410.32727	8466.768	44102.52655	105761.455		10
4.23	79914.62687	8819.55	63103.61418	151327.612		10
4.23	-	0.15169626	-	-		10
4.23	1.43820466	0.007408422	1.286975772	3.08627283		10
4.23	-	0.529173	-	-		10
4.23	3.558735952	2.2225266	0.980335756	2.35092508		10
4.23	-	0.033867072	-	-		10
4.23	-	0.000917233	-	-		10
4.23	-	0.10936242	-	-		10
4.23	0.568814965	0.0881955	0.423737969	1.0161582		10
4.23	-	0.007761204	-	-		10
4.23	-	3.52782	-	-		10
4.23	0.38550816	0.02469474	0.322262604	0.772812		10

ins a particular pollutan

s/day)
ounds per day (lbs/day)

TABLE 2

	MAXIMUM LOADING		INDUSTRIAL			
Commercial Flow (MGD) (Qdom)	Allowable Headworks (lbs/day) (Lhw)	Domestic/ Commercial (lbs/day) (Ldom)	Allowable Loading (lbs/day) (Lind)	Local Limit (mg/l) (Cind)	Safety Factor (%) (SF)	
4.23	1364.816471	1446.4062	-218.0713765	-522.95294		10

4.23	19470.10909	8466.768	9056.330182	21717.8182		10
4.23	26638.20896	8819.55	15154.83806	36342.5373		10
4.23	-	0.15169626	-	-		10
4.23	0.745093981	0.007408422	0.663176161	1.5903505		10
4.23	-	0.529173	-	-		10
4.23	1.725447734	2.2225266	-0.669623639	-1.6058121		10
4.23	-	0.033867072	-	-		10
4.23	0.016901408	0.000917233	0.014294034	0.03427826		10
4.23	-	0.10936242	-	-		10
4.23	0.362722587	0.0881955	0.238254828	0.5713545		10
4.23	-	0.007761204	-	-		10
4.23	-	3.52782	-	-		10
4.23	0.18085568	0.02469474	0.138075372	0.331116		10

ıins a particular pollutan

s/day)
ɔounds per day (lbs/day)

TABLE 3

	MAXIMUM LOADING		INDUSTRIAL			
Commercial Flow (MGD) (Qdom)	Allowable Headworks (lbs/day) (Lhw)	Domestic/ Commercial (lbs/day) (Ldom)	Allowable Loading (lbs/day) (Lind)	Local Limit (mg/l) (Cind)	Safety Factor (%) (SF)	
4.23	18932.26077	1446.4062	15592.6285	37392.3945		10
4.23	-	8466.768	-	-		10
4.23	-	8819.55	-	-		10
4.23	-	0.15169626	-	-		10
4.23	4.843310719	0.007408422	4.351571225	10.4354226		10
4.23	54.33059361	0.529173	48.36836125	115.991274		10
4.23	59.79095477	2.2225266	51.5893327	123.715426		10
4.23	73.90310559	0.033867072	66.47892796	159.42189		10
4.23	176.7089109	0.000917233	159.0371026	381.383939		10
4.23	3.875700326	0.10936242	3.378767873	8.10256085		10

4.23	-	0.0881955	-	-	10
4.23	35.6952	0.007761204	32.1179188	77.021388	10
4.23	20.39725714	3.52782	14.82971143	35.5628571	10
4.23	4.588071979	0.02469474	4.104570041	9.84309362	10

ıins a particular pollutan

s/day)

pounds per day (lbs/day)

TABLE 4

MAXIMUM LOADING INDUSTRIAL

Commercial Flow (MGD) (Qdom)	Allowable Headworks (lbs/day) (Lhw)	Domestic/ Commercial (lbs/day) (Ldom)	Allowable Loading (lbs/day) (Lind)	Local Limit (mg/l) (Cind)	Safety Factor (%) (SF)
4.23	-	1446.4062	-	-	10
4.23	-	8466.768	-	-	10
4.23	-	8819.55	-	-	10
4.23	-	0.15169626	-	-	10
4.23	-	0.007408422	-	-	10
4.23	-	0.529173	-	-	10
4.23	-	2.2225266	-	-	10
4.23	-	0.033867072	-	-	10
4.23	-	0.000917233	-	-	10
4.23	-	0.10936242	-	-	10
4.23	-	0.0881955	-	-	10
4.23	-	0.007761204	-	-	10
4.23	-	3.52782	-	-	10
4.23	-	0.02469474	-	-	10

ıins a particular pollutan

s/day)
pounds per day (lbs/day)

TABLE 5

			MAXIMUM LOADING		INDUSTRIAL
503 Sludge Criteria (mg/kg) (Cslcrit)	Domestic and Conc. (mg/l) (Cdom)	Commercial Flow (MGD) (Qdom)	Allowable Headworks (lbs/day) (Lhw)	Domestic/ Commercial (lbs/day) (Ldom)	Allowable Loading (lbs/day) (Lind)
	41	4.23	-	1446.4062	-
	240	4.23	-	8466.768	-
	250	4.23	-	8819.55	-
	0.0043	4.23	-	0.15169626	-
	0.00021	4.23	-	0.00740842	-
	0.015	4.23	-	0.529173	-
	0.063	4.23	-	2.2225266	-
	0.00096	4.23	-	0.03386707	-
	0.000026	4.23	-	0.00091723	-
	0.0031	4.23	-	0.10936242	-
	0.0025	4.23	-	0.0881955	-
	0.00022	4.23	-	0.0077612	-
	0.1	4.23	-	3.52782	-
	0.0007	4.23	-	0.02469474	-

ins a particular pollutant

s/day)
pounds per day (lbs/day)

TABLE 6

			MAXIMUM LOADING		INDUSTRIAL
State Sludge Criteria (mg/kg) (Cslcrit)	Domestic and Conc. (mg/l) (Cdom)	Commercial Flow (MGD) (Qdom)	Allowable Headworks (lbs/day) (Lhw)	Domestic/ Commercial (lbs/day) (Ldom)	Allowable Loading (lbs/day) (Lind)
	41	4.23	-	1446.4062	-
	240	4.23	-	8466.768	-
	250	4.23	-	8819.55	-
500	0.0043	4.23	213.7594595	0.15169626	192.2318173
100	0.00021	4.23	11.95329975	0.00740842	10.75056135
500	0.015	4.23	61.54941634	0.529173	54.86530171
2500	0.063	4.23	354.6681614	2.2225266	316.9788187
1000	0.00096	4.23	131.6355062	0.03386707	118.4380885
20	0.000026	4.23	2.043255113	0.00091723	1.838012369
2000	0.0031	4.23	-60.25980952	0.10936242	-54.34319099
100	0.0025	4.23	16.73883598	0.0881955	14.97675688
500	0.00022	4.23	56.02668241	0.0077612	50.41625296
5000	0.1	4.23	500.0484721	3.52782	446.5158049
	0.0007	4.23	-	0.02469474	-

ins a particular pollutant

s/day)
pounds per day (lbs/day)

TABLE 7

MAXIMUM LOADING INDUSTRIAL

Chronic WQS (mg/l) (Ccrit)	Domestic and Conc. (mg/l) (Cdom)	Commercial Flow (MGD) (Qdom)	Allowable Headworks (lbs/day) (Lhw)	Domestic/ Commercial (lbs/day) (Ldom)	Allowable Loading (lbs/day) (Lind)
	41	4.23	-	1446.4062	-
	240	4.23	-	8466.768	-
	250	4.23	-	8819.55	-
	0.0043	4.23	-	0.15169626	-
	0.00021	4.23	-	0.00740842	-
	0.015	4.23	-	0.529173	-
	0.063	4.23	-	2.2225266	-
	0.00096	4.23	-	0.03386707	-
	0.000026	4.23	-	0.00091723	-
	0.0031	4.23	-	0.10936242	-
	0.0025	4.23	-	0.0881955	-
	0.00022	4.23	-	0.0077612	-
	0.1	4.23	-	3.52782	-
	0.0007	4.23	-	0.02469474	-

ins a particular pollutan

s/day)
ounds per day (lbs/day)

TABLE 8
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Acute WQS (mg/l) (Ccrit)	Domestic and Conc. (mg/l) (Cdom)	Commercial Flow (MGD) (Qdom)	MAXIMUM LOADING Allowable Headworks (lbs/day) (Lhw)	Domestic/ Commercial (lbs/day) (Ldom)	INDUSTRIAL Allowable Loading (lbs/day) (Lind)
	41	4.23	-	1446.4062	-
	240	4.23	-	8466.768	-
	250	4.23	-	8819.55	-
	0.0043	4.23	-	0.15169626	-

0.00021	4.23	-	0.00740842	-
0.015	4.23	-	0.529173	-
0.063	4.23	-	2.2225266	-
0.00096	4.23	-	0.03386707	-
0.000026	4.23	-	0.00091723	-
0.0031	4.23	-	0.10936242	-
0.0025	4.23	-	0.0881955	-
0.00022	4.23	-	0.0077612	-
0.1	4.23	-	3.52782	-
0.0007	4.23	-	0.02469474	-

ins a particular pollutan

s/day)
pounds per day (lbs/day)

TABLE 9
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		MAXIMUM LOADING		INDUSTRIAL	
Domestic and Conc. (mg/l) (Cdom)	Commercial Flow (MGD) (Qdom)	Allowable Headworks (lbs/day) (Lhw)	Domestic/ Commercial (lbs/day) (Ldom)	Allowable Loading (lbs/day) (Lind)	Local Limit (mg/l) (Cind)
41	4.23	82.88198758	1446.4062	-1371.8124	-3289.718012
240	4.23	-	8466.768	-	-
250	4.23	-	8819.55	-	-
0.0043	4.23	1.202162162	0.15169626	0.93024969	2.230814595
0.00021	4.23	4.201511335	0.007408422	3.77395178	9.050244076
0.015	4.23	23.79766537	0.529173	20.8887258	50.0928677
0.063	4.23	9.97309417	2.2225266	6.75325815	16.19486368
0.00096	4.23	78.65742025	0.033867072	70.7578112	169.6830004
0.000026	4.23	-	0.000917233	-	-
0.0031	4.23	-0.52952381	0.10936242	-0.5859338	-1.405117143
0.0025	4.23	-	0.0881955	-	-
0.00022	4.23	2.560094451	0.007761204	2.2963238	5.506771707

0.1	4.23	70.30558483	3.52782	59.7472063	143.2786723
0.0007	4.23	0.6672	0.02469474	0.57578526	1.38078

ıins a particular pollutant

s/day)
pounds per day (lbs/day)

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Local Limit (mg/l) (Cind)	Safety Factor (%) (SF)
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10

Local Limit (mg/l) (Cind)	Safety Factor (%) (SF)
-	10
-	10
-	10
460.9875714	10
25.78072266	10
131.5714669	10
760.141052	10
284.0241932	10
4.407703522	10
-130.3194029	10
35.91548413	10
120.9022853	10
1070.781307	10
-	10

Local Limit (mg/l) (Cind)	Safety Factor (%) (SF)
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10

Local Limit (mg/l) (Cind)	Safety Factor (%) (SF)
-	10
-	10
-	10
-	10

-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10
-	10

Safety Factor (%) (SF)
10
10
10
10
10
10
10
10
10
10
10
10

10
10