Pretreatment Program
Local Limits Development
Technical Memorandum

Prepared for
City of Grants Pass

January 2013

Prepared by
Parametrix

Pretreatment Program Local Limits Development Technical Memorandum

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CERTIFICATION

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a professional engineer licensed to practice as such, is affixed below.

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1. INTRODUCTION

The City of Grants Pass, Oregon, currently maintains an Industrial Pretreatment Program regulating the discharge of pollutants from the industrial facilities, or industrial users (IUs), served by the City's sanitary collections system. The City requires industries to pretreat process wastewater to remove excessive pollutant loads. Facilities are regulated by City-issued permits which include maximum pollutant levels, or local limits, governing what IUs are allowed to discharge. This ensures that the Grants Pass Water Restoration Plant (WRP) processes are protected against inhibition, WRP workers are protected from exposure to hazardous materials, the Rogue River (receiving stream) is protected from excessive toxic pollutant concentrations, and that the biosolids may be reused beneficially.

In October 2006, the Oregon Department of Environmental Quality (DEQ) conducted an audit of the City of Grants Pass's Industrial Pretreatment Program. Results of this audit required, among other things, that the City update sections of the pretreatment program including the local limits. Because the current local limits were established as part of the original pretreatment program in 1996, the local limits need to be recalculated based on current data. This technical memorandum explains the methodology used to develop the maximum allowable headworks loading (MAHL) for various wastewater pollutants and associated local limits for IUs in the City of Grants Pass.

2. BACKGROUND

2.1 WATER RESTORATION PLANT DESCRIPTION

The WRP provides primary and secondary treatment of wastewater for an annual average flow of 5 million gallons per day (MGD). Clarifiers provide primary treatment and secondary treatment is provided using an activated sludge process (aeration basins and secondary clarifiers). Secondary effluent is disinfected with ultraviolet (UV) radiation prior to discharge to the Rogue River outfall. The outfall diffuser is located at the end of a 325-foot-long concrete-coated steel pipeline extending from the UV disinfection chamber to the Rogue River. Effluent is discharged to the river through 12 diffuser port risers with check valves, extending from the pipeline and through the riverbed.

Sludge from the treatment unit is sent to a digester prior to dewatering and disposal. Dewatered sludge generated at the WRP currently is delivered to the City-owned and operated JO-GRO™ Co-composting facility where it is mixed with yard debris collected throughout the city. Once the compost has maintained the required temperature for the required duration, the compost blend is then sold to the public as a soil amendment.

2.2 EXISTING LOCAL LIMITS

The existing local limits were established in 1996 when the City's pretreatment program was initiated. The pollutants and associated maximum daily limits include the following:

- Arsenic 1.94 mg/L
- Cadmium 0.76 mg/L
- Chromium 2.77 mg/L
- Copper 2.52 mg/L
- Cyanide 2.24 mg/L

- Lead 5.24 mg/L
- Mercury 0.25 mg/L
- Molybdenum 1.63 mg/L
- Nickel 3.98 mg/L
- Selenium 4.28 mg/L
- Silver 1.0 mg/L
- Zinc 2.61 mg/L

These local limits were included in the municipal code (Code) and were applied to all industries regardless of the industry type. Numerical local limits for biological oxygen demand (BOD), total suspended solids (TSS), oil and grease, benzene, beryllium, and total phenols were not developed despite being present in the headworks waste stream at the time of development. Reasons for this included that either the pollutant was present in such low concentrations as to not be considered a threat (benzene, beryllium, and total phenols), that the WRP had adequate capacity to treat for the pollutant (BOD and TSS), or that other measures were being put in place to address loading (best management practices [BMPs] for oils and grease).

2.3 REGULATORY WATER QUALITY AND SLUDGE STANDARDS

The National Pollutant Discharge Elimination System (NPDES) permit issued to WRP contains discharge limits for a limited number of parameters including BOD, TSS, pH, ammonia, and temperature. For many of the pollutants of concern with respect to industrial practices, the permit requires that the permitted facility not discharge wastes "…which violate Water Quality Standards as adopted in OAR 340-41-0365…" The OAR references tables of water quality criteria levels for various pollutants based on acute and chronic toxicity to aquatic species (both fresh and salt water) and for human consumption. The three tables that establish the water quality criteria are as follows (see Attachment A):

- Table 20 lists water quality criteria for aquatic species as established by EPA.
- Table 33A lists water quality criteria for aquatic species used by DEQ for permitting. These criteria include more compounds than Table 20 and have tighter standards for some of the parameters listed in Table 20.
- Table 40 lists water quality criteria for human health as approved by EPA in October 2011.

Because the sludge is ultimately disposed of on land as a composted soil amendment, the City has specific pollutant concentrations that cannot be exceeded (Tables 1 and 3 of 40 CFR 503.13).

3. SAMPLING AND ANALYSIS PLAN SUMMARY

In order to have sound, technically based local limits, DEQ required that the City develop a sampling and analysis plan (SAP) that would be continuously implemented. Results from the first 3 years were used to quantify pollutant concentrations in the following areas:

1. WRP headworks, effluent and internal unit operations to determine the removal efficiencies of each pollutant of concern throughout the plant.
2. Rogue River upstream of WRP outfall to determine the background concentrations of pollutants in the receiving stream.
3. IU process wastewater discharge points to determine the current discharge concentrations coming from IUs.
4. Locations within the collection system not affected by IUs to determine background concentrations of pollutants from unregulated residential and commercial zones.

Pollutants targeted for monitoring included EPA's 15 National Pollutants of Concern as well as aluminum, antimony, beryllium, fluoride, iron, and thallium. These 21 pollutants are collectively called pollutants of concern, or POCs, for the purpose of this report. Organic priority pollutants (OPPs) were also monitored at select locations and tested using EPA Methods 608, 624 and 625. The SAP was approved by DEQ on April 16, 2008, and implemented in July 2008. This report analyzes the monitoring results through November 2011 for the purpose of establishing local limits.

3.1 MONITORING RESULTS

Summaries of the sampling at various locations are included in Attachment C. Sampling results from each monitoring event at the various liquid and solid stream sampling are supplied in Attachment D. The results were tabulated in a spreadsheet by the City, then sent to Parametrix for analysis. Table 1 below shows the number of samples collected for each of the sampling points.

Table 1. Sampling Frequency for Pollutants

Location	Parameters	# of Samples
Liquid Stream		
Collection System	POCs	14
	OPPs	4
WRP Influent and Effluent	POCs	7
	OPPs	7
Primary Clarifier Influent and Effluent	POCs	7
	OPPs	4
Hauled JO-GRO Drainage	POCs	5
Hauled Landfill Leachate	POCs	5
Clearwater Technologies (IU)	POCs	20[a,c,d]
Riverside Readymix (IU)	POCs	8[c,d]
Metal Finishers, Inc. (IU)	POCs	22[a,c]
Timber Products (IU)	POCs	20[a,b,c]

Location	Parameters	# of Samples
Solids Stream		
Gravity Thickener	POCs	17
Gravity Belt Thickener	POCs	17
Digester #1	POCs	17
Belt Press	POCs	15
JO-GRO Compost	POCs	17
Receiving Stream		
Rogue River (background)	POCs	14

[a] Samples include both self-reporting by IU and City monitoring samples

[b] 48 additional samples for zinc monitoring done by City and IU combined.

[c] Composite samples only done for approved pollutants. Grab samples collected for other pollutants.

[D] Seasonal contributors to the WRP

3.1.1 Data Quality

The POC data presented in Attachment D show results of each sampling event with color coding. Cells highlighted in blue represent instances where no analytical test was performed on the pollutant, or the results were considered invalid by the laboratory. Cells highlighted in green represent instances where the result was below the minimum detection level (MDL). In these cases, a surrogate value of half the MDL was used for analysis (as outlined in Appendix Q of the EPA Local Limits Development Guidance [2004]), except for background concentrations of mercury in the Rogue River. Due to changes in the precision of the testing for mercury, the first two "Non Detect" samples from the Rogue River were not included in the averages (July and August 2008, see Attachment D-8), as these would have resulted in an overly high background concentration for mercury.

Attachments D-2 and D-5 contain OPP testing results. Only those OPPs that showed at least one positive detection are included in these tables. Parameters highlighted in orange in Attachment D-5 show the OPPs detected in the collection system that were also detected in the WRP.

3.1.2 Conventional Pollutants

Conventional pollutants include BOD, TSS, nitrogen, and oils and grease. While the WRP is approaching treatment capacity on most of these pollutants, the total flow coming from the currently permitted IUs equates to approximately 0.03 MGD (see Attachment C-4) or 0.6 percent of the entire contributing flow to the WRP. Furthermore, these IUs are not industries that produce appreciable quantities of these pollutants. For these reasons, no local limits are established in this report for conventional pollutants. Local limits for conventional pollutants will need to be reevaluated should an industry with high conventional pollutant loading (e.g. brewery, slaughterhouse or other food processing industry) connect to the City's collection system.

4. MAXIMUM ALLOWABLE HEADWORKS DEVELOPMENT

4.1 REMOVAL EFFICIENCIES

Removal efficiencies for the liquid stream pollutants were calculated through the treatment plant as a whole and through primary treatment (clarifier) for all monitored pollutants. The methodology used to calculate removal efficiencies was the Mean Removal Efficiency method (described in Chapter 5 of EPA Local Limits Guidance) as shown in Equation 1.

Equation 1: Mean Removal Efficiency

$$\%Removal = \frac{Avg.Influent_{Conc.} - Avg.Effluent_{Conc.}}{Avg.Influent_{Conc.}}$$

This method was chosen due its ability to dampen daily variability in the removal efficiency for the limited number of samples available. Attachment C-1 shows the average influent and effluent concentrations for the overall plant and for the primary treatment.

4.1.1 Negative Removal Efficiencies

During the process of calculating removal efficiencies, there were several instances where the removal efficiency values were negative for a particular pollutant.

In the case of cyanide, the average influent concentration was lower than the effluent concentration for both the overall WRP and for primary treatment. This resulted in a negative average removal efficiency of 129 percent for the overall treatment plant and negative 12 percent for the primary treatment process. Review of the sampling results in Attachment D-1 revealed that the cyanide results at the effluent for August 18 and 19, 2009, were an order of magnitude higher than any other sample results in the data set and were in violation of the NPDES permit. This indicates that these results may be inaccurate. Therefore, the City conducted follow-up testing of the effluent for a period of 6 months at the direction of DEQ. Results of this follow-up testing showed no cyanide concentrations as high as those in August 2009 (see Attachment E). Therefore, the decision was made to not include the August 18 and 19, 2009, results in the calculation of overall WRP removal efficiency. In the case of the negative removal efficiency for cyanide calculated through primary treatment, there were no indications of any one or two sampling events skewing the results. So, the decision was made to keep the negative removal efficiency through primary treatment as a conservative method of calculating the allowable headworks loading (AHL).

In addition to cyanide, there were three parameters that showed negative removal efficiencies. Antimony, di-n-butyl phthalate and phenol showed negative removal of 5 percent, 1 percent, and 5 percent, respectively, through primary treatment, but showed positive removals for the WRP overall. 1,2,4-trichlorobenzene showed a negative removal efficiency of 27 percent through the WRP due to the fact that there was only one positive detect recorded on August 19, 2008, in the WRP effluent and no positive detections in the influent. In all three cases, the negative removal efficiencies were kept to provide a conservative method of calculating the AHL.

4.2 ALLOWABLE HEADWORKS LOADING CALCULATIONS

AHL calculations were performed for each applicable criterion including water quality, sludge quality, and unit operation inhibition including the activated sludge and anaerobic

digester. Currently, the WRP is not regulated as an air pollution source and has no required air emission standards. Therefore, air quality–based AHLs were not developed in this analysis.

4.2.1 Water Quality–Based AHLs

The NPDES permit issued to the WRP does not specifically list pollutant concentrations for many of the POCs for the industrial pretreatment program. Instead, the permit requires that "No waste shall be discharged or activities conducted that cause or contribute to a violation of water quality standards…" except for in the defined mixing zone. Attachment B-1 shows the applicable criteria for all pollutants and the associated sources from Attachment A. This table is used as the basis for determining AHLs for water quality.

For those pollutants that are hardness-dependent (including cadmium, chromium, copper, lead, nickel, silver, and zinc), the aquatic life acute and chronic freshwater criteria were altered to reflect the actual hardness of the Rogue River (see Table C-6). This was performed using the guidance and formulas provided at the end of Table 40 in Attachment A-3.

Equation 2 shows how AHLs were calculated for water quality.

Equation 2: Water Quality–Based AHL Formula (with Receiving Stream Data)[1]

$$AHL_{WQ} = \frac{8.34\left[C_{WQ}\left(Q_{Stm} + Q_{WRP}\right) - \left(C_{Stm} * Q_{Stm}\right)\right]}{1 - R_{WRP}}$$

Where:

- AHL_{WQ} = Allowable headworks loading for water quality criteria (lbs/day)
- C_{WQ} = Pollutant water quality concentration (mg/L)
- Q_{Stm} = Upstream flow rate (MGD)
- Q_{WRP} = WRP average flow rate (MGD)
- C_{Stm} = Pollutant background stream concentration (mg/L)
- R_{WRP} = Removal efficiency of pollutant through WRP (as decimal)

The upstream flow rate, Q_{Stm}, depends on the pollutant parameter being used in the equation. For acute aquatic criteria, Q_{Stm} is equal to the one-day low flow with a 10-year return frequency (1Q10). For chronic criteria and human health criteria, Q_{Stm} is equal to the 7-consecutive-day average low flow with a 10-year return frequency (7Q10). Both the 1Q10 and 7Q10 were obtained from NPDES background data provided in the most recent permit application to DEQ with the values shown in Attachment C-6. Note that dilution ratios from the mixing model study were not used in the water quality AHL calculations.

Equation 2 is only applicable for pollutants where the background concentration in the river is known. Because the concentrations of OPPs were not measured for the Rogue River, Equation 3[2] was used to calculate AHLs for these parameters.

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[1] Equation presented in section 5.2.2 of the EPA Local Limits Guidance.

[2] Note that the parameter definitions are the same as for Equation 2.

Equation 3: Water Quality based AHL Formula (without Receiving Stream Data)[3]

$$AHL_{WQ} = \frac{8.34 * C_{WQ} * Q_{WRP}}{1 - R_{WRP}}$$

Where:

- AHL_{WQ} = Allowable headworks loading for water quality criteria (lbs/day)
- C_{WQ} = Pollutant water quality concentration (mg/L)
- Q_{WRP} = WRP average flow rate (MGD)
- R_{WRP} = Removal efficiency of pollutant through WRP (as decimal)

4.2.2 Inhibition-Based AHLs

The WRP has not, to date, had any reported significant disruptions of biological processes (or inhibition) resulting from pollutant levels in the wastewater or sludge. Nevertheless, inhibition-based AHLs are developed in this report to prevent any future loadings from impacting treatment operations. Since the WRP has not experienced past inhibition, there are no site-specific inhibition values to use for AHL calculations. Therefore, literature values from Attachment G of the EPA Local Limits Development Guidance were used for the activated sludge and anaerobic digestion processes. Whenever a range of values is presented in the inhibition literature, the lowest concentration is used for the calculations as a conservative approach.

Equation 4 is used to calculate the AHL for secondary treatment inhibition of the activated sludge process.

Equation 4: AHL for Secondary Treatment Inhibition[4]

$$AHL_{Sec} = \frac{8.34 * C_{Inhib2} * Q_{WRP}}{1 - R_{Prim}}$$

Where:

- AHL_{Sec} = Allowable headworks loading for activated sludge inhibition (lbs/day)
- C_{Inhib2} = Concentration of pollutant for secondary treatment inhibition (mg/L)
- Q_{WRP} = WRP average flow rate (MGD)
- R_{Prim} = Removal efficiency of pollutant through primary treatment (as decimal)

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[3] Equation presented in section 5.2.2 of the EPA Local Limits Guidance. Note that the water quality concentration criteria are used in place of an NPDES permit limit.

[4] Equation presented in section 5.2.4 of the EPA Local Limits Guidance.

Equation 5 is used to calculate the AHL for inhibition of the anaerobic sludge digester.

Equation 5: AHL for Sludge Digester Inhibition[4]

$$AHL_{Dgstr} = \frac{8.34 * C_{Dgstinhib} * Q_{dgstr}}{R_{WRP}}$$

Where:

- AHL_{Dgstr} = Allowable headworks loading for anaerobic digester (lbs/day)
- $C_{Dgstinhib}$ = Concentration of pollutant for anaerobic digester inhibition (mg/L)
- Q_{dgstr} = Flow to the digester (MGD)
- R_{WRP} = Removal efficiency of pollutant through WRP (as decimal)

The resulting AHL values for each pollutant are shown in Attachment B-2.

4.2.3 Sludge Quality–Based AHLs

The City currently disposes of sludge from the WRP by co-composting with green waste to produce a soil amendment that is sold to the public. Because this is a form of land application, there are limitations on concentrations of certain pollutants per 40 CFR 503.13. Of the four concentration tables listed in this CFR, Table 1 (Ceiling Limits) and Table 3 ("Clean Sludge" Pollutant Concentrations) are applicable to the City's composting process. Attachment B-3 shows these concentrations along with the associated AHLs calculated using Equation 6.

Equation 6: Allowable Headworks Loading Formula for Sludge Quality[5]

$$AHL_{Sldg} = \frac{C_{Crit} * Q_{Sldg} * 0.0022}{R_{WRP}}$$

Where:

- AHL_{Sldg} = Allowable headworks loading for sludge quality (lbs/day)
- C_{Crit} = Concentration criteria for sludge quality (mg/kg)
- Q_{Sldg} = Flow of sludge to compost facility in (metric tons/day)
- 0.0022 = Conversion factor
- R_{WRP} = Removal efficiency of pollutant through WRP (as decimal)

4.3 MAXIMUM ALLOWABLE HEADWORKS LOADING

The MAHL for any given pollutant is the lowest AHL value from the three criteria tables (water quality, inhibition, and sludge quality). Table 2 shows the AHL from each criterion and the MAHL. This table also shows the relative loading currently occurring at the headworks divided by the MAHL.

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[5] Equation presented in Attachment T of the EPA Local Limits Guidance.

Table 2. Determination of Maximum Allowable Headworks Loading and Ratio Compared to Actual Loading

	lbs/day				lbs/day	
	Average Loading at Headworks	Water Quality AHL	Inhibition AHL	Sludge Quality AHL	**MAHL**	**Average Loading vs. MAHL**
PARAMETER (POCs)						**%**
Aluminum	22.171					
Antimony	0.053	41.44			**41.44**	0.1%
Arsenic	0.031	10.06	3.92	0.89	**0.89**	3.4%
Beryllium	0.001					
Cadmium	0.007	11.48	12.52	0.22	**0.22**	3.2%
Chromium	0.087	217.09	73.15		**73.15**	0.1%
Copper	1.485	88.78	24.66	8.17	**8.17**	18.2%
Cyanide	0.089	21.28	3.73		**3.73**	2.4%
Fluoride	31.348					
Iron	22.929	25938.08			**25938.08**	0.1%
Lead	0.097	22.19	96.40	1.56	**1.56**	6.2%
Mercury	0.006	0.18	14.41	0.10	**0.10**	6.7%
Molybdenum	0.080			1.13	**1.13**	7.1%
Nickel	0.138	533.83	12.78	4.74	**4.74**	2.9%
Selenium	0.024	342.03		0.92	**0.92**	2.7%
Silver	0.024	4.68	7.37		**4.68**	0.5%
Thallium	0.001	0.02			**0.02**	2.7%
Zinc	5.196	487.01	17.48	18.27	**17.48**	29.7%
PARAMETER (OPPs)						
Bis(2-ethylhexyl)phthalate	328.239	0.08			**0.08**	388.1%
Butyl benzyl phthalate	31.871	40.37			**40.37**	0.1%
Diethyl phthalate	118.845	2155.42			**2155.42**	0.0%
Di-n-butyl phthalate	28.398	49.49			**49.49**	0.1%
Di-n-octyl phthalate	25.417					
Hexachlorocyclopentadiene	13.701	1.39			**1.39**	1.0%
2,4-Dichlorophenol	11.676	0.96	19458.93		**0.96**	1.2%
Phenol	88.940	3169.09	1980.32		**1980.32**	0.0%
2-Methylphenol (Cresol)	113.186					
4-Methylphenol (Cresol)	288.723					
Benzene	18.783	0.14	19458.93		**0.14**	13.9%
Bromodichloromethane	7.029					
1,4-Dichlorobenzene	25.139	1.18	1.62		**1.18**	2.1%
Chloroform	125.060	28.31	0.81		**0.81**	15.4%
Ethylbenzene	13.922	42.03	27446.75		**42.03**	0.0%
Tetrachloroethene	6.370	0.02	23.82		**0.02**	36.9%
Toluene	124.391	257.94	18659.70		**257.94**	0.0%
1,2,4-Trichlorobenzene	4.879	0.21			**0.21**	2.3%
Xylenes	69.063	0.00				

Color Coding Key:

No AHL Calculated	*Local Limits Recommended*	*Local Limits Not Recommended*	*Requires Further Sampling at IUs*

Note that for some pollutants, AHLs were not developed because there are no standards set for any of the criteria.

The column comparing the average headworks loading to MAHL uses different colors. Blue indicates refer parameters where local limits are suggested because either the actual loading was greater than 1 percent of the MAHL or because the parameter already has set local limits in the current permit (i.e., chromium and silver). Green parameters were present in the headworks loading, but at such low concentrations (<1 percent of Actual Loading/MAHL) that local limits are not suggested. Orange represents parameters where more sampling and analysis is required. These are discussed further in the next section.

Local limits are not suggested for 2,4-dichlorophenol or 1,2,4-trichlorobenzene despite Table 2 showing a loading of greater than 1 percent of the MAHL. There was one detection for each of these compounds in the OPP sampling of the WRP. In addition, no detections were made within the collection system for either. Therefore, the loading calculation is based solely on the surrogate values of half the MDL. Should future testing show more detections of these compounds in the WRP effluent at greater concentrations or frequencies, then a local limits evaluation should be conducted.

4.3.1 Parameters Requiring Further Research

Orange cells in Table 2 indicate parameters where not enough data are currently available to determine if local limits would be required. Reevaluations of local limits for these parameters will be conducted annually by the City during the next NPDES permit renewal unless some changes to the WRP or IU discharges occur before that time.

4.3.1.1 Bis(2-ethylhexyl)phthalate

This compound, also known as DEHP, was detected in almost all the collection system samples, as well as the WRP influent and through the primary clarifier. There were six detects found in the WRP effluent results and the overall removal efficiency of the WRP was 92 percent. The EPA lists the industrial source of this compound as the production of flexible plastics and it is present in most plastic products. The MDL for this pollutant (0.80 mg/L) is higher than the lowest water quality criteria of 0.2 mg/L. According to the U.S. Department of Health and Human Services, the accuracy and precision of testing DEHP below 2 mg/L is limited due to the presence of the compound in most laboratory equipment.

The analysis shows that the actual headworks loading is approximately 388 percent of the MAHL, so no local pollutant limit can be developed at this time. Because the average concentration in the collection system was approximately twice that of the average headworks loading, it appears that this compound is not an industry-specific pollutant, but further testing of the IUs will be required to validate this observation.

4.3.1.2 Benzene

This compound was detected twice at the WRP headworks in 2008 and was otherwise below detection limits for all sampling elsewhere in the system. Benzene is a compound formed from both natural processes and human activities and is widely used in industries to make chemicals for the formation of plastics, synthetic fibers, lubricants, dyes, detergents, drugs and pesticides. Because this is a highly volatile compound and does not partition well in water, it is likely that this compound would not stay in solution through secondary treatment. Despite this, local limits will be developed for this compound and reassessed during the next local limits assessment.

4.3.1.3 1,4-Dichlorobenzene

1,4-dichlorobenzene was present in monitoring at the headworks for all sampling events; however, it was only present in a few of the tests within the collection system. Furthermore, the average concentration at the headworks is slightly higher than that in the background collection system. This suggests that IUs are contributing to these concentrations, but further testing of the IUs would be needed to verify this. Common uses of this chemical include the control of fungus, moths, and general disinfection. Because the actual loading is only 2.1 percent of the MAHL, this pollutant is not likely to cause violations by the WRP. Nevertheless, local limits will be developed for this pollutant and reassessed during the next round of local limit evaluations.

4.3.1.4 Chloroform

Chloroform represents the fourth highest actual loading to the MAHL percentage in Table 2. It was measured in both the collection system and the WRP at every sampling event, with the headworks showing slightly higher concentrations than in the collection system. While there are some potential industrial sources of chloroform, the most likely source of this chemical in the waste stream is as a byproduct of the City's potable water disinfection process. As with 1,4-dichlorobenzene, the City will set local limits for this compound and reassess IU monitoring results in the next iteration of setting local limits to determine if limits for chloroform are needed.

4.3.1.5 Tetrachloroethene

Tetrachloroethene, (a.k.a. PERC) was observed at levels above the detection limits at the headworks sporadically throughout the sampling period and detected once in the WRP effluent. This compound is used in dry cleaning, degreasing metal parts, and manufacturing chemicals. It is also found in some consumer products including stain removers, water repellants, and brake cleaners. It was not detected within the collections system suggesting the source is commercial/industrial. Local limits will be set for this compound to help identify sources within the collection system.

4.4 MAXIMUM ALLOWABLE INDUSTRIAL LOADING

Local limits are developed by multiplying MAHL times a safety factor then subtracting the uncontrolled loading (or residential and unregulated commercial loading) and unregulated hauled waste loading (from landfill leachate and JO-GRO pond) as well as any loading that the City would like to reserve for future industries that may move to the area (see Equation 7).

Equation 7: Maximum Allowable Industrial Loading Formula[6]

$$MAIL = MAHL(1 - SF) - (L_{UNC} + HW + GA)$$

Where:

- $MAIL$ = Maximum allowable industrial loading (lbs/day)
- $MAHL$ = Maximum allowable headworks loading (lbs/day)
- SF = Safety factor (decimal)

[6] Equation presented in section 6.2 of the EPA Local Limits Guidance.

- L_{UNC} = Loading from uncontrolled sources or background (lbs/day)
- HW = Loading from hauled waste (lbs/day)
- GA = Growth allowance (lbs/day)

The result of this calculation is the total maximum industrial loading for all current industries in pounds per day. Table 3 shows these calculations for those pollutants with actual loading to maximum headworks loading ratios greater than 1.0 percent (see Table 2) with the exception of bis(2-ethylhexyl)phthalate, 2,4-dichlorophenol and 1,2,4-trichlorobenzene.

Table 3. Determination of Maximum Allowable Industrial Loading

	lbs/day				
	Uncontrolled Loading	Unregulated Hauled Waste	Future Growth Allocation	Safety Factor	Max. Industrial Loading
Parameter (POCs)					
Arsenic	0.0276	0.00053	0.298	25	**0.339**
Cadmium	0.0663	0.00002	0.018	25	**0.078**
Chromium	0.0659	0.00031	22.744	25	**32.050**
Copper	1.9543	0.00283	2.120	25	**2.053**
Cyanide	0.0740	0.00013	0.209	25	**2.517**
Lead	0.0483	0.00036	0.553	25	**0.569**
Mercury	0.0245	0.00001	0.026	25	**0.021**
Molybdenum	0.0310	0.00041	0.443	25	**0.374**
Nickel	0.1449	0.00119	1.655	25	**1.757**
Selenium	0.0213	0.00011	0.323	25	**0.346**
Silver	0.0052	0.00007	1.393	25	**2.112**
Thallium	0.0014	0.00175	0.007	25	**0.007**
Zinc	5.0691	0.01168	3.243	25	**4.785**
Parameter (OPPs)					
Benzene	Not Detected	Unknown	0.051	25	**0.051**
1,4-Dichlorobenzene	0.0078	Unknown	0.492	25	**0.383**
Chloroform	0.1630	Unknown	0.171	25	**0.274**
Tetrachloroethene	Not Detected	Unknown	0.006	25	**0.007**

The future growth allocation for all pollutants was taken at 50 percent of the MAHL minus uncontrolled and unregulated loading. While the EPA guidance recommends a minimum safety factor of 10 percent, 25 percent was used for all parameters because of the limited amount of technical data used to determine the MAHLs (i.e., less than 5 years of detailed sampling results).

5. LOCAL LIMITS DISTRIBUTION

The preferred method for distributing local limits is uniformly allocating all pollutants to each of the IUs. Equation 8 shows the formula used to determine this distribution.

Equation 8: Uniform Concentration Limit

$$C_{Lim} = \frac{MAIL}{Q_{CONT} \times 8.34}$$

Where:

- C_{Lim} = Concentration limit for a given industrial user (mg/L)
- $MAIL$ = Maximum allowable industrial loading (lbs/day)
- Q_{Cont} = Total flow rate for all industrial users (MGD)

Table 4 shows the results of these calculations compared to the original local limits and the suggested revised local limits.

Table 4. Suggested Revised Local Limits

	mg/L		
	Current Local Limits	**Uniform Allocation**	**Suggested Revised Local Limits**
Parameter (POCs)			
Arsenic	1.94	1.36	**1.36**
Cadmium	0.76	0.31	**0.31**
Chromium	2.77	128.10	**2.77**
Copper	2.52	8.20	**2.52**
Cyanide	2.24	10.06	**2.24**
Lead	5.24	2.27	**2.27**
Mercury	0.25	0.08	**0.08**
Molybdenum	1.63	1.50	**1.50**
Nickel	3.98	7.02	**3.98**
Selenium	4.28	1.38	**1.38**
Silver	1	8.44	**1.00**
Thallium	-	0.03	**0.03**
Zinc	2.61	19.13	**2.61**
Parameter (OPPs)			
Benzene	-	0.20	**0.20**
1,4-Dichlorobenzene	-	1.53	**1.53**
Chloroform	-	1.10	**1.10**
Tetrachloroethene	-	0.03	**0.03**

According to the City's records, there are no industries that have trouble meeting any of the current local limits when all site pretreatment processes and BMPs are maintained in good working condition. Therefore, the suggested local limits are not changed for parameters where the new uniform allocations are higher than the current local limits. While some of the

local limits for individual IUs will become more stringent, the new local limits should be easily achievable for the industries based on comparisons of the new local limits with the historic monitoring results. In most cases average loading from the IUs is less than 10 percent of the local limit for a given parameter.

6. ADDITIONAL RECOMMENDATIONS

6.1 MUNICIPAL CODE MODIFICATIONS

The City will require an update to the Code to reflect the changes to local limits. Specifically, the City suggests removing specific numerical limits and pollutants from section 8.50 of the Code and including general language stating that individual limits will be placed on IU permits as directed by the superintendent. This will allow the City to conduct updates to the local limits without having to modify the Code and give the City flexibility in issuing local limits on a case-by-case basis in the future.

6.2 SAMPLING AND ANALYSIS PLAN MODIFICATIONS

The results of the MAHL calculations conducted thus far suggest that there are multiple pollutants that require no further sampling either because there are not applicable criteria to develop local limits or because the concentrations are low. These include aluminum, antimony, beryllium, and fluoride. It is recommended that routine monitoring for these pollutants be discontinued unless a new industry starts discharging these to the collection system.

None of the currently permitted industrial users are required to test for OPPs. With the addition of benzene, 1,4-dichlorobenzene, chloroform and tetrachloroethene to the local limits, the City will start collecting OPP samples annually during IU monitoring events. Then, the City will have the ability to issue local limits in permits to any IUs contributing these pollutants to the collection system and waive these local limits in permits for non-contributors. This additional sampling will also help to clarify whether the IUs are contributing to the concentrations of bis(2-ethylhexyl)phthalate, 2,4-dichlorophenol, and 1,2,4-trichlorobenzene observed in the monitoring data for future local limits evaluation.

7. REFERENCES

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Attachment A

Water Quality Criteria Tables

TABLE 20

AQUATIC LIFE WATER QUALITY CRITERIA SUMMARY[1]

The concentration for each compound listed in Table 20 is a criterion not to be exceeded in waters of the state in order to protect aquatic life. All values are expressed as micrograms per liter (µg/L) except where noted. Compounds are listed in alphabetical order with the corresponding designations as to whether EPA has identified it as a priority pollutant and a carcinogen, aquatic life freshwater acute and chronic criteria, aquatic life marine acute and chronic criteria. The acute criteria refer to the average concentration for one (1) hour and the chronic criteria refer to the average concentration for 96 hours (4 days), and that these criteria should not be exceeded more than once every three (3) years.

Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Acenapthene	Y				
Acrolein	Y				
Acrylonitrile	Y				
Aldrin	Y	3		1.3	
Alkalinity	N		20,000		
Ammonia	N	CRITERIA ARE pH AND TEMPERATURE DEPENDENT—SEE DOCUMENT USEPA JANUARY 1985 (Fresh Water) CRITERIA ARE pH AND TEMPERATURE DEPENDENT—SEE DOCUMENT USEPA APRIL 1989 (Marine Water)			
Antimony	Y				
Arsenic	Y				
Arsenic (Pent)	Y				

Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Arsenic (Tri)	Y	360	190	69	36
Asbestos	Y				
Barium	N				
Benzene	Y				
Benzidine	Y				
Beryllium	Y				
BHC	Y				
Cadmium	Y	3.9+	1.1+	43	9.3
Carbon Tetrachloride	Y				
Chlordane	Y	2.4	0.0043	0.09	0.004
Chloride	N	860 mg/L	230 mg/L		
Chlorinated Benzenes	Y				
Chlorinated Naphthalenes	Y				
Chlorine	N	19	11	13	7.5
Chloroalkyl Ethers	Y				
Chloroethyl Ether (Bis-2)	Y				
Chloroform	Y				
Chloroisopropyl Ether (Bis-2)	Y				
Chloromethyl Ether (Bis)	N				
Chlorophenol 2	Y				
Chlorophenol 4	N				

Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Chlorophenoxy Herbicides (2,4,5,-Tp)	N				
Chlorophenoxy Herbicides (2,4-D)	N				
Chlorpyrifos	N	0.083	0.041	0.011	0.0056
Chloro-4 Methyl-3 Phenol	N				
Chromium (Hex)	Y	16	11	1,100	50
Chromium (Tri)	N	1,700.+	210.+		
Copper	Y	18.+	12.+	2.9	2.9
Cyanide	Y	22	5.2	1	1
DDT	Y	1.1	0.001	0.13	0.001
(TDE) DDT Metabolite	Y				
(DDE) DDT Metabolite	Y				
Demeton	Y		0.1		0.1
Dibutylphthalate	Y				
Dichlorobenzenes	Y				
Dichlorobenzidine	Y				
Dichloroethane 1,2	Y				
Dichloroethylenes	Y				
Dichlorophenol 2,4	N				
Dichloropropane	Y				
Dichloropropene	Y				
Dieldrin	Y	2.5	0.0019	0.71	0.0019

Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Diethylphthalate	Y				
Dimethyl Phenol 2,4	Y				
Dimethyl Phthalate	Y				
Dinitrotoluene 2,4	N				
Dinitrotoluene	Y				
Dinitrotoluene	N				
Dinitro-o-Cresol 2,4	Y				
Dioxin (2,3,7,8-Tcdd)	Y				
Diphenylhydrazine	Y				
Diphenylhydrazine 1,2	Y				
Di-2-Ethylhexyl Phthalate	Y				
Endosulfan	Y	0.22	0.056	0.034	0.0087
Endrin	Y	0.18	0.0023	0.037	0.0023
Ethylbenzene	Y				
Fluoranthene	Y				
Guthion	N		0.01		0.01
Haloethers	Y				
Halomethanes	Y				
Heptachlor	Y	0.52	0.0038	0.053	0.0036
Hexachloroethane	N				
Hexachlorobenzene	Y				

Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Hexachlorobutadiene	Y				
Hexachlorocyclohexane (Lindane)	Y	2	0.08	0.16	
Hexachlorocyclohexane-Alpha	Y				
Hexachlorocyclohexane-Beta	Y				
Hexachlorocyclohexane-Gama	Y				
Hexachlorocyclohexane-Technical	Y				
Hexachlorocyclopentadiene	Y				
Iron	N		1,000		
Isophorone	Y				
Lead	Y	82+	3.2+	140	5.6
Malathion	N		0.1		0.1
Manganese	N				
Mercury	Y	2.4	0.012	2.1	0.025
Methoxychlor	N		0.03		0.03
Mirex	N		0.001		0.001
Monochlorobenzene	Y				
Naphthalene	Y				
Nickel	Y	1,400+	160+	75	8.3
Nitrates	N				
Nitrobenzene	Y				
Nitrophenols	Y				

Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Nitrosamines	Y				
Nitrosodibutylamine N	Y				
Nitrosodiethylamine N	Y				
Nitrosodimethylamine N	Y				
Nitrosodiphenylamine N	Y				
Nitrosopyrrolidine N	Y				
Parathion	N	0.065	0.013		
PCB's	Y	2	0.014	10	0.03
Pentachlorinated Ethanes	N				
Pentachlorobenzene	N				
Pentachlorophenol	Y	***20	***13	13	
Phenol	Y				
Phosphorus Elemental	N				0.1
Phthalate Esters	Y				
Polynuclear Aromatic Hydrocarbons	Y				
Selenium	Y	260	35	410	54
Silver	Y	4.1+	0.12	2.3	
Sulfide Hydrogen Sulfide	N		2		2
Tetrachlorinated Ethanes	Y				
Tetrachlorobenzene 1,2,4,5	Y				
Tetrachloroethane 1,1,2,2	Y				

Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Tetrachloroethanes	Y				
Tetrachloroethylene	Y				
Tetrachlorophenol 2,3,5,6	Y				
Thallium	Y				
Toluene	Y				
Toxaphene	Y	0.73	0.0002	0.21	0.0002
Trichlorinated Ethanes	Y				
Trichloroethane 1,1,1	Y				
Trichloroethane 1,1,2	Y				
Trichloroethylene	Y				
Trichlorophenol 2,4,5	N				
Trichlorophenol 2,4,6	Y				
Vinyl Chloride	Y				
Zinc	Y	120+	110+	95	86

MEANING OF SYMBOLS:

g = grams

mg = milligrams

+ = Hardness Dependent Criteria (100 mg/L used).

The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. Criteria values for hardness may be calculated from the following formulae (CMC refers to Acute Criteria; CCC refers to Chronic Criteria):

$CMC = (\exp(m_A * [\ln(hardness)] + b_A)) * CF$

$CCC = (\exp(m_C * [\ln(hardness)] + b_C)) * CF$

Chemical	m_A	b_A	m_C	b_C
Cadmium	1.128	-3.828	0.7852	-3.49
Chromium III	0.819	3.688	0.819	1.561
Copper	0.9422	-1.464	0.8545	-1.465
Lead	1.273	-1.46	1.273	-4.705
Nickel	0.846	3.3612	0.846	1.1645
Silver	1.72	-6.52		
Zinc	0.8473	0.8604	0.8473	0.7614

ug = micrograms

* = Insufficient data to develop criteria; value presented is the L.O.E.L – Lower Observed Effect Level.

ng = nanograms

pg = picograms

*** = pH Dependent Criteria (7.8 pH used).

Y = Yes

N = No

1 = Values in Table 20 are applicable to all basin

TABLE 33A

Note: The Environmental Quality Commission adopted the following criteria on May 20, 2004 to become effective February 15, 2005. However, EPA has not yet (as of June 2006) approved the criteria. Thus, Table 33A criteria may be used in NPDES permits, but not for the section 303(d) list of impaired waters.

AQUATIC LIFE WATER QUALITY CRITERIA SUMMARY[A]

The concentration for each compound listed in Table 33A is a criterion not to be exceeded in waters of the state in order to protect aquatic life. All values are expressed as micrograms per liter (µg/L) except where noted. Compounds are listed in alphabetical order with the corresponding EPA number (from National Recommended Water Quality Criteria: 2002, EPA-822-R-02-047), the Chemical Abstract Service (CAS) number, aquatic life freshwater acute and chronic criteria, aquatic life saltwater acute and chronic criteria. The acute criteria refer to the average concentration for one (1) hour and the chronic criteria refer to the average concentration for 96 hours (4 days), and that these criteria should not be exceeded more than once every three (3) years.

EPA No.	Compound	CAS Number	Freshwater				Saltwater			
			Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date
56	Acenaphthene	83329								
57	Acenaphthylene	208968								
17	Acrolein	107028								
18	Acrylonitrile	107131								
102	Aldrin	309002	3 O	X			1.3 O	X		
1 N	Alkalinity				20,000 P					
2 N	Aluminum (pH 6.5 - 9.0)	7429905								
3 N	Ammonia	7664417					D	X	D	X
58	Anthracene	120127								
1	Antimony	7440360								

EPA No.	Compound	CAS Number	Freshwater				Saltwater			
			Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date
2	Arsenic	7440382								
15	Asbestos	1332214								
6 N	Barium	7440393								
19	Benzene	71432								
59	Benzidine	92875								
60	Benzo(a)Anthracene	56553								
61	Benzo(a)Pyrene	50328								
62	Benzo(b)Fluoranthene	205992								
63	Benzo(g,h,i)Perylene	191242								
64	Benzo(k)Fluoranthene	207089								
3	Beryllium	7440417								
103	BHC alpha-	319846								
104	BHC beta-	319857								
106	BHC delta-	319868								
105	BHC gamma- (Lindane)	58899	0.95		0.08	X	0.16 O			
7 N	Boron	7440428								
20	Bromoform	75252								
69	Bromophenyl Phenyl Ether 4-									
70	Butylbenzyl Phthalate	85687								
4	Cadmium	7440439								
21	Carbon Tetrachloride	56235								
107	Chlordane	57749	2.4 O	X	0.0043 O	X	0.09 O	X	0.004 O	X
8 N	Chloride	16887006	860000		230000					

EPA No.	Compound	CAS Number	Freshwater				Saltwater			
			Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date
9 N	Chlorine	7782505	19	X	11	X	13	X	7.5	X
22	Chlorobenzene	108907								
23	Chlorodibromomethane	124481								
24	Chloroethane	75003								
65	ChloroethoxyMethane Bis2-	111911								
66	ChloroethylEther Bis2-	111444								
25	Chloroethylvinyl Ether 2-	110758								
26	Chloroform	67663								
67	ChloroisopropylEther Bis2-	108601								
15 N	ChloromethylEther, Bis	542881								
71	Chloronaphthalene 2-	91587								
45	Chlorophenol 2-	95578								
10 N	Chlorophenoxy Herbicide (2,4,5,-TP)	93721								
11 N	Chlorophenoxy Herbicide (2,4-D)	94757								
72	Chlorophenyl Phenyl Ether 4-	7005723								
12 N	Chloropyrifos	2921882	0.083	X	0.041	X	0.011	X	0.0056	X
5a	Chromium (III)									
5b	Chromium (VI)	18540299								
73	Chrysene	218019								
6	Copper	7440508								
14	Cyanide	57125	22 S	X	5.2 S	X	1 S	X	1 S	X
108	DDT 4,4'-	50293	1.1 O,T	X	0.001 O,T	X	0.13 O,T	X	0.001 O,T	X

EPA No.	Compound	CAS Number	Freshwater				Saltwater			
			Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date
109	DDE 4,4'-	72559								
110	DDD 4,4'-	72548								
14 N	Demeton	8065483			0.1	X			0.1	X
74	Dibenzo(a,h)Anthracene	53703								
75	Dichlorobenzene 1,2-	95501								
76	Dichlorobenzene 1,3-	541731								
77	Dichlorobenzene 1,4-	106467								
78	Dichlorobenzidine 3,3'-	91941								
27	Dichlorobromomethane	75274								
28	Dichloroethane 1,1-	75343								
29	Dichloroethane 1,2-	107062								
30	Dichloroethylene 1,1-	75354								
46	Dichlorophenol 2,4-	120832								
31	Dichloropropane 1,2-	78875								
32	Dichloropropene 1,3-	542756								
111	Dieldrin	60571	0.24				0.71 O	X	0.0019 O	X
79	DiethylPhthalate	84662								
47	Dimethylphenol 2,4-	105679								
80	DimethylPhthalate	131113								
81	Di-n-Butyl Phthalate	84742								
49	Dinitrophenol 2,4-	51285								
27 N	Dinitrophenols	25550587								
82	Dinitrotoluene 2,4-	121142								
83	Dinitrotoluene 2,6-	606202								

EPA No.	Compound	CAS Number	Freshwater				Saltwater			
			Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date
84	Di-n-Octyl Phthalate	117840								
16	Dioxin (2,3,7,8-TCDD)	1746016								
85	Diphenylhydrazine 1,2-	122667								
68	EthylhexylPhthalate Bis2-	117817								
	Endosulfan		0.22 I,P	X	0.056 I,P	X	0.034 I,P	X	0.0087 I,P	X
112	Endosulfan alpha-	959988	0.22 O		0.056 O		0.034 O		0.0087 O	
113	Endosulfan beta-	33213659	0.22 O		0.056 O		0.034 O		0.0087 O	
114	Endosulfan Sulfate	1031078								
115	Endrin	72208	0.086				0.037 O		0.0023 O	
116	Endrin Aldehyde	7421934								
33	Ethylbenzene	100414								
86	Fluoranthene	206440								
87	Fluorene	86737								
17 N	Guthion	86500			0.01	X			0.01	X
117	Heptachlor	76448	0.52 O	X	0.0038 O	X	0.053 O	X	0.0036 O	X
118	Heptachlor Epoxide	1024573	0.52 O		0.0038 O		0.053 O		0.0036 O	
88	Hexachlorobenzene	118741								
89	Hexachlorobutadiene	87683								
91	Hexachloroethane	67721								
19 N	Hexachlorocyclo-hexane-Technical	319868								
90	Hexachlorocyclopentadiene	77474								
92	Ideno1,2,3-(cd)Pyrene	193395								
20 N	Iron	7439896			1,000	X				

EPA No.	Compound	CAS Number	Freshwater				Saltwater			
			Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date
93	Isophorone	78591								
7	Lead	7439921								
21 N	Malathion	121755			0.1	X			0.1	X
22 N	Manganese	7439965								
8a	Mercury	7439976	2.4	X	0.012	X	2.1	X	0.025	X
23 N	Methoxychlor	72435			0.03	X			0.03	X
34	Methyl Bromide	74839								
35	Methyl Chloride	74873								
48	Methyl-4,6-Dinitrophenol 2-	534521								
52	Methyl-4-Chlorophenol 3-	59507								
36	Methylene Chloride	75092								
8b	Methylmercury	22967926								
24 N	Mirex	2385855			0.001	X			0.001	X
94	Naphthalene	91203								
9	Nickel	7440020								
25 N	Nitrates	14797558								
95	Nitrobenzene	98953								
50	Nitrophenol 2-	88755								
51	Nitrophenol 4-	100027								
26 N	Nitrosamines	35576911								
28 N	Nitrosodibutylamine,N	924163								
29 N	Nitrosodiethylamine,N	55185								
96	N-Nitrosodimethylamine	62759								
98	N-Nitrosodiphenylamine	86306								

EPA No.	Compound	CAS Number	Freshwater				Saltwater			
			Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date
30 N	Nitrosopyrrolidine,N	930552								
97	N-Nitrosodi-n-Propylamine	621647								
32 N	Oxygen, Dissolved	7782447								
33 N	Parathion	56382	0.065	X	0.013	X				
119	Polychlorinated Biphenyls PCBs:	1336363	2 U	X	0.014 U	X	10 U	X	0.03 U	X
34 N	Pentachlorobenzene	608935								
53	Pentachlorophenol	87865	M				13		7.9	
99	Phenanthrene	85018								
54	Phenol	108952								
36 N	Phosphorus Elemental	7723140							0.1	
100	Pyrene	129000								
10	Selenium	7782492								
11	Silver	7440224								
40 N	Sulfide-Hydrogen Sulfide	7783064			2	X			2	X
43 N	Tetrachlorobenzene,1,2,4,5	95943								
37	Tetrachloroethane 1,1,2,2-	79345								
38	Tetrachloroethylene	127184								
12	Thallium	7440280								
39	Toluene	108883								
120	Toxaphene	8001352	0.73	X	0.0002	X	0.21	X	0.0002	X
40	Trans-Dichloroethylene 1,2-	156605								
44 N	Tributyltin (TBT)	688733								
101	Trichlorobenzene 1,2,4-	120821								

EPA No.	Compound	CAS Number	Freshwater				Saltwater			
			Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date
41	Trichloroethane 1,1,1-	71556								
42	Trichloroethane 1,1,2-	79005								
43	Trichloroethylene	79016								
45 N	Trichlorophenol 2,4,5	95954								
55	Trichlorophenol 2,4,6-	88062								
44	Vinyl Chloride	75014								
13	Zinc	7440666								

Footnotes for Tables 33A and 33B:

A Values in Table 20 are applicable to all basins.

C Ammonia criteria for freshwater may depend on pH, temperature, and the presence of salmonids or other fish with ammonia-sensitive early life stages. Values for freshwater criteria (of total ammonia nitrogen in mg N/L) can be calculated using the formulae specified in *1999 Update of Ambient Water Quality Criteria for Ammonia* (EPA-822-R-99-014; http://www.epa.gov/ost/standards/ammonia/99update.pdf):

Freshwater Acute:

salmonids present....CMC = $\frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}}$

salmonids not present...CMC= $\frac{0.411}{1+10^{7.204-pH}} + \frac{58.4}{1+10^{pH-7.204}}$

Freshwater Chronic:

fish early life stages present

$$CCC = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) * MIN(2.85, 1.45*10^{0.028*(25-T)})$$

fish early life stages not present

$$CCC=\left(\frac{0.0577}{1+10^{7.688-pH}}+\frac{2.487}{1+10^{pH-7.688}}\right)*1.45*10^{0.028*(25-MAX(T,7))}$$

Note: these chronic criteria formulae would be applied to calculate the 30-day average concentration limit; in addition, the highest 4-day average within the 30-day period should not exceed 2.5 times the CCC.

D Ammonia criteria for saltwater may depend on pH and temperature. Values for saltwater criteria (total ammonia) can be calculated from the tables specified in *Ambient Water Quality Criteria for Ammonia (Saltwater)--1989* (EPA 440/5-88-004; http://www.epa.gov/ost/pc/ambientwqc/ammoniasalt1989.pdf).

E Freshwater and saltwater criteria for metals are expressed in terms of "dissolved" concentrations in the water column, except where otherwise noted (e.g. aluminum).

F The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. Criteria values for hardness may be calculated from the following formulae (CMC refers to Acute Criteria; CCC refers to Chronic Criteria):

$$CMC = (\exp(m_A*[\ln(hardness)] + b_A))*CF$$

$$CCC = (\exp(m_C*[\ln(hardness)] + b_C))*CF$$

where CF is the conversion factor used for converting a metal criterion expressed as the total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column.

Chemical	m_A	b_A	m_C	b_C
Cadmium	1.0166	-3.924	0.7409	-4.719
Chromium III	0.8190	3.7256	0.8190	0.6848
Copper	0.9422	-1.700	0.8545	-1.702
Lead	1.273	-1.460	1.273	-4.705
Nickel	0.8460	2.255	0.8460	0.0584
Silver	1.72	-6.59		
Zinc	0.8473	0.884	0.8473	0.884

Conversion factors (CF) for dissolved metals (the values for total recoverable metals criteria were multiplied by the appropriate conversion factors shown below to calculate the dissolved metals criteria):

Chemical	Freshwater		Saltwater	
	Acute	Chronic	Acute	Chronic
Arsenic	1.000	1.000	1.000	1.000
Cadmium	1.136672-[(ln hardness)(0.041838)]	1.101672-[(ln hardness)(0.041838)]	0.994	0.994
Chromium III	0.316	0.860	--	--
Chromium VI	0.982	0.962	0.993	0.993
Copper	0.960	0.960	0.83	0.83
Lead	1.46203-[(ln hardness)(0.145712)]	1.46203-[(ln hardness)(0.145712)]	0.951	0.951
Nickel	0.998	0.997	0.990	0.990
Selenium	0.996	0.922	0.998	0.998
Silver	0.85	0.85	0.85	--
Zinc	0.978	0.986	0.946	0.946

I This value is based on criterion published in Ambient Water Quality Criteria for Endosulfan (EPA 440/5-80-046) and should be applied as the sum of alpha- and beta-endosulfan.

M Freshwater aquatic life values for pentachlorophenol are expressed as a function of pH, and are calculated as follows: CMC=(exp(1.005(pH)-4.869); CCC=exp(1.005(pH)-5.134).

N This number was assigned to the list of non-priority pollutants in National Recommended Water Quality Criteria: 2002 (EPA-822-R-02-047).

O This criterion is based on EPA recommendations issued in 1980 that were derived using guidelines that differed from EPA's 1985 Guidelines for minimum data requirements and derivation procedures. For example, a "CMC" derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. If assessment is to be done using an averaging period, the values given should be divided by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.

P Criterion shown is the minimum (i.e. CCC in water should not be below this value in order to protect aquatic life).

Q Criterion is applied as total arsenic (i.e. arsenic (III) + arsenic (V)).

S This criterion is expressed as µg free cyanide (CN)/L.

T This criterion applies to DDT and its metabolites (i.e. the total concentration of DDT and its metabolites should not exceed this value).

U This criterion applies to total PCBs (e.g. the sum of all congener or all isomer or homolog or Arochlor analyses).

V The CMC=1/[(f1/CMC1)+(f2/CMC2)] where f1 and f2 are the fractions of total selenium that are treated as selenite and selenate, respectively, and CMC1 and CMC2 are 185.9 µg/L and 12.82 µg/L, respectively.

W The acute and chronic criteria for aluminum are 750 µg/L and 87 µg/L, respectively. These values for aluminum are expressed in terms of "total recoverable" concentration of metal in the water column. The criterion applies at pH<6.6 and hardness<12 mg/L (as $CaCO_3$).

X The effective date for the criterion in the column immediately to the left is 1991.

Y No criterion.

TABLE 40: Human Health Water Quality Criteria for Toxic Pollutants

Effective October 17, 2011

Human Health Criteria Summary

The concentration for each pollutant listed in Table 40 was derived to protect Oregonians from potential adverse health impacts associated with long-term exposure to toxic substances associated with consumption of fish, shellfish, and water. The "organism only" criteria are established to protect fish and shellfish consumption and apply to waters of the state designated for fishing. The "water + organism" criteria are established to protect the consumption of drinking water, fish, and shellfish, and apply where both fishing and domestic water supply (public and private) are designated uses. All criteria are expressed as micrograms per liter (µg/L), unless otherwise noted. Pollutants are listed in alphabetical order. Additional information includes the Chemical Abstract Service (CAS) number, whether the criterion is based on carcinogenic effects (can cause cancer in humans), and whether there is an aquatic life criterion for the pollutant (i.e. "y"= yes, "n" = no). All the human health criteria were calculated using a fish consumption rate of 175 grams per day unless otherwise noted. A fish consumption rate of 175 grams per day is approximately equal to 23 8-ounce fish meals per month. For pollutants categorized as carcinogens, values represent a cancer risk of one additional case of cancer in one million people (i.e. 10^{-6}), unless otherwise noted. All metals criteria are for total metal concentration, unless otherwise noted. Italicized pollutants represent non-priority pollutants. The human health criteria revisions established by OAR 340-041-0033 and shown in Table 40 do not become applicable for purposes of ORS chapter 468B or the federal Clean Water Act until approved by EPA pursuant to 40 CFR 131.21 (4/27/2000).

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	*Human Health Criteria for the Consumption of:*	
					Water + Organism (µg/L)	Organism Only (µg/L)
1	Acenaphthene	83329	n	n	95	99
2	Acrolein	107028	n	n	0.88	0.93
3	Acrylonitrile	107131	y	n	0.018	0.025
4	Aldrin	309002	y	y	0.0000050	0.0000050
5	Anthracene	120127	n	n	2900	4000
6	Antimony	7440360	n	n	5.1	64
7	Arsenic (inorganic)[A]	7440382	y	n	2.1	2.1 (freshwater) 1.0 (saltwater)
	[A] The arsenic criteria are expressed as total inorganic arsenic. The "organism only" criteria are based on a risk level of approximately of 1.1 x 10^{-5}, and the "water + organism" criterion is based on a risk level of 1 x 10^{-4}					
8	Asbestos[B]	1332214	y	n	7,000,000 fibers/L	--
	[B] The human health risks from asbestos are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
9	*Barium*[C]	7440393	n	n	1000	--

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of: Water + Organism (µg/L)	Organism Only (µg/L)
	[C] The human health criterion for barium is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
10	Benzene	71432	y	n	0.44	1.4
11	Benzidine	92875	y	n	0.000018	0.000020
12	Benz(a)anthracene	56553	y	n	0.0013	0.0018
13	Benzo(a)pyrene	50328	y	n	0.0013	0.0018
14	Benzo(b)fluoranthene 3,4	205992	y	n	0.0013	0.0018
15	Benzo(k)fluoranthene	207089	y	n	0.0013	0.0018
16	BHC Alpha	319846	y	n	0.00045	0.00049
17	BHC Beta	319857	y	n	0.0016	0.0017
18	BHC Gamma (Lindane)	58899	n	y	0.17	0.18
19	Bromoform	75252	y	n	3.3	14
20	Butylbenzyl Phthalate	85687	n	n	190	190
21	Carbon Tetrachloride	56235	y	n	0.10	0.16
22	Chlordane	57749	y	y	0.000081	0.000081
23	Chlorobenzene	108907	n	n	74	160
24	Chlorodibromomethane	124481	y	n	0.31	1.3
25	Chloroethyl Ether bis 2	111444	y	n	0.020	0.05
26	Chloroform	67663	n	n	260	1100
27	Chloroisopropyl Ether bis 2	108601	n	n	1200	6500
28	*Chloromethyl ether, bis*	542881	y	n	0.000024	0.000029
29	Chloronaphthalene 2	91587	n	n	150	160
30	Chlorophenol 2	95578	n	n	14	15
31	*Chlorophenoxy Herbicide (2,4,5,-TP)* [D]	93721	n	n	10	--
	[D] The Chlorophenoxy Herbicide (2,4,5,-TP) criterion is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
32	*Chlorophenoxy Herbicide (2,4-D)* [E]	94757	n	n	100	--
	[E] The Chlorophenoxy Herbicide (2,4-D) criterion is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
33	Chrysene	218019	y	n	0.0013	0.0018
34	Copper [F]	7440508	n	y	1300	--
	[F] Human health risks from copper are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
35	Cyanide [G]	57125	n	y	130	130
	[G] The cyanide criterion is expressed as total cyanide (CN)/L.					
36	DDD 4,4'	72548	y	n	0.000031	0.000031
37	DDE 4,4'	72559	y	n	0.000022	0.000022

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of: Water + Organism (µg/L)	Organism Only (µg/L)
38	DDT 4,4'	50293	y	y	0.000022	0.000022
39	Dibenz(a,h)anthracene	53703	y	n	0.0013	0.0018
40	Dichlorobenzene(m) 1,3	541731	n	n	80	96
41	Dichlorobenzene(o) 1,2	95501	n	n	110	130
42	Dichlorobenzene(p) 1,4	106467	n	n	16	19
43	Dichlorobenzidine 3,3'	91941	y	n	0.0027	0.0028
44	Dichlorobromomethane	75274	y	n	0.42	1.7
45	Dichloroethane 1,2	107062	y	n	0.35	3.7
46	Dichloroethylene 1,1	75354	n	n	230	710
47	Dichloroethylene trans 1,2	156605	n	n	120	1000
48	Dichlorophenol 2,4	120832	n	n	23	29
49	Dichloropropane 1,2	78875	y	n	0.38	1.5
50	Dichloropropene 1,3	542756	y	n	0.30	2.1
51	Dieldrin	60571	y	y	0.0000053	0.0000054
52	Diethyl Phthalate	84662	n	n	3800	4400
53	Dimethyl Phthalate	131113	n	n	84000	110000
54	Dimethylphenol 2,4	105679	n	n	76	85
55	Di-n-butyl Phthalate	84742	n	n	400	450
56	Dinitrophenol 2,4	51285	n	n	62	530
57	*Dinitrophenols*	25550587	n	n	62	530
58	Dinitrotoluene 2,4	121142	y	n	0.084	0.34
59	Dioxin (2,3,7,8-TCDD)	1746016	y	n	0.00000000051	0.00000000051
60	Diphenylhydrazine 1,2	122667	y	n	0.014	0.020
61	Endosulfan Alpha	959988	n	y	8.5	8.9
62	Endosulfan Beta	33213659	n	y	8.5	8.9
63	Endosulfan Sulfate	1031078	n	n	8.5	8.9
64	Endrin	72208	n	y	0.024	0.024
65	Endrin Aldehyde	7421934	n	n	0.030	0.030
66	Ethylbenzene	100414	n	n	160	210
67	Ethylhexyl Phthalate bis 2	117817	y	n	0.20	0.22
68	Fluoranthene	206440	n	n	14	14
69	Fluorene	86737	n	n	390	530
70	Heptachlor	76448	y	y	0.0000079	0.0000079
71	Heptachlor Epoxide	1024573	y	y	0.0000039	0.0000039
72	Hexachlorobenzene	118741	y	n	0.000029	0.000029
73	Hexachlorobutadiene	87683	y	n	0.36	1.8
74	*Hexachlorocyclo-hexane-Technical*	608731	y	n	0.0014	0.0015
75	Hexachlorocyclopentadiene	77474	n	n	30	110
76	Hexachloroethane	67721	y	n	0.29	0.33
77	Indeno(1,2,3-cd)pyrene	193395	y	n	0.0013	0.0018
78	Isophorone	78591	y	n	27	96
79	*Manganese* [H]	7439965	n	n	--	100

[H] *The "fish consumption only" criterion for manganese applies only to salt water and is for total manganese. This EPA recommended criterion predates the 1980 human health methodology and does not utilize the fish ingestion BCF calculation*

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of: Water + Organism (µg/L)	Organism Only (µg/L)
	method or a fish consumption rate.					
80	*Methoxychlor*[I]	72435	n	y	100	--
	[I]The human health criterion for methoxychlor is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
81	Methyl Bromide	74839	n	n	37	150
82	Methyl-4,6-dinitrophenol 2	534521	n	n	9.2	28
83	Methylene Chloride	75092	y	n	4.3	59
84	Methylmercury (mg/kg)[J]	22967926	n	n	--	0.040 mg/kg
	[J]This value is expressed as the fish tissue concentration of methylmercury. Contaminated fish and shellfish is the primary human route of exposure to methylmercury					
85	Nickel	7440020	n	n	140	170
86	*Nitrates*[K]	14797558	n	n	10000	--
	[K]The human health criterion for nitrates is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
87	Nitrobenzene	98953	n	n	14	69
88	*Nitrosamines*	35576911	y	n	0.00079	0.046
89	*Nitrosodibutylamine, N*	924163	y	n	0.0050	0.022
90	*Nitrosodiethylamine, N*	55185	y	n	0.00079	0.046
91	Nitrosodimethylamine, N	62759	y	n	0.00068	0.30
92	Nitrosodi-n-propylamine, N	621647	y	n	0.0046	0.051
93	Nitrosodiphenylamine, N	86306	y	n	0.55	0.60
94	*Nitrosopyrrolidine, N*	930552	y	n	0.016	3.4
95	*Pentachlorobenzene*	608935	n	n	0.15	0.15
96	Pentachlorophenol	87865	y	y	0.15	0.30
97	Phenol	108952	n	n	9400	86000
98	Polychlorinated Biphenyls (PCBs)[L]	NA	y	y	0.0000064	0.0000064
	[L] This criterion applies to total PCBs (e.g. determined as Aroclors or congeners).					
99	Pyrene	129000	n	n	290	400
100	Selenium	7782492	n	n	120	420
101	*Tetrachlorobenzene, 1,2,4,5-*	95943	n	n	0.11	0.11
102	Tetrachloroethane 1,1,2,2	79345	y	n	0.12	0.40
103	Tetrachloroethylene	127184	y	n	0.24	0.33
104	Thallium	7440280	n	n	0.043	0.047
105	Toluene	108883	n	n	720	1500
106	Toxaphene	8001352	y	y	0.000028	0.000028
107	Trichlorobenzene 1,2,4	120821	n	n	6.4	7.0
108	Trichloroethane 1,1,2	79005	y	y	0.44	1.6
109	Trichloroethylene	79016	y	n	1.4	3.0
110	Trichlorophenol 2,4,6	88062	y	n	0.23	0.24

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	*Human Health Criteria for the Consumption of:*	
					Water + Organism (µg/L)	Organism Only (µg/L)
111	*Trichlorophenol, 2, 4, 5-*	95954	n	n	330	360
112	Vinyl Chloride	75014	y	n	0.023	0.24
113	Zinc	7440666	n	n	2100	2600

Attachment B

Allowable Headworks Loading Tables

Attachment B-1: Allowable Headworks Loading (AHL) Calculations for Water Quality–Based Criteria

Parameter (POCs)	Freshwater				Human Consumption				Source of Concentration Data and AHL Notes
	Acute µg/L	AHL lbs/day	Chronic µg/L	AHL lbs/day	Water & Organism µg/L	AHL lbs/day	Organism Only µg/L	AHL lbs/day	
Aluminum									Not Listed
Antimony					5.1	**41.4**	64	**660.0**	Table 40
Arsenic					2.1	**10.1**	2.1	**10.1**	Table 40
Beryllium									Not Listed
Cadmium	1.17	**26.5**	0.47	**11.5**					Table 20 (Adjusted for receiving stream hardness)
Chromium	16	**289.9**	11	**217.1**					Table 20 (assume measured concentration is for Chromium (Hex) so no adjustment for receiving stream hardness)
Copper	6.25	**121.4**	4.57	**88.8**	1300	**35243.8**			Table 20 (Adjusted for receiving stream hardness) and Table 40
Cyanide	22	**103.9**	5.2	**21.3**	130	**716.1**	130	**716.1**	Table 20 and Table 40 (Results based on assumed removal efficieny. More monitoring data required to determine actual removal efficieny.)
Fluoride									Not Listed
Iron			1000	**25938.1**					Table 20
Lead	19.94	**612.9**	0.78	**22.2**					Table 20 (Adjusted for receiving stream hardness)
Mercury	2.4	**52.2**	0.012	**0.2**					Table 20
Molybdenum									Not Listed
Nickel	575.56	**4371.2**	63.92	**533.8**	140	**1172.6**	170	**1424.5**	Table 20 (Adjusted for receiving stream hardness) and Table 40
Selenium	260	**2311.1**	35	**342.0**	120	**1177.5**	420	**4126.3**	Table 20 and Table 40
Silver	0.55	**21.3**	0.12	**4.7**					Table 20 (Acute adjusted for receiving stream hardness)
Thallium					0.043	**0.02**	0.047	**0.1**	Table 40
Zinc	46.47	**498.8**	42.44	**487.0**	2100	**33102.5**	2600	**41028.2**	Table 20 (Adjusted for receiving stream hardness)

Color Coding Key:
No listed criteria
Hardness Dependent

Attachment B-1: Allowable Headworks Loading (AHL) Calculations for Water Quality–Based Criteria

Parameter (OPPs)	Freshwater				Human Consumption				Source of Concentration Data and AHL Notes
	Acute µg/L	AHL lbs/day	Chronic µg/L	AHL lbs/day	Water & Organism µg/L	AHL lbs/day	Organism Only µg/L	AHL lbs/day	
Bis(2-ethylhexyl)phthalate					0.2	**0.08**	0.22	**0.09**	Table 40
Butyl benzyl phthalate					190	**40.37**	190	**40.37**	Table 40
Diethyl phthalate					3800	**2155.42**	4400	**2495.75**	Table 40
Di-n-butyl phthalate					400	**49.49**	450	**55.68**	Table 40
Di-n-octyl phthalate									Not Listed
Hexachlorocyclopentadiene					30	**1.39**	110	**5.11**	Table 40
2,4-Dichlorophenol					23	**0.96**	29	**1.21**	Table 40
Phenol					9400	**3169.09**	86000	**28993.84**	Table 40
2-Methylphenol (Cresol)									Not Listed
4-Methylphenol (Cresol)									Not Listed
Benzene					0.44	**0.14**	1.4	**0.43**	Table 40
Bromodichloromethane									Not Listed
1,4-Dichlorobenzene					16	**1.18**	19	**1.40**	Table 40
Chloroform					260	**28.31**	1100	**119.77**	Table 40
Ethylbenzene					160	**42.03**	210	**55.16**	Table 40
Tetrachloroethene					0.24	**0.02**	0.33	**0.02**	Table 40
Toluene					720	**257.94**	1500	**537.37**	Table 40
1,2,4-Trichlorobenzene					6.4	**0.21**	7	**0.23**	Table 20 (One reading in the GPWTP Effluent with no other detections at the influent created a negative removal efficiency)
Xylenes									Not Listed

Color Coding Key:
No listed criteria

Appendix B-1: Allowable Headworks Loading (AHL) Calculations for Water Quality Based Criteria

Hardness Dependent Compound Adjustment Calculations

					Conversion Factors		Corrected Concentrations	
COMPOUND	mA	bA	mC	bC	Acute	Chronic	Acute	Chronic
Cadmium	1.128	-3.828	0.7852	-3.49	0.988501	0.953501	1.167997	0.469166
Chromium	0.819	3.688	0.819	1.561	0.316	0.86	229.6387	74.49242
Copper	0.9422	-1.464	0.8545	-1.465	0.96	0.96	6.246466	4.57416
Lead	1.273	-1.46	1.273	-4.705	0.945985	0.945985	19.94245	0.777129
Nickel	0.846	3.3612	0.846	1.1645	0.998	0.997	575.5579	63.92032
Silver	1.72	-6.52	-	-	0.85	-	0.553733	
Zinc	0.8473	0.8604	0.8473	0.7614	0.978	0.986	46.47434	42.43812

Attachment B-2: Allowable Headworks Loading (AHL) Calculations for Inhibition-Based Criteria

Parameter (POCs)	Activated Sludge		Anaerobic Digester	
	Inhibition Values	AHL	Inhibition Values	AHL
	mg/L	lbs/day	mg/L	lbs/day
Aluminum				
Antimony				
Arsenic	0.1	5.1	1.6	3.9
Beryllium				
Cadmium	1	83.9	20	12.5
Chromium	1	74.0	110	73.1
Copper	1	72.5	40	24.7
Cyanide	0.1	3.7	1	6.1
Fluoride				
Iron				
Lead	1	96.4	340	200.0
Mercury	0.1	14.4		
Molybdenum				
Nickel	1	49.0	10	12.8
Phenolics				
Selenium				
Silver			13	7.4
Thallium				
Zinc	0.3	17.5	400	295.3
Parameter (OPPs)				
Bis(2-ethylhexyl)phthalate				
Butyl benzyl phthalate				
Diethyl phthalate				
Di-n-butyl phthalate				
Di-n-octyl phthalate				
Hexachlorocyclopentadiene				
2,4-Dichlorophenol	64	4352.7		
Phenol	50	1980.3		
2-Methylphenol (Cresol)				
4-Methylphenol (Cresol)				
Benzene	100	19458.9		
Bromodichloromethane				
1,4-Dichlorobenzene	5	252.1	1.4	1.6
Chloroform			1	0.8
Ethylbenzene	200	27446.8		
Tetrachloroethene			20	23.8
Toluene	200	18659.7		
1,2,4-Trichlorobenzene				
Xylenes				

**All Inhibition Values based on literature values presented in the EPA Local Limits Development Guidance, Appendix G.*

Color Coding Key:
No listed criteria

Attachment B-3: Allowable Headworks Loading (AHL) Calculations for Sludge-Based Criteria

Parameter	Table1 Ceiling Concentrations (mg/kg)	AHL lbs/day	Table 3 Clean Sludge (mg/kg)	AHL lbs/day
Arsenic	75	**1.62**	41	**0.89**
Cadmium	85	**0.47**	39	**0.22**
Chromium	NA		NA	
Copper	4300	**23.43**	1500	**8.17**
Cyanide	NA		NA	
Lead	840	**4.37**	300	**1.56**
Mercury	57	**0.32**	17	**0.10**
Molybdenum	75	**1.13**	NA	
Nickel	420	**4.74**	420	**4.74**
Selenium	100	**0.92**	100	**0.92**
Silver	NA		NA	
Zinc	7500	**48.95**	2800	**18.27**

**Concentration values taken from 40 CFR Part 503.13 based on land application*

Color Coding Key:
No listed criteria

Attachment C

Monitoring Results Summaries

Attachment C-1: Water Restoration Plant Liquid Stream Monitoring Summary
Monitoring period: April 2008 to November 2011
GPWRP Average Effluent
Flow 5 MGD

Parameter (POCs)	Average WRP Influent Conc. mg/L	Average WRP Effluent Conc. mg/L	Overall WRP Removal Efficiency	Average Primary Influent Conc. mg/L	Average Primary Effluent Conc. mg/L	Primary Treatment Removal Efficiency
Aluminum	0.531667	0.046643	91%	0.68224	0.27786	59%
Antimony	0.001263	0.000614	51%	0.00097	0.00102	-5%
Arsenic	0.000734	0.000584	20%	0.00084	0.00069	18%
Beryllium	0.000021	0.000007	67%	0.00002	0.00001	51%
Cadmium	0.000167	0.000033	80%	0.00019	0.00009	50%
Chromium	0.002080	0.000515	75%	0.00232	0.00131	44%
Copper	0.035610	0.006703	81%	0.04380	0.02520	42%
Cyanide	0.002145	0.001968	8%	0.002093	0.002338	-12%
Fluoride	0.751762	0.102214	86%	0.92552	0.38090	59%
Iron	0.549857	0.084757	85%	0.71588	0.36410	49%
Lead	0.002316	0.000346	85%	0.00308	0.00133	57%
Mercury	0.000153	0.000032	79%	0.00018	0.00005	71%
Molybdenum	0.001917	0.001355	29%	0.00198	0.00173	13%
Nickel	0.003310	0.002014	39%	0.00362	0.00308	15%
Selenium	0.000586	0.000305	48%	0.00068	0.00052	24%
Silver	0.000586	0.000069	88%	0.00078	0.00037	53%
Thallium	0.000014	0.000010	30%	0.00003	0.00002	33%
Zinc	0.124605	0.040157	68%	0.14748	0.10555	28%
Hardness	102.33	89.39	13%	N/A	N/A	-
Oil & Grease,HEM, T	15.07	1.19	92%	N/A	N/A	-
Parameter (OPPs)	µg/L	µg/L		µg/L	µg/L	
Bis(2-ethylhexyl)phthalate	7.87143	0.77619	90%	7.52500	4.50833	40%
Butyl benzyl phthalate	0.76429	0.15000	80%	0.87917	0.62500	29%
Diethyl phthalate	2.85000	0.20952	93%	2.25083	2.11750	6%
Di-n-butyl phthalate	0.68100	0.22952	66%	1.39000	1.41000	-1%
Di-n-octyl phthalate	0.60952	0.19000	69%	0.19000	0.19000	0%
Hexachlorocyclopentadiene	0.32857	0.29500	10%	0.29500	0.29500	0%
2,4-Dichlorophenol	0.28000	0.28000	0%	0.45667	0.28000	39%
Phenol	2.13286	0.26381	88%	2.12833	2.24083	-5%
2-Methylphenol (Cresol)	2.71429	0.50000	82%	0.50000	0.50000	0%
4-Methylphenol (Cresol)	6.92381	0.50000	93%	3.40833	1.79167	47%
Benzene	0.45043	0.06100	86%	0.50592	0.10842	79%
Bromodichloromethane	0.16857	0.15250	10%	0.15646	0.15646	0%
1,4-Dichlorobenzene	0.60286	0.34190	43%	0.58583	0.48458	17%
Chloroform	2.99905	1.14857	62%	3.32500	2.28500	31%
Ethylbenzene	0.33386	0.05300	84%	0.36475	0.11083	70%
Tetrachloroethene	0.15276	0.08857	42%	0.13108	0.08300	37%
Toluene	2.98300	0.34722	88%	3.69167	1.65000	55%
1,2,4-Trichlorobenzene	0.11700	0.14810	-27%	0.11700	0.11700	0%
Xylenes	1.65619	0.18000	89%	1.88667	0.50000	73%

Attachment C-2: Water Restoration Plant Solids Stream Monitoring Summary

Monitoring period: April 2008
to November 2011

Average Amount of Sludge Sent to Disposal	4432.5	lbs/day
	2.01	metric tons/day

	Average Concentrations				
Parameter	Gravity Thickener mg/kg-dry	Gravity Belt Thickener mg/kg-dry	Digester #1 mg/kg-dry	Belt Press Cake mg/kg-dry	JO-GRO Compost mg/kg
Aluminum	2655.88	2920.00	4389.41	6480.67	5112.50
Antimony	-	-	-	-	0.25
Arsenic	1.68	2.52	2.43	3.14	2.82
Beryllium	-	-	-	-	0.08
Cadmium	0.56	0.73	1.11	1.59	0.64
Chromium	8.45	8.30	13.51	20.01	17.15
Copper	114.11	210.94	248.53	340.40	137.24
Iron	2503.53	3268.24	4705.29	6783.33	9837.50
Lead	9.75	8.36	15.94	23.18	15.60
Mercury	0.93	0.43	1.48	0.82	0.56
Molybdenum	2.92	3.12	4.69	5.83	2.53
Nickel	7.58	8.83	13.19	18.33	14.72
Selenium	4.43	4.98	4.92	6.99	3.86
Silver	2.11	2.40	4.50	6.59	2.52
Thallium	-	-	-	-	2.50
Zinc	381.94	354.82	557.76	811.67	343.18
% Total Solids	3.63	4.46	2.94	12.63	52.91

Color Coding Key:
Values Used for determining Sludge Based AHLs

Attachment C-3: Sewer Collection System Monitoring Summary

Monitoring period: July 2008 to November 2011

*Note: Values listed in this table are used to determine the non-industrial background contributions to the GPWRP

Average Concentrations Within Collection System

Parameter (POCs)	Manhole X65 (Darnielle P.S.)	Manhole R23 (Redwood P.S.)	Manhole NW F17	Manhole NE H17	Manhole SW B33	Manhole SE K110	Overall Background Average Concentrations
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.508286	0.583286	0.344429	0.409357	0.620714	1.001357	0.577905
Antimony	0.000880	0.001601	0.000670	0.000732	0.001011	0.001574	0.001078
Arsenic	0.000664	0.000607	0.000654	0.000802	0.000617	0.000647	0.000665
Beryllium	0.000028	0.000030	0.000011	0.000011	0.000013	0.000041	0.000022
Cadmium	0.000117	0.008960	0.000097	0.000125	0.000167	0.000135	0.001600
Chromium	0.001200	0.001369	0.001516	0.001299	0.002171	0.001983	0.001590
Copper	0.031864	0.035729	0.022864	0.026671	0.046836	0.118921	0.047148
Cyanide	0.001350	0.001221	0.001707	0.002914	0.002107	0.001407	0.001785
Fluoride	0.957786	0.671357	0.317786	0.324179	0.812357	0.592643	0.612685
Iron	0.324929	0.164500	0.358214	0.356500	0.976429	0.885164	0.510956
Lead	0.000821	0.000852	0.001015	0.001003	0.001758	0.001548	0.001166
Mercury	0.000016	0.000020	0.000352	0.003088	0.000036	0.000032	0.000591
Molybdenum	0.000528	0.000818	0.000676	0.001099	0.000803	0.000561	0.000748
Nickel	0.009598	0.001862	0.001776	0.001995	0.002974	0.002771	0.003496
Selenium	0.000481	0.000636	0.000330	0.000587	0.000427	0.000628	0.000515
Silver	0.000126	0.000136	0.000090	0.000085	0.000131	0.000188	0.000126
Thallium	0.000015	0.000064	0.000020	0.000012	0.000069	0.000025	0.000034
Zinc	0.077729	0.116821	0.117371	0.117586	0.154629	0.149629	0.122294
O&G HEM, Total	18.33	16.45	17.00	16.27	19.90	21.80	18.29
O&G SGT-HEM Non Polar	0.661667	0.640000	1.171429	1.078333	1.528571	0.961667	1.006944

Parameter (OPPs)	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Bis(2-ethylhexyl)phthalate	15.35	11.73	13.10	5.93	17.25	8.65	12.00
Butyl benzyl phthalate	2.81	0.15	0.15	0.26	1.30	0.15	0.80
1,4-Dichlorobenzene	0.13	0.13	0.21	0.18	0.34	0.13	0.19
Diethyl phthalate	7.52	4.89	4.52	2.59	3.02	1.07	3.93
Di-n-butyl phthalate	0.92	0.64	0.52	0.42	1.00	0.36	0.64
Di-n-octyl phthalate	0.31	0.18	0.18	0.18	0.31	0.18	0.22
Nitrobenzene	0.27	0.27	1.20	0.27	0.27	0.27	0.42
Phenol	1.71	1.51	0.90	0.38	1.51	0.98	1.16
2-Methylphenol (Cresol)	0.50	0.50	0.50	0.50	0.50	0.50	0.50
4-Methylphenol (Cresol)	11.25	16.00	1.68	1.40	13.25	9.13	8.78
Bromodichloromethane	0.18	0.87	0.36	0.28	0.33	0.76	0.46
Chloroform	2.00	5.53	3.83	3.63	7.03	4.47	4.41
Ethylbenzene	0.05	0.05	0.05	0.05	0.05	0.29	0.09
Toluene	0.52	0.05	0.26	0.05	0.78	0.16	0.30
Xylenes, Total	0.18	0.18	0.18	0.16	0.18	1.89	0.46

Color Coding Key:

Organic compounds also detected at the headworks.

Attachment C-4: Industrial User Monitoring Summary

Monitoring period: February 2007 to November 2011

*Note: The Data presented in this table summarizes monitoring results from both city and IU self monitoring

Average Concentrations and Loadings

Parameter	Riverside Readymix		Metal Finishers, Inc.		Clearwater Technologies		Timber Products		*Current Total Loading*
	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	lbs/day
Aluminum	-	-	6.67500	0.19651	0.09046	0.01102	0.40950	0.03737	0.24491
Arsenic	0.00213	0.00002	0.00066	0.00002	0.00805	0.00098	0.00430	0.00039	0.00141
Cadmium	0.00200	0.00002	0.00016	0.00000	0.00007	0.00001	0.00497	0.00045	0.00048
Chromium	0.01066	0.00009	0.07337	0.00216	0.01926	0.00235	0.02025	0.00185	0.00644
Copper	0.00874	0.00007	0.32876	0.00968	0.01239	0.00151	0.10209	0.00932	0.02058
Cyanide	0.00351	0.00003	0.00216	0.00006	0.00270	0.00033	0.01601	0.00146	0.00188
Fluoride	-	-	-	-	32.18000	3.92078	1.46000	0.13325	4.05403
Iron	-	-	7.30500	0.21506	0.79260	0.09657	3.33000	0.30391	0.61554
Lead	0.00245	0.00002	0.05352	0.00158	0.00039	0.00005	0.02399	0.00219	0.00383
Mercury	0.00009	0.00000	0.00008	0.00000	0.00006	0.00001	0.00006	0.00001	0.00002
Molybdenum	0.00367	0.00003	0.00089	0.00003	0.03511	0.00428	0.00581	0.00053	0.00486
Nickel	0.00391	0.00003	0.45680	0.01345	8.90976	1.08556	0.01555	0.00142	1.10046
Selenium	0.00213	0.00002	0.00027	0.00001	0.00276	0.00034	0.00290	0.00026	0.00063
Silver	0.00200	0.00002	0.00007	0.00000	0.00004	0.00000	0.00154	0.00014	0.00016
Thallium	-	-	-	-	-	-	0.00005	0.00000	0.00000
Zinc	0.02701	0.00022	0.10851	0.00319	0.06967	0.00849	3.06668	0.27988	0.29178
Average flow, GPD	982		3530		14609		10943		

Total IU Contributing Flow **0.03 MGD**

Color Coding Key:

No testing conducted

Attachment C-5: Hauled Sewage Monitoring Summary (April 2009 to March 2011)

Monitoring period: April 2009 to November 2011

Parameter mg/L	*Average Concentrations* JO-GRO™ Pond	Grants Pass Landfill Tank
Aluminum	2.80280	0.20370
Antimony	0.00207	0.00152
Arsenic	0.01810	0.00065
Beryllium	0.00006	0.00001
Cadmium	0.00071	0.00008
Chromium	0.01048	0.00051
Copper	0.08476	0.01518
Cyanide	0.00296	0.00171
Fluoride	2.29520	0.16940
Iron	5.63200	0.60640
Lead	0.01085	0.00178
Mercury	0.00022	0.00001
Molybdenum	0.01419	0.00032
Nickel	0.03713	0.00497
Selenium	0.00191	0.00187
Silver	0.00240	0.00001
Thallium	0.06020	0.00143
Zinc	0.25773	0.15408
BOD	300.66667	3.00000
pH	7.15000	6.95000
TSS	645.75000	6.25000

*Each load of leachate is approximately 3400 gallons.

Attachment C-6: Rogue River Monitoring Summary

Monitoring period: July 2008 to November 2011

*Note: The values in this table represent the background concentrations upstream of the GPWRP outfall.

	cfs	MGD
7Q10 Flow	940	608
1Q10 Flow	850	549

Parameter	Average Concentration, mg/L
Aluminum	0.258883
Antimony	0.001163
Arsenic	0.000537
Beryllium	0.000011
Cadmium	0.000019
Chromium	0.000487
Copper	0.001314
Cyanide	0.001389
Fluoride	0.125430
Iron	0.219143
Lead	0.000129
Mercury	0.000004
Molybdenum	0.000262
Nickel	0.000347
Selenium	0.000204
Silver	0.000012
Thallium	0.000040
Zinc	0.011811
Hardness	34.566667

Attachment D

Complete Monitoring Results

Attachment D-1: Water Restoration Plant Liquid Stream Monitoring Results (POCs)

PARAMETER mg/L	WRP INFLUENT MONITORING RESULTS											
	11-Aug-08	12-Aug-08	13-Aug-08	20-Jan-09	21-Jan-09	22-Jan-09	18-Aug-09	19-Aug-09	20-Aug-09	23-Feb-10	24-Feb-10	25-Feb-10
Aluminum	0.57	0.501	0.844	0.536	0.579	0.585	0.603	0.546	0.574	0.474	0.530	0.354
Antimony				0.000432	0.000376	0.000419	0.000379	0.000287	0.000343	0.000272	0.000234	0.00011
Arsenic	0.00042	0.000675	0.00113	0.000994	0.000897	0.000659	0.000651	0.00121	0.000177	0.000644	0.000898	0.000716
Beryllium				0.000027	0.000031	0.000029	0.00001445	0.00001445	0.0001	0.0000028	0.000018	0.0000061
Cadmium	0.000126	0.000106	0.000142	0.000204	0.000174	0.00018	0.000211	0.000138	0.000145	0.000155	0.000174	0.000113
Chromium	0.00384	0.00171	0.00324	0.00214	0.0019	0.00182	0.00177	0.00163	0.00166	0.00133	0.00152	0.00108
Copper	0.0456	0.0447	0.0529	0.0438	0.0398	0.0399	0.0385	0.0388	0.0381	0.0299	0.0292	0.0228
Cyanide	0.0015	0.0015	0.0015	0.0038	0.0051	0.0039	0.00075	0.00075	0.00075	0.0020	0.0021	0.0021
Fluoride	0.57	0.792	0.622	1.41	1.01	1.34	0.917	0.1	1.54	0.11	0.12	0.098
Iron	0.538	0.519	0.719	0.553	0.604	0.577	0.655	0.664	0.694	0.366	0.484	0.284
Lead	0.00291	0.00253	0.00448	0.00279	0.00408	0.00255	0.00245	0.00205	0.00192	0.00149	0.00154	0.00251
Mercury	0.000097	0.000079	0.00015	0.000089	0.000074	0.00014	0.0000909	0.000069	0.0000454	0.000132	0.000424	0.000672
Molybdenum	0.00148	0.00243	0.00244	0.00306	0.00165	0.00209	0.00165	0.00271	0.00144	0.00140	0.00201	0.00156
Nickel	0.00293	0.00259	0.00355	0.00382	0.00341	0.0035	0.00586	0.00431	0.00442	0.00130	0.00271	0.00175
Selenium	0.00038	0.00007	0.00028	0.000933	0.00125	0.0011	0.00038	0.000605	0.000509	0.000588	0.000708	0.000698
Silver	0.000565	0.000756	0.000619	0.000603	0.001	0.000352	0.000353	0.000722	0.000456	0.000302	0.000293	0.00121
Thallium							0.00000475	0.00000475	0.00000475	0.000023	0.000061	0.00000475
Zinc	0.138	0.127	0.15	0.12	0.112	0.121	0.16	0.16	0.143	0.103	0.102	0.102
Hardness										107	104	96.0
Oil & Grease,HEM, T							12	16	15	15	16	15

PARAMETER mg/L	5-Oct-10	6-Oct-10	7-Oct-10	1-Feb-11	2-Feb-11	3-Feb-11	27-Sep-11	28-Sep-11	29-Sep-11
Aluminum	0.577	0.47	0.921	0.292	0.386	0.717	0.384	0.334	0.388
Antimony	0.00237	0.00321	0.00332	0.00195	0.00272	0.00277	0.00166	0.000524	0.00136
Arsenic	0.000510	0.000583	0.000994	0.000150	0.000674	0.000676	0.000574	0.0014	0.000776
Beryllium	0.000020	0.000004	0.000019	0.000004	0.000004	0.0000096	0.00000765	0.000038	0.000023
Cadmium	0.000142	0.000157	0.000138	D @ 0.00007(	0.00013	0.000246	0.000174	0.000307	0.000181
Chromium	0.00172	0.00129	0.00116	0.00125	0.0018	0.00322	0.00202	0.00583	0.00176
Copper	0.0324	0.0326	0.0342	0.024	0.0318	0.0368	0.0321	0.0296	0.0303
Cyanide	0.00075	0.0023	0.002	0.00075	0.0026	0.004	0.0012	0.0012	0.0045
Fluoride	1.39	0.948	0.513	0.804	0.239	1.11	0.404	0.7	1.05
Iron	0.627	0.512	0.457	0.522	0.608	0.974	0.39	0.372	0.428
Lead	0.00197	0.00261	0.00190	0.00101	0.00146	0.00296	0.00196	0.00162	0.00185
Mercury	0.000132	0.000152	0.0000843	0.000107	0.000347	0.0000671	0.0000761	0.000106	0.0000812
Molybdenum	0.00111	0.00337	0.00216	0.00211	0.00106	0.00134	0.00127	0.0023	0.00162
Nickel	0.00274	0.00233	0.00314	0.00324	0.00347	0.00511	0.0031	0.00308	0.00315
Selenium	0.000928	0.000706	0.000952	0.0001845	0.00044	0.0001845	0.00045	0.000556	0.00041
Silver	0.000354	0.000346	0.00152	0.000136	0.000529	0.000674	0.000195	0.000892	0.000432
Thallium	0.00000885	0.00000885	0.00000885	0.00000885	0.00000885	0.00000885	0.0000192	0.0000192	0.0000192
Zinc	0.135	0.128	0.115	0.105	0.116	0.14	0.126	0.0907	0.123
Hardness									
Oil & Grease,HEM, T	26	5.3	26	10	9.7	15	14	16	15

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-1: Water Restoration Plant Liquid Stream Monitoring Results (POCs)

PARAMETER mg/L	WRP EFFLUENT MONITORING RESULTS											
	11-Aug-08	12-Aug-08	13-Aug-08	20-Jan-09	21-Jan-09	22-Jan-09	18-Aug-09	19-Aug-09	20-Aug-09	23-Feb-10	24-Feb-10	25-Feb-10
Aluminum	0.0352	0.0336	0.0328	0.0357	0.0366	0.047	0.0403	0.0375	0.0324	0.0807	0.0570	0.101
Antimony				0.000234	0.000224	0.000209	0.000263	0.000205	0.000213	0.00017	0.00012	0.000072
Arsenic	0.00025	0.000678	0.000749	0.000824	0.000589	0.000603	0.000177	0.0008	0.000648	0.000775	0.00042	0.000595
Beryllium				0.0000028	0.0000028		0.000014	0.000014	0.00001445	0.0000028	0.0000028	0.0000028
Cadmium	0.00005	0.00005	0.00005	0.000013	0.000023	0.000018	0.00006	0.0000038	0.000021	0.000030	0.000064	0.0000085
Chromium	0.00034	0.00028	0.00032	0.000728	0.000605	0.000629	0.00047	0.000565	0.00042	0.00191	0.00036	0.00029
Copper	0.00694	0.00665	0.00706	0.012	0.00818	0.00978	0.00619	0.00546	0.00555	0.0116	0.00549	0.00462
Cyanide	0.0015	0.0015	0.0015	0.0025	0.004	0.0028	0.0436	0.022	0.00075	0.0015	0.00440	0.0016
Fluoride	0.062	0.085	0.097	0.067	0.0135	0.048	0.288	0.0135	0.0135	0.040	0.061	0.077
Iron	0.0992	0.0892	0.0911	0.0604	0.0689	0.0821	0.0576	0.0604	0.0536	0.00105	0.00105	0.00105
Lead	0.000272	0.000294	0.000314	0.000412	0.000468	0.00049	0.000377	0.000316	0.000318	0.000521	0.000287	0.000249
Mercury	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000226	0.0000038	0.00000058	0.0000037	0.00000545	0.00000356
Molybdenum	0.00118	0.00212	0.00178	0.00206	0.00109	0.00141	0.00153	0.00154	0.00142	0.00102	0.00109	0.00120
Nickel	0.00167	0.00162	0.00158	0.00244	0.00231	0.00208	0.00314	0.0035	0.00322	0.00039	0.00127	0.000890
Selenium	0.00018	0.00007	0.00007	0.000511	0.000684	0.00049	0.00007	0.00029	0.00007	0.0004	0.000552	0.00040
Silver	0.000056	0.00006	0.000054	0.00012	0.000256	0.000193	0.000031	0.000025	0.000023	0.000037	0.000044	0.000143
Thallium							0.000005	0.000005	0.000005	0.00000475	0.000015	0.00000475
Zinc	0.0225	0.0239	0.0267	0.036	0.0328	0.0335	0.0411	0.0357	0.0348	0.0465	0.0402	0.0438
Hardness				86.8	90.9	88.6	80.6	83.7	72	101	99.1	92.3
Oil & Grease,HEM, T							0.75	0.75	7.1	0.9	0.9	0.9

PARAMETER mg/L	5-Oct-10	6-Oct-10	7-Oct-10	1-Feb-11	2-Feb-11	3-Feb-11	27-Sep-11	28-Sep-11	29-Sep-11
Aluminum	0.0571	0.0502	0.0505	0.0307	0.0443	0.0422	0.0497	0.0332	0.0518
Antimony	0.00254	0.00258	0.00277	0.00018	0.00018	0.000206	0.00021	0.000357	0.000327
Arsenic	0.00015	0.000526	0.00113	0.000622	0.000519	0.00087	0.000593	0.00035	0.00039
Beryllium	0.000004	0.000004	0.000004	0.000004	0.000004	0.000004	0.00000765	0.00000765	0.000019
Cadmium	0.00003905	0.00003905	0.00003905	0.00003905	0.00003905	0.00003905	0.00002595	0.00002595	0.00002595
Chromium	0.00033	0.00021	0.00002645	0.00002645	0.000572	0.00098	0.00035	0.000481	0.00092
Copper	0.00528	0.00507	0.0063	0.00394	0.00872	0.00765	0.00401	0.00463	0.00565
Cyanide	0.00075	0.00075	0.0023	0.00075	0.0025	0.0035	0.0012	0.0012	0.0024
Fluoride	0.662	0.099	0.088	0.044	0.069	0.016	0.12	0.096	0.087
Iron	0.094	0.0856	0.0776	0.274	0.302	0.274	0.00235	0.00235	0.00235
Lead	0.000379	0.00036	0.00046	0.000277	0.000308	0.00030	0.000264	0.000236	0.00037
Mercury	0.00000514	0.00000465	0.00000456	0.00000487	0.00000611	0.00000504	0.00000272	0.00000296	0.00000582
Molybdenum	0.0005	0.00133	0.00117	0.00171	0.00108	0.00112	0.00114	0.00164	0.00132
Nickel	0.0017	0.00144	0.00182	0.00189	0.00213	0.00259	0.00205	0.00211	0.00245
Selenium	0.0001845	0.00047	0.000615	0.0001845	0.0001845	0.0001845	0.0001645	0.00046	0.0001645
Silver	0.000033	0.00003	0.000039	0.000025	0.000042	0.000069	0.000022	0.00008	0.000067
Thallium	0.00000885	0.00000885	0.00000885	0.00000885	0.00000885	0.00000885	0.0000192	0.0000192	0.0000192
Zinc	0.0554	0.0626	0.0621	0.0433	0.0422	0.0406	0.0312	0.0341	0.0543
Hardness	88.8	89.8	90.5	95.9	95	93	88.7	85.1	87.3
Oil & Grease,HEM, T	0.9	0.9	0.9	0.65	0.65	0.65	0.65	0.65	0.65

Color Coding Key:
Half of MDL. Value
No Sampling Conducted
Not Included in Average

Attachment D-1: Water Restoration Plant Liquid Stream Monitoring Results (POCs)

	PRIMARY CLARIFIER INFLUENT MONITORING RESULTS											
PARAMETER mg/L	**11-Aug-08**	**12-Aug-08**	**13-Aug-08**	**20-Jan-09**	**21-Jan-09**	**22-Jan-09**	**18-Aug-09**	**19-Aug-09**	**20-Aug-09**	**23-Feb-10**	**24-Feb-10**	**25-Feb-10**
Aluminum	0.876	0.724	1.06	0.716	0.664	0.526	0.808	0.651	0.622	0.508	0.582	0.405
Antimony							0.000502	0.000302	0.000385	0.000388	0.000229	0.00012
Arsenic	0.00109	0.0005	0.00037	0.00105	0.00118	0.000897	0.000721	0.00149	0.000827	0.000880	0.000750	0.000641
Beryllium							0.00001445	0.00001445	0.0001	0.000019	0.000011	0.0000028
Cadmium	0.000225	0.000157	0.000191	0.000154	0.00019	0.00015	0.000183	0.00019	0.000145	0.000196	0.000183	0.000139
Chromium	0.00226	0.00226	0.00275	0.00252	0.00222	0.00179	0.00209	0.00182	0.00183	0.00149	0.00148	0.00124
Copper	0.058	0.0539	0.0665	0.0602	0.054	0.0396	0.0433	0.04	0.0435	0.0306	0.0333	0.0274
Cyanide	0.00075	0.00075	0.00075	0.0028	0.0036	0.0032	0.00075	0.00075	0.00075	0.0021	0.0020	0.0018
Fluoride	0.869	0.495	0.859	1.38	1.58	1.28	1.62	0.262	1.51	0.11	0.13	0.097
Iron	0.867	0.0754	0.988	0.721	0.681	0.57	0.907	0.808	0.768	0.490	0.558	0.347
Lead	0.00364	0.00344	0.0062	0.00377	0.00454	0.00229	0.00289	0.00221	0.00223	0.00314	0.00194	0.00288
Mercury	0.000401	0.000278	0.000456	0.00015	0.000091	0.0002	0.000129	0.000548	0.0000761	0.000180	0.0000349	0.0000731
Molybdenum	0.00167	0.00274	0.00219	0.00268	0.00151	0.00162	0.00192	0.00186	0.00166	0.00227	0.00127	0.00218
Nickel	0.00332	0.00322	0.00386	0.0046	0.00426	0.00412	0.0016	0.00461	0.00477	0.00151	0.00277	0.00205
Selenium	0.0004	0.000671	0.000565	0.000643	0.00117	0.000825	0.00036	0.000657	0.00049	0.000781	0.000817	0.000756
Silver	0.00073	0.00136	0.00118	0.000858	0.0023	0.000655	0.000385	0.000381	0.000363	0.000302	0.000582	0.00123
Thallium							0.00000475	0.00000475	0.00000475	0.00031	0.00000475	0.00000475
Zinc	0.147	0.139	0.156	0.141	0.116	0.0882	0.17	0.401	0.155	0.106	0.108	0.109

PARAMETER mg/L	**5-Oct-10**	**6-Oct-10**	**7-Oct-10**	**1-Feb-11**	**2-Feb-11**	**3-Feb-11**	**27-Sep-11**	**28-Sep-11**	**29-Sep-11**
Aluminum	0.624	0.552	1.18	0.331	0.342	0.633	0.812	0.917	0.794
Antimony	0.00222	0.00253	0.00358	0.000216	0.000269	0.000486	0.000491	0.00115	0.00164
Arsenic	0.000613	0.000655	0.00106	0.000798	0.00015	0.000921	0.000926	0.000987	0.0012
Beryllium	0.000014	0.000004	0.000004	0.000004	0.000015	0.000014	0.000026	0.00002	0.00000765
Cadmium	0.000137	0.000159	0.000181	0.000096	0.000115	0.00015	0.000225	0.000421	0.000381
Chromium	0.00177	0.00144	0.00220	0.00138	0.00156	0.00262	0.00321	0.00446	0.00640
Copper	0.0335	0.0352	0.0459	0.026	0.0287	0.0376	0.0527	0.0573	0.0527
Cyanide	0.0024	0.00075	0.0022	0.0034	0.003	0.0037	0.0012	0.0012	0.0061
Fluoride	1.64	1.20	0.637	0.407	0.14	1.01	1.01	1.36	1.84
Iron	0.710	0.675	0.756	0.572	0.663	0.931	0.971	1.1	0.875
Lead	0.00274	0.00255	0.00230	0.00103	0.00115	0.00230	0.0037	0.00439	0.00542
Mercury	0.000125	0.00013	0.000127	0.000132	0.0000561	0.0000612	0.00013	0.00025	0.000223
Molybdenum	0.000965	0.00236	0.00147	0.00164	0.00246	0.00187	0.00203	0.00312	0.0021
Nickel	0.00289	0.00287	0.00366	0.00349	0.00327	0.0044	0.00408	0.00533	0.0053
Selenium	0.000636	0.00050	0.00101	0.0001845	0.00056	0.000731	0.000801	0.00122	0.000507
Silver	0.000555	0.000291	0.000912	0.000178	0.000247	0.00144	0.000467	0.00129	0.00071
Thallium	0.00000885	0.00000885	0.00000885	0.00000885	0.000044	0.00000885	0.0000192	0.0000192	0.0000192
Zinc	0.134	0.126	0.157	0.0752	0.0846	0.106	0.168	0.205	0.205

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-1: Water Restoration Plant Liquid Stream Monitoring Results (POCs)

PARAMETER mg/L	PRIMARY CLARIFIER EFFLUENT MONITORING RESULTS											
	11-Aug-08	12-Aug-08	13-Aug-08	20-Jan-09	21-Jan-09	22-Jan-09	18-Aug-09	19-Aug-09	20-Aug-09	23-Feb-10	24-Feb-10	25-Feb-10
Aluminum	0.294	0.266	0.363	0.298	0.32	0.346	0.244	0.3	0.234	0.283	0.291	0.225
Antimony							0.000239	0.000269	0.000244	0.000249	0.00015	0.000089
Arsenic	0.000823	0.000502	0.000514	0.00111	0.000827	0.00046	0.00046	0.000848	0.000824	0.000771	0.000732	0.000514
Beryllium							0.00001445	0.00001445	0.00001445	0.000013	0.0000084	0.0000028
Cadmium	0.000058	0.000073	0.000071	0.000053	0.000122	0.000106	0.000102	0.000107	0.000059	0.000134	0.000127	0.000117
Chromium	0.00253	0.00197	0.00158	0.00156	0.00138	0.00121	0.00098	0.00134	0.00108	0.000941	0.000932	0.000802
Copper	0.0317	0.0305	0.0335	0.0345	0.0277	0.0282	0.0234	0.0278	0.0269	0.0206	0.0215	0.0179
Cyanide	0.00075	0.00075	0.00075	0.0036	0.0034	0.0053	0.00075	0.0087	0.0022	0.0021	0.0025	0.0015
Fluoride	0.2	0.15	0.13	0.899	0.525	0.808	0.13	0.211	0.512	0.13	0.11	0.094
Iron	0.378	0.325	0.387	0.382	0.362	0.377	0.403	0.435	0.426	0.217	0.232	0.180
Lead	0.00138	0.00153	0.00251	0.00153	0.00209	0.00148	0.00209	0.00139	0.00109	0.000896	0.000791	0.00148
Mercury	0.000077	0.0000075	0.000051	0.000061	0.00014	0.000049	0.0000038	0.0000226	0.0000172	0.000217	0.0000509	0.0000130
Molybdenum	0.00189	0.0024	0.00175	0.00204	0.0011	0.00164	0.00126	0.00229	0.00193	0.00176	0.00131	0.00146
Nickel	0.00227	0.00214	0.00231	0.00326	0.00292	0.00292	0.00565	0.00998	0.00425	0.00114	0.00186	0.00141
Selenium	0.00007	0.00016	0.00048	0.00083	0.000802	0.000753	0.000541	0.000618	0.000548	0.00046	0.000707	0.000683
Silver	0.000333	0.000432	0.000372	0.000456	0.000852	0.000217	0.000122	0.000185	0.000169	0.000200	0.000240	0.000626
Thallium							0.00000475	0.00000475	0.00000475	0.00013	0.00000475	0.00000475
Zinc	0.087	0.0729	0.0832	0.0816	0.0719	0.0686	0.135	0.527	0.0941	0.0686	0.0701	0.0763

PARAMETER mg/L	5-Oct-10	6-Oct-10	7-Oct-10	1-Feb-11	2-Feb-11	3-Feb-11	27-Sep-11	28-Sep-11	29-Sep-11
Aluminum	0.269	0.23	0.493	0.179	0.218	0.262	0.236	0.258	0.226
Antimony	0.00217	0.000306	0.00286	0.00215	0.0019	0.00256	0.00029	0.000486	0.00129
Arsenic	0.00041	0.000614	0.000838	0.00089	0.000724	0.000982	0.00036	0.000619	0.000715
Beryllium	0.000004	0.000004	0.000004	0.000004	0.000004	0.000004	0.00000765	0.00000765	0.000025
Cadmium	0.00003905	0.00003905	0.00003905	0.000086	0.000097	0.0001	0.00012	0.000171	0.000153
Chromium	0.000954	0.000852	0.00082	0.000921	0.00131	0.00153	0.00128	0.00208	0.00143
Copper	0.0216	0.0222	0.0244	0.0205	0.0216	0.0237	0.0233	0.0247	0.023
Cyanide	0.002	0.00075	0.0029	0.00075	0.0036	0.0032	0.0012	0.0012	0.0012
Fluoride	1.32	0.67	0.18	0.19	0.18	0.383	0.615	0.39	0.17
Iron	0.384	0.389	0.384	0.453	0.478	0.566	0.278	0.339	0.271
Lead	0.00109	0.00158	0.00110	0.000688	0.000815	0.00113	0.00108	0.0012	0.00107
Mercury	0.0000477	0.0000499	0.0000463	0.0000296	0.0000231		0.0000387	0.0000808	0.0000354
Molybdenum	0.000738	0.00217	0.00114	0.00228	0.00133	0.0014	0.00149	0.00266	0.0022
Nickel	0.00221	0.0021	0.00262	0.00281	0.00281	0.00313	0.00283	0.00303	0.00306
Selenium	0.00047	0.00069	0.000875	0.0001845	0.0001845	0.0001845	0.000569	0.00068	0.00043
Silver	0.000242	0.000159	0.000374	0.000134	0.000199	0.00046	0.000159	0.00128	0.000471
Thallium	0.00000885	0.00000885	0.00000885	0.00000885	0.00000885	0.00000885	0.0000192	0.0000192	0.000076
Zinc	0.0943	0.0847	0.0885	0.0854	0.0921	0.0906	0.0727	0.0726	0.0994

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-2: Water Restoration Plant Liquid Stream Monitoring Results(OPPs)

WRP INFLUENT MONITORING RESULTS

PARAMETER µg/L	19-Aug-08	20-Aug-08	21-Aug-08	20-Jan-09	21-Jan-09	22-Jan-09	18-Aug-09	19-Aug-09	20-Aug-09	23-Feb-10	24-Feb-10	25-Feb-10
SEMIVOLATILE ORGANICS EPA 625												
Bis(2-ethylhexyl)phthalate	8.7	8.7	8.8	7.1	4.4	4.8	7.1	5.2	5.1	4.7	4.8	5.0
Butyl benzyl phthalate	0.15	3.8	2.5	1.5	0.6	0.6	0.15	0.15	0.15	0.15	0.15	0.15
Diethyl phthalate	3.5	3.4	2.9	0.17	1.8	1.8	2	2.3	1.5	2.8	3.0	2.6
Di-n-butyl phthalate	0.18	3.8	2.7	0.18	0.18	0.8	1.7	0.18	0.18	0.18	0.18	0.18
Di-n-octyl phthalate	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Hexachlorocyclopentadiene	0.295	1	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295
2,4-Dichlorophenol	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Phenol	6.2	2	0.7	1.7	0.6	1.2	3.8	1.6	1.4	2.2	2	1
2-Methylphenol (Cresol)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
4-Methylphenol (Cresol)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	10	7	5
VOLATILE ORGANICS EPA 624												
Benzene	0.061	7.8	0.5	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
Bromodichloromethane	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.3	0.2	0.2
1,4-Dichlorobenzene	0.5	0.6	0.85	0.62	0.5	0.75	1.1	0.81	0.72	0.66	0.72	0.4
Chloroform	2.1	2.5	8.8	2.3	2.3	4	3.2	3	3	2.7	2.5	2.9
Ethylbenzene	0.053	4.9	0.51	0.053	0.053	0.053	0.5	0.053	0.053	0.053	0.053	0.053
Tetrachloroethene	0.3	0.083	0.083	0.083	0.083	0.68	0.083	0.083	0.083	0.3	0.4	0.083
Toluene	1	34	4	1	0.4	0.53	1.2	2.3	1.5	0.70	1.4	0.85
1,2,4-Trichlorobenzene	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117
Xylenes	0.18	25	2.8	0.7	0.18	0.18	2.4	0.18	0.18	0.18	0.18	0.18

PARAMETER µg/L	4-Oct-10	5-Oct-10	6-Oct-10	1-Feb-11	2-Feb-11	3-Feb-11	27-Sep-11	28-Sep-11	29-Sep-11
SEMIVOLATILE ORGANICS EPA 625									
Bis(2-ethylhexyl)phthalate	0.4	0.4	11	17	16	18	9.5	9.6	9
Butyl benzyl phthalate	0.15	0.15	0.15	0.15	0.15	0.15	1.8	1.4	1.9
Diethyl phthalate	0.17	0.17	0.17	10	0.17	10	3.9	3.5	4
Di-n-butyl phthalate	0.18	0.18	0.18	0.18	0.18	0.18	1	1.1	
Di-n-octyl phthalate	0.19	0.19	0.19	0.19	0.19	9	0.19	0.19	0.19
Hexachlorocyclopentadiene	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295
2,4-Dichlorophenol	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Phenol	0.23	0.23	0.23	5	4	5	2.0	2.3	1.4
2-Methylphenol (Cresol)	0.5	0.5	0.5	8	20	20	0.5	0.5	0.5
4-Methylphenol (Cresol)	0.5	10	8	30	10	30	12	11	7.4
VOLATILE ORGANICS EPA 624									
Benzene	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
Bromodichloromethane	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.2	0.2
1,4-Dichlorobenzene	0.59	0.4	0.3	0.64	0.54	0.50	0.56	0.5	0.4
Chloroform	0.5	0.58	4.5	3.2	2.8	2.6	3.5	3.0	3.0
Ethylbenzene	0.2	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053
Tetrachloroethene	0.083	0.083	0.083	0.083	0.083	0.2	0.083	0.083	0.083
Toluene	1.9	1.2		0.58	0.4	0.5	2.7	1.8	1.7
1,2,4-Trichlorobenzene	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117
Xylenes	1	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18

Color Coding Key:
Half of MDL. Value

Attachment D-2: Water Restoration Plant Liquid Stream Monitoring Results(OPPs)

WRP EFFFLUENT MONITORING RESULTS

PARAMETER µg/L	19-Aug-08	20-Aug-08	21-Aug-08	20-Jan-09	21-Jan-09	22-Jan-09	18-Aug-09	19-Aug-09	20-Aug-09	23-Feb-10	24-Feb-10	25-Feb-10
SEMIVOLATILE ORGANICS EPA 625												
Bis(2-ethylhexyl)phthalate	1.6	1.4	0.4	0.4	0.4	0.4	0.4	0.9	0.4	0.4	0.4	0.4
Butyl benzyl phthalate	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Diethyl phthalate	1	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Di-n-butyl phthalate	1	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Di-n-octyl phthalate	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Hexachlorocyclopentadiene	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295
2,4-Dichlorophenol	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Phenol	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.6	0.5	0.23	0.23	0.23
2-Methylphenol (Cresol)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
4-Methylphenol (Cresol)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
VOLATILE ORGANICS EPA 624												
Benzene	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
Bromodichloromethane	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525
1,4-Dichlorobenzene	0.2	0.3	0.3	0.3	0.5	0.5	0.55	0.3	0.3	0.5	0.4	0.4
Chloroform	1.1	1.1	0.98	1.2	1.3	1.6	0.77	0.6	0.57	1.3	1.2	1.5
Ethylbenzene	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053
Tetrachloroethene	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.2	0.083	0.083
Toluene	0.3	0.3	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.2	0.2	0.05
1,2,4-Trichlorobenzene	0.71	0.117	0.177	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117
Xylenes	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18

PARAMETER µg/L	4-Oct-10	5-Oct-10	6-Oct-10	1-Feb-11	2-Feb-11	3-Feb-11	27-Sep-11	28-Sep-11	29-Sep-11
SEMIVOLATILE ORGANICS EPA 625									
Bis(2-ethylhexyl)phthalate	0.4	0.4	0.4	2.0	2.2	2.2	0.4	0.4	0.4
Butyl benzyl phthalate	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Diethyl phthalate	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Di-n-butyl phthalate	0.18	0.18	0.18	0.18	0.18	0.18	0.4	0.18	0.18
Di-n-octyl phthalate	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Hexachlorocyclopentadiene	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295
2,4-Dichlorophenol	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Phenol	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.3	0.23
2-Methylphenol (Cresol)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
4-Methylphenol (Cresol)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
VOLATILE ORGANICS EPA 624									
Benzene	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
Bromodichloromethane	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525
1,4-Dichlorobenzene	0.2	0.2	0.58	0.3	0.3	0.3	0.4	0.175	0.175
Chloroform	0.5	0.58	4.5	0.71	0.66	0.65	2.5	0.4	0.4
Ethylbenzene	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053
Tetrachloroethene	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
Toluene	0.3	0.4	1.5				1.7	0.4	0.4
1,2,4-Trichlorobenzene	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117
Xylenes	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18

Color Coding Key:
Half of MDL. Value

Attachment D-2: Water Restoration Plant Liquid Stream Monitoring Results(OPPs)

PRIMARY CLARIFIER INFLUENT MONITORING RESULTS

PARAMETER µg/L	19-Aug-08	20-Aug-08	21-Aug-08	18-Aug-09	19-Aug-09	20-Aug-09	5-Oct-10	6-Oct-10	7-Oct-10	27-Sep-11	28-Sep-11	29-Sep-11
SEMIVOLATILE ORGANICS EPA 625												
Bis(2-ethylhexyl)phthalate	18	12	12	4	4.2	3.9	0.4	0.4	0.4	12	13	10
Butyl benzyl phthalate	2.8	3.4	3	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Diethyl phthalate	3.8	3	4	1.8	2	1.5	0.17	0.17	0.17	3.3	3.2	3.9
Di-n-butyl phthalate	4.1	4.8	4.3	0.18	0.18	0.18	0.18	0.18	0.18	0.6	0.7	1.1
Di-n-octyl phthalate	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Hexachlorocyclopentadiene	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295
2,4-Dichlorophenol	0.28	2.4	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Phenol	7.1	4.2	1.9	2.1	1.6	3.1	0.28	0.28	0.28	1.7	1.9	1.1
2-Methylphenol (Cresol)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
4-Methylphenol (Cresol)	0.5	0.5	0.5	0.5	0.5	0.5	7	9	6	4.8	5.4	5.7
VOLATILE ORGANICS EPA 624												
Benzene	0.061	5.4	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
Bromodichloromethane	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.2	0.1525
1,4-Dichlorobenzene	0.57	0.59	0.65	0.92	0.7	0.97	0.4	0.4	0.52	0.51	0.4	0.4
Chloroform	7.5	2.5	3	2.8	2.7	3.2	2.7	2.6	4.4	3.2	2.7	2.6
Ethylbenzene	0.053	3.2	0.4	0.3	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053
Tetrachloroethene	0.66	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
Toluene	1.3	23	3.7	1.4	1.9	1.6	2.0	1.6	2.6	1.8	1.9	1.5
1,2,4-Trichlorobenzene	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117
Xylenes	0.18	17	2.2	1	0.18	0.18	1	0.18	0.18	0.18	0.18	0.18

Color Coding Key:
Half of MDL. Value

Attachment D-2: Water Restoration Plant Liquid Stream Monitoring Results(OPPs)

PRIMARY CLARIFIER EFFLUENT MONITORING RESULTS

PARAMETER µg/L	19-Aug-08	20-Aug-08	21-Aug-08	18-Aug-09	19-Aug-09	20-Aug-09	5-Oct-10	6-Oct-10	7-Oct-10	27-Sep-11	28-Sep-11	29-Sep-11
SEMIVOLATILE ORGANICS EPA 625												
Bis(2-ethylhexyl)phthalate	7	4.9	7.2	2.8	5.3	3.8	0.4	0.4	6.0	4.6	5	6.7
Butyl benzyl phthalate	0.15	2.6	1.9	0.15	0.15	0.15	0.15	0.15	0.15	0.8	0.15	1
Diethyl phthalate	3	2.8	3.3	1.8	2.6	2	0.17	0.17	0.17	3.1	3.1	3.2
Di-n-butyl phthalate	1.6	2.2	2.3	6.4	1	0.18	0.18	0.18	0.18	0.9	1	0.8
Di-n-octyl phthalate	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Hexachlorocyclopentadiene	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295	0.295
2,4-Dichlorophenol	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Phenol	7.5	0.9	1.7	3.1	6	4.7	0.23	0.23	0.23	0.8	0.6	0.9
2-Methylphenol (Cresol)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
4-Methylphenol (Cresol)	0.5	0.5	0.5	0.5	0.5	0.5	5	7	0.5	1.8	1.7	2.5
VOLATILE ORGANICS EPA 624												
Benzene	0.061	0.63	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
Bromodichloromethane	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.1525	0.2	0.1525
1,4-Dichlorobenzene	0.51	0.5	0.61	0.67	0.68	0.77	0.4	0.4	0.4	0.175	0.4	0.3
Chloroform	2.1	2.1	3	2	2.4	2.9	2.5	2.2	3.5	0.52	2.2	2
Ethylbenzene	0.053	0.4	0.053	0.4	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053
Tetrachloroethene	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
Toluene	1.2	3.5	1.4	1.2	2.4	1.6	2.0	1.1	2.1	0.4	1.6	1.3
1,2,4-Trichlorobenzene	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117
Xylenes	0.18	1.9	0.18	2.3	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18

Color Coding Key:
Half of MDL. Value

Attachment D-3: Water Restoration Plant Solids Stream Monitoring Results

PARAMETER mg/Kg-dry	GRAVITY THICKENER							
	9-Sep-08	18-Nov-08	17-Mar-09	11-May-09	13-Jul-09	15-Sep-09	9-Mar-10	10-May-10
Aluminum	2110	3750	2140	2580	2960	3960	2150	2390
Antimony								
Arsenic	1.03	1.83	1.32	1.66	0.65	1.84	0.74	0.78
Beryllium								
Cadmium	0.484	0.972	0.475	0.817	0.834	1.01	0.475	0.434
Chromium	5.41	9.26	6.4	8.17	6.91	12.2	5.97	7.51
Copper	102	173	88.1	129	124	195	78.8	113
Iron	1670	3020	1910	2280	2700	3110	1820	2160
Lead	7.26	14.3	8.11	11.9	14.6	14.5	5.48	7.90
Mercury	0.295	3.65	0.394	0.779	0.525	0.444	0.595	0.261
Molybdenum	1.36	2.66	1.64	2.2	1.97	3.22	1.74	2.17
Nickel	3.81	8.68	6.39	8.35	6.93	9.67	11.3	6.98
Selenium	2.06	3.16	2.85	2.87	2.93	4.45	10.5	3.49
Silver	2.03	3.17	3.18	3.61	2.07	3.27	1.11	1.39
Thallium								
Zinc	314	522	283	470	500	655	204	288
%Total Solids							3.41	3.21

PARAMETER mg/Kg-dry	14-Jul-10	21-Sep-10	7-Dec-10	11-Jan-11	16-Mar-11	25-May-11	13-Jul-11	21-Sep-11	15-Nov-11
Aluminum	4190	3120	2110	2240	2510	1980	2420	2850	1690
Antimony									
Arsenic	1.73	1.5	1.46	6.55	0.895	1.16	1.71	2.01	1.67
Beryllium									
Cadmium	0.003315	0.553	0.34	0.184	0.569	0.183	0.443	1.07	0.683
Chromium	11.4	9.58	8	9.0	12.3	7.31	8.30	10.0	5.97
Copper	170	103	88.4	81.4	99.3	68.7	124	126	76.2
Iron	3590	2740	2560	2340	3270	2130	2370	2860	2030
Lead	13.2	10.3	8	4.09	7.79	9.01	12.8	10.1	6.39
Mercury	4.95	0.333	0.51	1.12	0.3495	0.18	0.4	0.75	0.35
Molybdenum	2.72	2.13	3.8	13	2.29	1.76	2.39	2.56	1.97
Nickel	9.40	7.99	6.8	6.9	9.59	5.81	7.05	8.07	5.10
Selenium	4.45	2.82	0.65	19	2.55	2.41	3.41	4.27	3.40
Silver	2.91	2.06	1.6	1.7	1.67	1.10	1.59	2.15	1.24
Thallium									
Zinc	584	407	332	230	229	316	408	443	308
%Total Solids	3.30	4.29	2.94	3.18	2.80	4.54	3.96	4.61	3.71

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-3: Water Restoration Plant Solids Stream Monitoring Results

PARAMETER mg/Kg-dry	GRAVITY BELT THICKENER							
	9-Sep-08	18-Nov-08	17-Mar-09	11-May-09	13-Jul-09	15-Sep-09	9-Mar-10	10-May-10
Aluminum	2820	3850	3250	2710	2250	2610	3100	2610
Antimony								
Arsenic	2.37	2.58	2.97	2.63	1.64	2.34	2.62	2.26
Beryllium								
Cadmium	0.727	1.34	1.02	1.03	0.734	0.97	0.867	0.725
Chromium	7.27	8.75	8.03	6.82	5.5	7.51	8.41	7.73
Copper	232	256	217	234	174	255	207	202
Iron	2640	3400	3100	2710	2560	3410	3370	2830
Lead	9.8	12.7	7.8	9.51	9.51	9.37	7.21	7.89
Mercury	0.444	0.499	0.242	0.496	0.352	0.411	0.4525	0.297
Molybdenum	2.21	2.82	2.95	2.45	1.9	2.75	3.06	2.87
Nickel	4.8	8.84	8.71	8.4	5.44	6.93	19.8	7.74
Selenium	4.01	4.12	4.41	3.83	3.24	4.52	14.7	4.7
Silver	3.08	3.42	2.89	3.53	1.5	2.46	2.03	1.53
Thallium								
Zinc	430	485	445	527	386	437	327	342
%Total Solids							4.40	4.12

PARAMETER mg/Kg-dry	14-Jul-10	21-Sep-10	7-Dec-10	11-Jan-11	16-Mar-11	25-May-11	13-Jul-11	21-Sep-11	15-Nov-11
Aluminum	3290	2940	3670	4610	4200	1720	1710	2260	2040
Antimony									
Arsenic	2.05	2.91	0.875	4.71	2.39	1.88	2.24	2.69	3.69
Beryllium									
Cadmium	0.0706	0.734	0.89	0.68	0.816	0.181	0.414	0.586	0.675
Chromium	8.28	8.43	11.1	14	12.8	5.58	5.81	7.59	7.41
Copper	250	232	231	222	225	117	176	181	175
Iron	2800	4190	4720	5440	3630	2360	2160	3480	2760
Lead	10.2	9.55	12	6.3	6.68	5.28	6.30	5.59	6.40
Mercury	2.27	0.153	0.28	0.55	0.219	0.15	0.19	0.19	0.069
Molybdenum	2.49	3.49	4.7	6.8	3.5	2.31	2.40	3.01	3.26
Nickel	6.44	8.25	12	17	13.4	4.59	4.66	6.10	6.96
Selenium	4.00	3.7	5.5	6.85	4.43	2.99	2.90	4.51	6.33
Silver	2.16	2.21	2.8	4.2	2.24	1.36	1.56	1.83	2.07
Thallium									
Zinc	344	273	346	309	359	238	194	284	306
%Total Solids	4.77	4.76	4.85	4.47	4.50	4.09	4.11	4.44	4.57

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-3: Water Restoration Plant Solids Stream Monitoring Results

PARAMETER mg/Kg-dry	DIGESTER #1							
	9-Sep-08	18-Nov-08	17-Mar-09	11-May-09	13-Jul-09	15-Sep-09	9-Mar-10	10-May-10
Aluminum	4010	4480	3870	5940	1930	5570	6110	1800
Antimony								
Arsenic	2.15	2.22	2.02	3.66	0.945	2.72	2.95	0.96
Beryllium								
Cadmium	1.07	1.41	0.989	2.02	0.526	1.71	3.69	0.280
Chromium	12.4	12.9	10.6	17.3	4.95	17.3	17.0	6.10
Copper	276	257	218	395	101	365	291	118
Iron	3800	4380	3800	5910	1770	6510	6170	1850
Lead	16.9	22.7	14.1	29.3	13.8	27.2	17.2	6.21
Mercury	1.13	1.29	2	2.08	2.64	1.34	2.66	0.708
Molybdenum	3.05	3.27	3.58	5.43	0.945	5.32	5.06	0.96
Nickel	8.33	10.4	11	18	5.82	14.9	28.5	5.89
Selenium	3.83	3.05	4.27	5.08	2.12	6.15	8.11	2.62
Silver	4.9	4.38	5.47	8.89	1.42	5.62	5.71	1.08
Thallium								
Zinc	686	618	387	1010	340	772	658	225
%Total Solids							2.71	2.61

PARAMETER mg/Kg-dry	14-Jul-10	21-Sep-10	7-Dec-10	11-Jan-11	16-Mar-11	25-May-11	13-Jul-11	21-Sep-11	15-Nov-11
Aluminum	5640	5490	3520	6980	4490	4250	4050	3070	3420
Antimony									
Arsenic	0.139	3.05	1.17	6.8	2.07	2.37	3.02	2.16	2.89
Beryllium									
Cadmium	0.00545	1.25	0.85	0.87	0.978	0.470	0.952	0.749	1.07
Chromium	14.1	16.4	12.7	25	14.5	13.7	13.2	10.3	11.3
Copper	270	321	192	300	224	206	282	187	222
Iron	4890	6350	4260	7870	4130	5170	4960	3920	4250
Lead	18.1	18.9	15	17	9.45	10.1	14.1	9.86	11.0
Mercury	6.09	0.620	1.08	1.09	0.3165	0.44	0.46	0.67	0.49
Molybdenum	3.83	5.19	3.9	19	3.78	4.14	4.60	3.44	4.21
Nickel	11.1	16.3	11	26	14.3	11.8	12.6	8.22	10.1
Selenium	5.71	5.32	3.6	9.9	3.62	4.53	5.31	4.66	5.76
Silver	3.33	4.98	12	4.3	2.63	2.85	3.01	2.45	3.51
Thallium									
Zinc	568	685	442	575	410	525	588	452	541
%Total Solids	2.01	2.60	3.64	3.01	3.14	2.74	2.96	3.18	3.7

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-3: Water Restoration Plant Solids Stream Monitoring Results

PARAMETER mg/Kg-dry	BELT PRESS						
	18-Nov-08	17-Mar-09	11-May-09	13-Jul-09	15-Sep-09	10-May-10	14-Jul-10
Aluminum	6910	9560	5310	7520	7600	5830	9130
Antimony							
Arsenic	2.96	4.12	2.54	9.05	2.73	2.53	2.77
Beryllium							
Cadmium	2.07	2.72	1.89	2.14	2.3	1.37	0.959
Chromium	18.7	32.8	17.4	20.6	22.9	19.6	20.0
Copper	408	515	359	380	372	325	324
Iron	6480	10100	5680	7580	8520	4910	5960
Lead	38.1	33.7	26.5	43.9	26.6	19.8	22.0
Mercury	1.36	1.55	1.33	0.842	0.103	0.355	0.0088
Molybdenum	5.5	7.85	5.36	9.05	5.59	5.27	4.77
Nickel	15	29.7	14.9	21.2	18	19.3	15.6
Selenium	6.65	10.5	6.52	9.05	7.57	6.72	7.40
Silver	7.73	15.4	8.54	7.32	9.01	5.27	7.30
Thallium							
Zinc	1030	1290	959	893	1050	716	963
%Total Solids					12.5	12.7	13.2

PARAMETER mg/Kg-dry	21-Sep-10	7-Dec-10	11-Jan-11	16-Mar-11	25-May-11	13-Jul-11	21-Sep-11	15-Nov-11
Aluminum	5660	5880	6780	6330	5160	5380	5230	4930
Antimony								
Arsenic	2.70	1.57	1.7	2.43	2.21	2.79	3.29	3.76
Beryllium								
Cadmium	1.43	1.4	1.4	1.31	0.478	1.51	1.45	1.42
Chromium	16.4	22.2	21.8	20.7	16.4	18.5	16.5	15.7
Copper	329	319	310	299	237	358	287	284
Iron	6270	6890	8170	5550	6060	6870	6430	6280
Lead	25.9	19	21	13.6	10.9	18.1	14.6	14.0
Mercury	0.383	0.841	4.06	0.425	0.19	0.39	0.19	0.26
Molybdenum	4.98	6.5	6.5	5.18	4.68	5.70	5.05	5.51
Nickel	16.7	19	29	19.2	14.1	17.0	13.1	13.1
Selenium	5.57	6.1	6.0	5.55	5.04	7.25	7.25	7.75
Silver	5.4	6.2	4.7	4.78	3.28	4.02	4.62	5.24
Thallium								
Zinc	711	683	611	547	572	753	683	714
%Total Solids	13.6	13.4	12.6	12.2	11.6	12.9	12.8	11.4

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-3: Water Restoration Plant Solids Stream Monitoring Results

JO-GRO COMPOST

PARAMETER mg/Kg	28-Apr-08	25-Jun-09	8-Jan-09	17-Mar-09	25-Jun-09	25-Aug-09	13-Nov-09	25-Jan-10	10-Mar-10
Aluminum		6950	6600	7200	5500	4300	5000	4600	5700
Antimony	0.25								
Arsenic	2.5	2.44	2.45	2.6	2.85	2.2	2	2.9	2.4
Beryllium	0.075								
Cadmium	0.075	1.6	0.405	0.44	0.475	0.365	0.335	0.48	0.405
Chromium	14.7	23.5	20	19	18	16	16	20	18
Copper	113	183	140	170	180	130	140	15	140
Iron		8460	7900	10000	7200	6700	6500	52000	7200
Lead	13.1	20.5	14	16	17	14	19	15	17
Mercury	0.219	0.279	0.67	0.38	0.56	0.52	0.62	0.74	0.52
Molybdenum	7.5	2.44	1.2	2.4	1.6	2	2	3.8	0.405
Nickel	10.3	20.7	15	15	16	13	15	14	15
Selenium	3	2.44	4.05	0.85	4.75	3.65	7.7	0.48	0.405
Silver	2.94	3.38	2.8	3.3	2.1	1.8	2.6	3.1	3.0
Thallium	2.5								
Zinc	264	431	900	350	320	280	330	18	350
% Total Solids		50.7	58	56	51	68	71	47	54

PARAMETER mg/Kg	21-Jun-10	27-Sep-10	28-Dec-10	18-Jan-11	14-Mar-11	7-Jun-11	29-Aug-11	7-Nov-11
Aluminum	4450	3900	4000	6500	4000	5000	3300	4800
Antimony								
Arsenic	6.2	2.25	2.55	3	3.15	3.55	2.25	2.6
Beryllium								
Cadmium	2.485	0.38	0.425	0.495	0.5	1.2	0.375	0.43
Chromium	14.3	15	14	18	15	18	14	18
Copper	132	120	160	160	150	180	110	110
Iron	5740	5900	6200	7700	5600	7000	5600	7700
Lead	13.6	13	18	16	14	18	13	14
Mercury	0.448	0.63	0.73	0.62	0.99	0.74	0.31	0.46
Molybdenum	6.2	1.6	5.8	1	1.05	1.2	2	0.85
Nickel	13.3	12	15	17	13	16	14	16
Selenium	6.2	3.8	4.25	4.95	5	6	3.75	4.3
Silver	6.2	0.75	2.5	2.5	3.1	1.2	0.75	0.85
Thallium								
Zinc	321	270	370	400	320	400	250	260
% Total Solids	38			50	45	40	55	57

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-4: Collection System Monitoring Results (POCs)

Manhole X65 (Darnielle Pump Station)

PARAMETER mg/L	4-Aug-08	19-Nov-08	19-Feb-09	27-May-09	20-Aug-09	18-Nov-09	25-Feb-10	20-May-10	7-Oct-10	16-Nov-10	3-Feb-11	25-May-11	28-Sep-11	15-Nov-11
Aluminum	2.38	0.393	0.319	1.15	0.264	0.187	0.231	0.111	0.220	0.176	0.164	0.994	0.231	0.296
Antimony			0.00017	0.000312	0.000342	0.00024	0.00017		0.00504	0.000785	0.00015	0.000203	0.00213	0.000143
Arsenic	0.00118	0.00044	0.00045	0.0011	0.000177	0.00099	0.00037	0.000702	0.000840	0.000612	0.00034	0.000679	0.000543	0.000869
Beryllium			0.000028	0.000054	0.0001	0.0000028	0.000020			0.000004	0.000011	0.00000765	0.000035	0.000020
Cadmium	0.000155	0.000112	0.000221	0.00021	0.000136	0.000111	0.000068	0.000079	0.000126	0.00003905	0.00003905	0.00002595	0.000170	0.000139
Chromium	0.00161	0.00124	0.000804	0.00193	0.00108	0.0012	0.00105	0.00107	0.00043	0.000625	0.000797	0.00139	0.00207	0.00150
Copper	0.0574	0.083	0.0266	0.0331	0.0267	0.0395	0.0184	0.0180	0.0175	0.0152	0.0172	0.0245	0.0362	0.0328
Cyanide	0.0016	0.0015	0.0018	0.00075	0.00075	0.00075	0.00075	0.00075	0.0022	0.00075	0.0015	0.0012	0.00340	0.0012
Fluoride	1.13	0.402	0.17	1.52	1.3	0.285	0.459	0.252	0.699	2.52	0.471	0.461	2.19	1.55
Iron	0.255	0.336	0.328	0.45	0.229	0.161	0.278	0.102	0.240	0.328	0.542	0.248	0.28	0.772
Lead	0.00278	0.000606	0.000337	0.00138	0.000721	0.000493	0.000447	0.000465	0.000495	0.000398	0.000278	0.000573	0.00166	0.000858
Mercury	0.000021	0.000016	0.0000075	0.000013	0.0000155	0.0000535	0.000013	0.00000558	0.0000209	0.0000144	0.00000701	0.000013	0.0000104	0.0000165
Molybdenum	0.000743	0.00054	0.00035	0.00062	0.000808	0.00032	0.00044	0.000528	0.00040	0.00049	0.00042	0.00041	0.000645	0.000671
Nickel	0.0025	0.0134	0.0389	0.0274	0.00672	0.0137	0.00177	0.0148	0.00165	0.00143	0.00241	0.00301	0.00415	0.00253
Selenium	0.000622	0.00033	0.000611	0.000522	0.00032	0.000593	0.000822	0.000804	0.000651	0.000569	0.0001845	0.0001645	0.00038	0.0001645
Silver	0.000091	0.000068	0.00007	0.000058	0.000087	0.000047	0.000056	0.000035	0.000050	0.000036	0.000035	0.000981	0.000077	0.000067
Thallium			0.00000475	0.00000475	0.00000475	0.00000475	0.00000475		0.00000885	0.000024	0.000023	0.0000192	0.0000192	0.000043
Zinc	0.167	0.064	0.0596	0.0932	0.123	0.0708	0.0583	0.0385	0.138	0.0370	0.0282	0.0424	0.103	0.0652
O&G HEM, Total	23	22	10	18	21	16	25	14	6.6	16	14	20	16	35
O&G SGT-HEM Non Polar	0.8	1	0.6	0.17		1	0.4							

Manhole NE H17

PARAMETER mg/L	31-Jul-08	18-Nov-08	19-Feb-09	26-May-09	19-Aug-09	18-Nov-09	24-Feb-10	19-May-10	5-Oct-10	15-Nov-10	3-Feb-11	24-May-11	27-Sep-11	14-Nov-11
Aluminum	0.369	0.268	0.268	0.338	0.339	0.386	0.14	1.98	0.142	0.386	0.126	0.299	0.167	0.523
Antimony			0.000204	0.000286	0.000265	0.00011	0.00000515		0.00214	0.00207	0.00251	0.00020	0.000054	0.000210
Arsenic	0.000575	0.000951	0.000828	0.0012	0.00103	0.00126	0.00083	0.000763	0.000576	0.000978	0.00015	0.000779	0.000885	0.00042
Beryllium			0.0000028	0.0000028	0.00001445	0.000031	0.000009			0.000021	0.000004	0.00000765	0.00000765	0.00000765
Cadmium	0.000272	0.000105	0.000152	0.000127	0.000092	0.000173	0.00007	0.000318	0.00003905	0.000115	0.00003905	0.000125	0.000095	0.00002595
Chromium	0.001	0.00175	0.00176	0.00224	0.00143	0.00148	0.000732	0.00174	0.000853	0.00116	0.00100	0.00137	0.000772	0.000904
Copper	0.0395	0.0326	0.0371	0.0283	0.0223	0.0238	0.0472	0.0334	0.0155	0.0226	0.0158	0.0224	0.0143	0.0186
Cyanide	0.0015	0.0015	0.0015	0.00075	0.0214	0.00075	0.0034	0.00075	0.0023	0.00075	0.00260	0.0012	0.0012	0.0012
Fluoride	0.12	0.303	1.29	0.546	0.0135	0.15	0.403	0.18	0.965	0.093	0.14	0.016	0.226	0.093
Iron	0.41	1.08	0.267	0.339	0.357	0.336	0.031	0.499	0.344	0.276	0.3970	0.265	0.184	0.206
Lead	0.00138	0.00137	0.000961	0.00123	0.00135	0.000897	0.000354	0.0027	0.000674	0.000776	0.000428	0.000712	0.000361	0.000844
Mercury	0.00002	0.000038	0.000047	0.00003	0.0000248	0.0000145	0.000010	0.00002416	0.0000493	0.0000255	0.0000166	0.0429	0.0000182	0.0000165
Molybdenum	0.000992	0.000669	0.00347	0.000848	0.000748	0.000799	0.000724	0.00265	0.000693	0.00119	0.00047	0.000943	0.000636	0.000552
Nickel	0.0021	0.00183	0.00223	0.00188	0.0031	0.00322	0.000725	0.0028	0.00115	0.00176	0.00174	0.00221	0.00198	0.00120
Selenium	0.00045	0.000637	0.000534	0.00027	0.00047	0.000863	0.00151	0.00097	0.000597	0.000545	0.00039	0.0001645	0.00047	0.00035
Silver	0.000062	0.000115	0.000078	0.000108	0.000055	0.000114	0.000052	0.000194	0.000030	0.000123	0.000037	0.000098	0.000038	0.000082
Thallium			0.00000475	0.00000475	0.00000475	0.00000475	0.00000475		0.00000885	0.000035	0.00000885	0.0000192	0.0000192	0.0000192
Zinc	0.129	0.15	0.111	0.0776	0.375	0.0946	0.129	0.145	0.0637	0.102	0.0695	0.0979	0.0552	0.0467
O&G HEM, Total	7.4	30	19	29	12	13	12	13	11	28	11	20	9.4	13
O&G SGT-HEM Non Polar	1.5	1.5	0.9	0.17		2	0.4							

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-4: Collection System Monitoring Results (POCs)

Manhole R23 (Redwood Pump Station)

PARAMETER mg/L	4-Aug-08	19-Nov-08	17-Feb-09	27-May-09	18-Aug-09	18-Nov-09	25-Feb-10	19-May-10	7-Oct-10	16-Nov-10	3-Feb-11	25-May-11	28-Sep-11	15-Nov-11
Aluminum	1.54	1.75	0.161	1.15	0.525	0.149	0.372	0.401	0.202	0.102	0.783	0.279	0.425	0.327
Antimony			0.00018	0.00016	0.000057	0.000076	0.000358		0.00886	0.000458	0.00518	0.000223	0.00196	0.000099
Arsenic	0.000582	0.000766	0.000827	0.000734	0.000718	0.000628	0.000517	0.00113	0.00035	0.00015	0.000808	0.000554	0.00039	0.00034
Beryllium			0.000015	0.000021	0.00001445	0.0000028	0.000174			0.000004	0.000032	0.00000765	0.000019	0.00000765
Cadmium	0.000085	0.124	0.000126	0.000057	0.000017	0.0000038	0.000246	0.000116	0.00003905	0.00003905	0.000325	0.000151	0.000161	0.000070
Chromium	0.00133	0.002	0.00112	0.00185	0.000698	0.00156	0.00131	0.00143	0.00046	0.00047	0.00275	0.00147	0.00192	0.000796
Copper	0.0825	0.0932	0.0435	0.0406	0.0145	0.0168	0.0176	0.0225	0.0195	0.0184	0.0494	0.0351	0.0202	0.0264
Cyanide	0.0015	0.0015	0.0027	0.0017	0.00075	0.00075	0.00075	0.00075	0.0016	0.00075	0.00075	0.0012	0.0012	0.0012
Fluoride	1.5	2.43	0.381	0.592	0.42	0.298	0.11	0.497	1.52	0.11	0.887	0.016	0.11	0.528
Iron	0.253	0.324	0.0801	0.298	0.272	0.0778	0.163	0.108	0.108	0.011	0.325	0.130	0.147	0.0061
Lead	0.00105	0.0012	0.000377	0.000556	0.000202	0.000239	0.00066	0.000648	0.000369	0.000293	0.004460	0.000675	0.000773	0.000426
Mercury	0.000027	0.000061	0.000017	0.000025	0.0000044	0.0000093	0.000006	0.0000326	0.0000254	0.0000077	0.0000218	0.0000214	0.0000103	0.0000142
Molybdenum	0.000779	0.00134	0.000715	0.000518	0.00022	0.00029	0.000943	0.00121	0.00032	0.00194	0.00125	0.000883	0.000515	0.000534
Nickel	0.00256	0.00286	0.00194	0.00154	0.000873	0.00117	0.000079	0.00231	0.000977	0.000945	0.00393	0.00260	0.00223	0.00206
Selenium	0.00014	0.00318	0.00042	0.00025	0.00007	0.00035	0.000576	0.000928	0.000817	0.000680	0.000976	0.0000192	0.00034	0.0001645
Silver	0.000278	0.000128	0.000098	0.000158	0.0000084	0.000021	0.000306	0.000270	0.000027	0.000118	0.000191	0.000125	0.000139	0.000042
Thallium			0.00012	0.00000475	0.00000475	0.00000475	0.00045		0.00000885	0.000019	0.000031	0.0000192	0.0000192	0.0000192
Zinc	0.149	0.17	0.301	0.079	0.0205	0.0464	0.055	0.120	0.159	0.0320	0.1530	0.212	0.0708	0.0678
O&G HEM, Total	20	25	29	23	6.7	9.6	3	18	9.3	13	7.8	32	9.9	24
O&G SGT-HEM Non Polar	0.8	1.5	0.7	0.17		0.5	0.17							

Manhole SW B33

PARAMETER mg/L	30-Jul-08	17-Nov-08	17-Feb-09	26-May-09	18-Aug-09	17-Nov-09	23-Feb-10	18-May-10	5-Oct-10	15-Nov-10	1-Feb-11	24-May-11	26-Sep-11	14-Nov-11
Aluminum	0.644	0.443	0.725	0.376	1.12	0.669	0.358	1.06	0.664	0.635	0.250	0.661	0.251	0.834
Antimony			0.000361	0.0045	0.000326	0.000426	0.00011		0.000488	0.00185	0.00251	0.000207	0.000169	0.000170
Arsenic	0.00025	0.000684	0.000569	0.00147	0.000659	0.0013	0.000177	0.000656	0.000591	0.000571	0.00047	0.00043	0.000153	0.000655
Beryllium			0.000033	0.0000028	0.00001445	0.00001445	0.000012			0.000011	0.000004	0.00000765	0.000019	0.00000765
Cadmium	0.000164	0.00014	0.000341	0.000349	0.000279	0.000084	0.000066	0.000125	0.000259	0.00003905	0.00003905	0.000199	0.000090	0.000170
Chromium	0.00215	0.00173	0.00226	0.00244	0.00234	0.00392	0.000646	0.00234	0.00141	0.00371	0.00364	0.00133	0.000906	0.00157
Copper	0.0476	0.0342	0.0596	0.0373	0.0615	0.028	0.0203	0.2070	0.0311	0.0240	0.0182	0.0289	0.0253	0.0327
Cyanide	0.0048	0.0015	0.00075	0.0082	0.00075	0.0017	0.0015	0.00075	0.0028	0.00075	0.0024	0.0012	0.0012	0.0012
Fluoride	1.06	1.27	0.754	0.856	0.955	0.15	0.216	0.18	1.58	0.873	0.358	0.801	1.17	1.15
Iron	0.489	0.832	0.729	0.748	2.25	0.818	0.314	1.81	0.654	3.11	0.478	0.341	0.412	0.685
Lead	0.00146	0.00147	0.00186	0.0029	0.00232	0.00342	0.000669	0.00286	0.00200	0.00130	0.000635	0.00138	0.000842	0.00149
Mercury	0.000017	0.000037	0.000039	0.000042	0.000046	0.0000525	0.000020	0.00000748	0.0000345	0.0000391	0.0000236	0.00005	0.0000363	0.0000576
Molybdenum	0.000677	0.000784	0.00189	0.00097	0.000558	0.000669	0.0008	0.00107	0.000587	0.000743	0.000320	0.000649	0.00043	0.00110
Nickel	0.00248	0.00222	0.00328	0.00228	0.00329	0.0028	0.00194	0.00804	0.00236	0.00412	0.00208	0.00222	0.00190	0.00263
Selenium	0.00007	0.000648	0.000844	0.00041	0.00036	0.000613	0.0005	0.000574	0.0001845	0.000515	0.0001845	0.0001845	0.00037	0.000524
Silver	0.00016	0.000309	0.000152	0.000188	0.00009	0.000134	0.000081	0.000177	0.000105	0.000075	0.000055	0.000120	0.000060	0.000134
Thallium			0.00032	0.00000475	0.00000475	0.00000475	0.00032		0.00000885	0.00000885	0.00000885	0.0000192	0.0000192	0.000041
Zinc	0.143	0.141	0.184	0.106	0.207	0.146	0.0727	0.34	0.172	0.185	0.0929	0.117	0.0762	0.182
O&G HEM, Total	24	28	23	32	16	19	11	5.4	9.7	19	19	22	5.5	45
O&G SGT-HEM Non Polar	1.5	1.5	0.4	3		3	0.8	0.5						

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-4: Collection System Monitoring Results (POCs)

Manhole NW F17

PARAMETER mg/L	30-Jul-08	17-Nov-08	17-Feb-09	26-May-09	18-Aug-09	17-Nov-09	23-Feb-10	18-May-10	5-Oct-10	15-Nov-10	1-Feb-11	24-May-11	26-Jun-11	14-Nov-11
Aluminum	0.134	0.425	0.193	0.396	0.591	0.522	0.135	0.455	0.175	0.656	0.249	0.338	0.195	0.358
Antimony			0.000258	0.00018	0.000474	0.000272	0.000022		0.00275	0.00211	0.00011	0.00017	0.000057	0.000964
Arsenic	0.00025	0.00089	0.000732	0.00102	0.000804	0.0012	0.000177	0.000956	0.00018	0.00034	0.00039	0.000759	0.00040	0.00106
Beryllium			0.0000082	0.000014	0.00001445	0.0000028	0.000011			0.000015	0.0000081	0.000019	0.00000765	0.00000765
Cadmium	0.000011	0.000131	0.000153	0.000073	0.000164	0.000065	0.000065	0.000111	0.000098	0.00003905	0.00003905	0.000152	0.000145	0.000116
Chromium	0.000584	0.00223	0.00166	0.00212	0.00242	0.00222	0.000605	0.00175	0.000629	0.00105	0.00108	0.00116	0.000823	0.00289
Copper	0.0276	0.036	0.0301	0.0237	0.0317	0.0184	0.0152	0.0162	0.0137	0.0216	0.0242	0.0196	0.0159	0.0262
Cyanide	0.003	0.00075	0.0028	0.0019	0.0021	0.00075	0.0017	0.00075	0.0025	0.00075	0.00330	0.0012	0.0012	0.0012
Fluoride	0.079	0.945	0.773	0.404	0.424	0.12	0.089	0.226	0.084	0.074	0.403	0.488	0.16	0.18
Iron	0.186	0.32	0.384	0.305	0.867	0.536	0.121	0.458	0.191	0.445	0.354	0.146	0.300	0.402
Lead	0.000753	0.00128	0.000826	0.000888	0.00225	0.00179	0.000298	0.00123	0.000517	0.000816	0.000550	0.000629	0.000920	0.00146
Mercury	0.0001	0.000044	0.000039	0.00000425	0.0000182	0.00395	0.000007	0.0000265	0.000018	0.000022	0.000475	0.0000895	0.000107	0.0000261
Molybdenum	0.0003	0.0013	0.00075	0.00134	0.000568	0.000703	0.00038	0.000822	0.00021	0.000752	0.00050	0.000632	0.00046	0.000750
Nickel	0.00109	0.002	0.00173	0.00171	0.0027	0.00209	0.000513	0.00194	0.000845	0.00161	0.00170	0.00182	0.00170	0.00341
Selenium	0.00007	0.000619	0.00041	0.00018	0.00028	0.000541	0.00061	0.000525	0.0001845	0.000515	0.00000885	0.0001645	0.00035	0.0001645
Silver	0.000022	0.000119	0.000096	0.000067	0.000186	0.000056	0.000025	0.000148	0.000043	0.000094	0.000135	0.000079	0.000060	0.000123
Thallium			0.000032	0.00000475	0.00000475	0.00000475	0.000095		0.00000885	0.00000885	0.00000885	0.0000192	0.0000192	0.0000192
Zinc	0.0397	0.293	0.0751	0.0986	0.164	0.0984	0.0479	0.26	0.0672	0.146	0.0913	0.0772	0.0718	0.113
O&G HEM, Total	9.4	12	32	20	20	30	0.9	27	18	20	4.7	11	12	21
O&G SGT-HEM Non Polar	1.5	0.8	0.8	3		1	0.6	0.5						

Manhole SE K110

PARAMETER mg/L	31-Jul-08	18-Nov-08	19-Feb-09	27-May-09	20-Aug-09	18-Nov-09	24-Feb-10	19-May-10	6-Oct-10	15-Nov-10	3-Feb-11	24-May-11	27-Sep-11	14-Nov-11
Aluminum	0.534	0.177	0.548	0.142	1.22	0.641	0.61	0.164	1.39	7.89	0.185	0.133	0.296	0.0890
Antimony			0.0001	0.00012	0.000249	0.00383	0.000081		0.00374	0.00292	0.00468	0.00013	0.00140	0.000061
Arsenic	0.00047	0.00081	0.0005	0.000726	0.000689	0.000979	0.00043	0.00043	0.00042	0.00204	0.00034	0.00049	0.000583	0.000153
Beryllium			0.0000028	0.0000028	0.0002	0.000016	0.000013			0.000131	0.000022	0.00000765	0.00000765	0.00000765
Cadmium	0.000035	0.000116	0.000074	0.000076	0.000132	0.000316	0.00011	0.000076	0.00003905	0.000440	0.000204	0.00002595	0.000151	0.00010
Chromium	0.000552	0.00164	0.000826	0.00145	0.00205	0.00352	0.000879	0.000951	0.00002645	0.00995	0.00173	0.00124	0.00127	0.00168
Copper	0.0664	0.0992	0.0597	0.0818	0.139	0.0884	0.0136	0.0622	0.0428	0.296	0.0609	0.0656	0.0653	0.524
Cyanide	0.0015	0.0016	0.0019	0.002	0.00075	0.00075	0.0018	0.00075	0.0022	0.00075	0.0021	0.0012	0.0012	0.0012
Fluoride	0.201	1.09	0.21	0.372	0.236	1.73	0.16	0.248	0.17	0.016	1.35	1.05	0.424	1.04
Iron	0.061	0.444	0.0628	0.104	0.606	0.516	0.129	0.0475	0.0757	9.58	0.392	0.117	0.160	0.0973
Lead	0.000647	0.00089	0.000475	0.000404	0.002	0.00261	0.000533	0.000502	0.000612	0.00954	0.00119	0.000540	0.00100	0.000725
Mercury	0.0001	0.000026	0.000076	0.000023	0.0000221	0.0000394	0.000018	0.00001585	0.0000184	0.0000219	0.00000741	0.0000291	0.0000188	0.000028
Molybdenum	0.00036	0.00045	0.00037	0.00041	0.000848	0.000884	0.00028	0.00046	0.00023	0.00148	0.000735	0.000844	0.000129	0.00037
Nickel	0.000729	0.00279	0.00111	0.00144	0.00248	0.00377	0.000658	0.00139	0.00103	0.0157	0.00197	0.00194	0.00211	0.00168
Selenium	0.00015	0.0003	0.00027	0.000534	0.000873	0.0008	0.000531	0.000748	0.000549	0.00154	0.00168	0.0001645	0.00049	0.0001645
Silver	0.000133	0.000306	0.000116	0.000058	0.000113	0.000128	0.000062	0.000042	0.000049	0.000687	0.000118	0.000062	0.000718	0.000041
Thallium			0.00000475	0.00000475	0.00000475	0.00000475	0.00000475		0.00000885	0.000038	0.000088	0.0000384	0.0000384	0.0000384
Zinc	0.155	0.148	0.118	0.0992	0.287	0.171	0.0541	0.0871	0.0726	0.450	0.161	0.0748	0.118	0.0990
O&G HEM, Total	8.3	28	18	54	19	16	7.2	26	40	1.8	8.9	17	24	37
O&G SGT-HEM Non Polar	1.5	0.5	0.17	2		1	0.6							

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-5: Collection System Monitoring Results (OPPs)

PARAMETER µg/L	Manhole X65 (Darnielle P.S.)				Manhole R23 (Redwood P.S.)				Manhole NW F17			
	30-Jul-08	20-Aug-09	7-Oct-10	28-Sep-11	4-Aug-08	18-Aug-09	7-Oct-10	28-Sep-11	30-Jul-08	18-Aug-09	5-Oct-10	26-Sep-11
SEMIVOLATILE ORGANICS EPA 625												
Bis(2-ethylhexyl)phthalate	21	14	0.4	26	25	2.5	0.4	19	23	10	14	5.4
Butyl benzyl phthalate	2.3	2.3	0.15	6.5	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
1,4-Dichlorobenzene	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
Diethyl phthalate	9.1	2.8	0.17	18	16	0.17	0.17	3.2	4	2.9	0.17	11
Di-n-butyl phthalate	1.8	0.18	0.18	1.5	1.3	0.18	0.18	0.9	0.18	0.9	0.18	0.8
Di-n-octyl phthalate	0.7	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Nitrobenzene	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265	4	0.265	0.265	0.265
Phenol	0.115	4.2	0.115	2.4	0.115	0.7	0.115	5.1	2	1.2	0.115	0.3
2-Methylphenol (Cresol)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
4-Methylphenol (Cresol)	0.5	30	0.5	14	0.5	0.5	50	13	0.5	0.5	0.5	5.2
VOLATILE ORGANICS EPA 624												
Bromodichloromethane	0.153	0.153	0.2	0.2	0.153	0.73	1.4	1.2	0.153	0.4	0.2	0.67
1,4-Dichlorobenzene	0.086	0.086	0.086	0.086	0.086	0.086	0.086	0.086	0.086	0.76	0.086	0.086
Chloroform	1.6	1.6	2.4	2.4	2.7	4.8	9.3	5.3	1.9	3.8	4.8	4.8
Ethylbenzene	0.0535	0.0535	0.0535	0.0535	0.0535	0.0535	0.0535	0.0535	0.0535	0.0535	0.0535	0.0535
Toluene	0.56	0.9	0.4	0.2	0.0495	0.0495	0.0495	0.0495	0.0495	0.3	0.3	0.4
Xylenes, Total	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18

	Manhole NE H17				Manhole SW B33				Manhole SE K110			
	30-Jul-08	19-Aug-09	5-Oct-10	27-Sep-11	30-Jul-08	18-Aug-09	15-Nov-10	26-Sep-11	30-Jul-08	20-Aug-09	15-Nov-10	27-Sep-11
SEMIVOLATILE ORGANICS EPA 625												
Bis(2-ethylhexyl)phthalate	7	11	0.4	5.3	25	18	10	16	5	4.2	0.4	25
Butyl benzyl phthalate	0.6	0.15	0.15	0.15	2	2.9	0.15	0.15	0.15	0.15	0.15	0.15
1,4-Dichlorobenzene	0.175	0.175	0.175	0.175	0.57	0.175	0.175	0.175	0.175	0.175	0.175	0.175
Diethyl phthalate	3.9	4.1	0.17	2.2	4.2	5.4	0.17	2.3	1.4	1.1	0.17	1.6
Di-n-butyl phthalate	0.5	0.18	0.18	0.8	1.7	1.1	0.18	1	0.18	0.18	0.18	0.9
Di-n-octyl phthalate	0.18	0.18	0.18	0.18	0.7	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Nitrobenzene	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265
Phenol	0.115	0.6	0.115	0.7	0.115	4.4	0.115	1.4	0.7	1.3	0.115	1.8
2-Methylphenol (Cresol)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
4-Methylphenol (Cresol)	0.5	0.5	0.5	4.1	0.5	0.5	40	12	0.5	0.5	0.5	35
VOLATILE ORGANICS EPA 624												
Bromodichloromethane	0.153	0.153	0.3	0.5	0.153	0.4	0.2	0.57	0.153	0.153	1.153	1.6
1,4-Dichlorobenzene	0.086	0.4	0.2	0.086	0.3	0.61	0.4	0.3	0.086	0.086	0.086	0.086
Chloroform	2.5	1.8	4.5	5.7	5.8	4.3	13	5	1.6	0.67	9.8	5.8
Ethylbenzene	0.0535	0.0535	0.0535	0.0535	0.0535	0.0535	0.0535	0.0535	0.0535	1	0.0535	0.0535
Toluene	0.0495	0.0495	0.0495	0.0495	0.0495	1.9	0.5	0.67	0.0495	0.5	0.0495	0.0495
Xylenes, Total	0.18	0.18	0.18	0.09	0.18	0.18	0.18	0.18	0.18	6	0.18	1.18

Color Coding Key:

Pollutants also detected at the headworks.

Half of MDL. Value

Attachment D-6: Industrial Users Monitoring Results

RIVERSIDE READYMIX

Samples collected by:	IU	IU	IU	IU	IU	IU	IU	IU
PARAMETER mg/L	**17-Apr-07**	**8-Nov-07**	**8-May-08**	**6-Nov-08**	**13-Nov-09**	**4-May-10**	**14-Nov-10**	**9-May-11**
Arsenic	0.00250	0.00250	0.00250	0.00250	0.00250	0.00250	0.00100	0.00100
Cadmium	0.00250	0.00250	0.00250	0.00250	0.00250	0.00250	0.00050	0.00050
Chromium	0.01760	0.01710	0.01360	0.00672	0.00641	0.01050	0.00561	0.00770
Copper	0.01730	0.00840	0.00716	0.01200	0.00250	0.00731	0.00801	0.00723
Cyanide	0.00250	0.00250	0.00250	0.00250	0.00250	0.00250	0.01060	0.00250
Lead	0.00610	0.00250	0.00250	0.00250	0.00250	0.00250	0.00050	0.00050
Mercury	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00008	0.00004
Molybdenum	0.00530	0.00500	0.00500	0.00500	0.00250	0.00250	0.00100	0.00303
Nickel	0.00960	0.00250	0.00250	0.00250	0.00530	0.00250	0.00329	0.00311
Selenium	0.00250	0.00250	0.00250	0.00250	0.00250	0.00250	0.00100	0.00100
Silver	0.00250	0.00250	0.00250	0.00250	0.00250	0.00250	0.00050	0.00050
Zinc	0.07920	0.01550	0.00500	0.02270		0.01850	0.03610	0.01210

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-6: Industrial Users Monitoring Results

METAL FINISHERS INC.

Samples collected by:	City	City	City	IU	City	City	IU	City	City	IU	IU
PARAMETER mg/L	**8-Feb-07**	**16-Mar-07**	**26-Apr-07**	**8-May-07**	**21-Jun-07**	**23-Aug-07**	**26-Nov-07**	**21-May-08**	**3-Sep-08**	**13-May-08**	**12-Nov-08**
Aluminum								8.42000	4.93000		
Arsenic	0.00025	0.00177	0.00025	0.00025	0.00053	0.00050	0.00584	0.00063	0.00042	0.00056	0.00061
Cadmium	0.00005	0.00023	0.00005	0.00005	0.00040	0.00005	0.00197	0.00005	0.00004	0.00005	0.00005
Chromium	0.01900	0.19100	0.01310	0.02530	0.05120	0.02010	0.97400	0.04730	0.01490	0.03110	0.01830
Copper	0.06100	1.25000	0.06300	0.05240	0.02280	0.04410	5.14000	0.07960	0.02940	0.08350	0.02770
Cyanide	0.00150	0.00150	0.00150	0.00150	0.00470	0.00460	0.00150	0.00150	0.00180	0.00340	0.00150
Iron								11.90000	2.71000		
Lead	0.00704	0.18200	0.00519	0.00831	0.00612	0.00605	0.81300	0.03020	0.00809	0.02850	0.00800
Mercury	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00013	0.00010	0.00010	0.00010	0.00010
Molybdenum	0.00025	0.00161	0.00025	0.00053	0.00025	0.00116	0.00851	0.00069	0.00033	0.00025	0.00025
Nickel	0.06310	1.23000	0.03780	0.04080	0.03530	0.03850	5.12000	0.06440	0.03570	0.05510	0.03840
Selenium		0.00025	0.00025	0.00025	0.00025	0.00025	0.00092	0.00025	0.00007	0.00025	0.00025
Silver	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00085	0.00005	0.00001	0.00005	0.00005
Zinc	0.05510	0.32000	0.07930	0.02170	0.02640	0.02840	1.09000	0.03530	0.05530	0.02110	0.02460

Samples collected by:	City	IU	City	IU	City	IU	City	IU	City	IU	City
PARAMETER mg/L	**11-Feb-09**	**19-May-09**	**2-Sep-09**	**3-Nov-09**	**17-Mar-10**	**25-May-10**	**5-Aug-10**	**23-Nov-10**	**24-Feb-11**	**18-May-11**	**24-Aug-11**
Aluminum											
Arsenic	0.00018	0.00025	0.00025	0.00025	0.00018	0.00025	0.00015	0.00025	0.00045	0.00066	0.00015
Cadmium	0.00001	0.00005	0.00006	0.00005	0.00008	0.00005	0.00004	0.00005	0.00004	0.00005	0.00014
Chromium	0.01200	0.02330	0.01760	0.01350	0.02770	0.01430	0.01500	0.01850	0.02310	0.02710	0.01670
Copper	0.03410	0.05380	0.05540	0.03260	0.05580	0.02570	0.02840	0.01790	0.02490	0.02360	0.02710
Cyanide	0.00280	0.00150	0.00190	0.00150	0.00075	0.00150	0.00190	0.00150	0.00075	0.00600	0.00250
Iron											
Lead	0.00504	0.00931	0.00651	0.00541	0.01520	0.00591	0.00402	0.00627	0.00712	0.00516	0.00504
Mercury	0.00001	0.00010	0.00001	0.00010	0.00000	0.00010	0.00000	0.00010	0.00002	0.00010	0.00002
Molybdenum	0.00075	0.00052	0.00070	0.00025	0.00068	0.00025	0.00022	0.00025	0.00074	0.00077	0.00032
Nickel	0.07670	0.05170	0.05670	0.05280	0.22700	2.56000	0.04080	0.04310	0.06240	0.06890	0.05040
Selenium	0.00032	0.00025	0.00033	0.00025	0.00018	0.00025	0.00018	0.00025	0.00018	0.00025	0.00016
Silver	0.00001	0.00005	0.00001	0.00005	0.00001	0.00005	0.00000	0.00005	0.00001	0.00005	0.00001
Zinc	0.06530	0.08340	0.07530	0.00010	0.09690	0.03450	0.05650	0.03320	0.07770	0.05250	0.05460

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-6: Industrial Users Monitoring Results

CLEARWATER TECHNOLOGIES

Samples collected by:	City	IU	City	City	IU	City	IU	City		IU	IU	City
PARAMETER mg/L	**8-Mar-07**	**6-Nov-07**	**19-Dec-07**	**8-Mar-07**	**26-Mar-08**	**31-Mar-08**	**20-Nov-08**	**17-Dec-08**	**18-Mar-09**	**7-Apr-09**	**3-Nov-09**	**19-Nov-09**
Aluminum						0.05690						0.12400
Arsenic	0.00708	0.01290	0.01040	0.00708	0.00438	0.00765	0.00219	0.00353	0.00587	0.00963	0.01140	0.00609
Cadmium	0.00005	0.00005	0.00005	0.00005	0.00024	0.00005	0.00005	0.00005	0.00003	0.00005	0.00005	0.00002
Chromium	0.02100	0.04140	0.04110	0.02100	0.00320	0.03980	0.01690	0.00684	0.01610	0.00612	0.00164	0.01010
Copper	0.01880	0.01080	0.00784	0.01880	0.00185	0.00402	0.00454	0.00983	0.00661	0.00245	0.00025	0.00489
Cyanide	0.00390		0.00540	0.00390	0.00390	0.00360	0.00150	0.00075	0.00900	0.00150	0.00150	0.00075
Fluoride												51.00000
Iron						0.14900						2.88000
Lead	0.00077	0.00040	0.00030	0.00077	0.00035	0.00029	0.00022	0.00038	0.00069	0.00025	0.00005	0.00038
Mercury	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00010	0.00002	0.00001	0.00010	0.00010	0.00001
Molybdenum	0.03420	0.04810	0.05840	0.03420	0.01260	0.06340	0.06160	0.00579	0.00511	0.00516	0.03680	0.01710
Nickel	0.00815	0.01840	0.01950	0.00815	0.01320	0.01920	0..0117	0.02730	0.02450	0.01350	0.01350	0.01560
Selenium	0.00278	0.00230	0.00307	0.00278	0.00206	0.00286	0.00565	0.00338	0.00374	0.00252	0.00283	0.00280
Silver	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00008	0.00001	0.00005	0.00005	0.00002
Zinc	0.03900	0.02290	0.26500	0.03900	0.14700	0.02630	0.00844	0.05260	0.06890	0.01750	0.00736	0.05900

Samples collected by:	IU	City	IU	City	IU	City	IU	City
PARAMETER mg/L	**1-Apr-10**	**6-Apr-10**	**1-Nov-10**	**22-Nov-10**	**1-Mar-11**	**16-Mar-11**	**1-Nov-11**	**17-Nov-11**
Aluminum		0.07260		0.09480				0.10400
Arsenic	0.00352	0.00849	0.01150	0.00678	0.01390	0.00475	0.01400	0.00992
Cadmium	0.00005	0.00000	0.00005	0.00025	0.00005	0.00004	0.00005	0.00006
Chromium	0.00493	0.02620	0.04960	0.01220	0.02590	0.00846	0.01370	0.01900
Copper	0.02340	0.02210	0.00385	0.01020	0.00320	0.00839	0.07440	0.01150
Cyanide	0.00350	0.00170	0.00150	0.00390	0.00150	0.00075	0.00150	0.00120
Fluoride		21.00000		49.20000		17.80000		21.90000
Iron		0.22400		0.52200				0.18800
Lead	0.00043	0.00042	0.00021	0.00056	0.00028	0.00032	0.00034	0.00033
Mercury	0.00010	0.00001	0.00010	0.00004	0.00010	0.00002	0.00010	
Molybdenum	0.00154	0.05160	0.07190	0.01500	0.04190	0.01180	0.06530	0.06060
Nickel	169.00000	0.01720	0.01620	0.01810	0.01390	0.00717	0.02040	0.01140
Selenium	0.00139	0.00206	0.00499	0.00222	0.00184	0.00176	0.00319	0.00095
Silver	0.00005	0.00002	0.00005	0.00000	0.00005	0.00000	0.00005	0.00001
Zinc	0.33000	0.04530	0.06040	0.07100	0.05260	0.01760	0.03940	0.02400

Color Coding Key:

Half of MDL. Value

No Sampling Conducted

Attachment D-6: Industrial Users Monitoring Results

TIMBER PRODUCTS

Samples collected by:	City	City	IU	IU	IU	City	City	IU	City	City	IU	City	IU
PARAMETER mg/L	**20-Mar-07**	**6-Apr-07**	**16-May-07**	**4-Nov-08**	**21-Nov-07**	**29-Nov-07**	**3-Mar-08**	**20-May-08**	**24-Sep-08**	**10-Mar-09**	**20-May-09**	**28-Sep-09**	**4-Nov-09**
Aluminum							0.497		0.322				
Arsenic	0.00582	0.00354	0.00204	0.00409	0.0119	0.00295	0.00464	0.00308	0.00409	0.00304	0.00455	0.00461	0.00409
Cadmium	0.0251	0.000962	0.000530	0.00192	0.0438	0.00238	0.00252	0.00157	0.00107	0.000341	0.00110	0.00121	0.00473
Chromium	0.0334	0.0053	0.00344	0.0110	0.176	0.00813	0.0108	0.0106	0.0259	0.00540	0.0102	0.0101	0.0190
Copper	0.0777	0.0528	0.0436	0.0678	0.833	0.0758	0.0964	0.0492	0.0712	0.0580	0.0413	0.0354	0.121
Cyanide	0.02210	0.02130	0.03690	0.0112	0.00150	0.0592	0.0339	0.01280	0.00380	0.0240	0.0109	0.0015	0.00175
Iron							1.17		1.75				
Fluoride									3.33				
Lead	0.0972	0.00545	0.00439	0.0135	0.218	0.0149	0.0192	0.00775	0.00593	0.00130	0.00509	0.00625	0.0280
Mercury	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	4.25E-06	0.00005
Molybdenum	0.00284	0.0103	0.00342	0.00850	0.00755	0.00439	0.00485	0.00670	0.00880	0.00946	0.00636	0.00397	0.00894
Nickel	0.0596	0.00501	0.00413	0.00650	0.128	0.00792	0.00765	0.00749	0.0110	0.00533	0.00516	0.00554	0.0130
Selenium	0.00354	0.00181	0.00165	0.00245	0.00962	0.00219	0.00260	0.00244	0.00500	0.00326	0.00335	0.00117	0.00237
Silver	0.000441	0.000230	0.000498	0.00123	0.0127	0.00117	0.000786	0.000941	0.000653	0.00176	0.00103	0.000577	0.00172
Zinc	13.3	0.6830	0.4290	1.01	17.9	1.37	1.91	0.696	0.447	0.137	0.460	0.594	1.75

Additional Zinc Monitoring For Timber Products

19-Feb-08	28-May-08	10-Jun-08	17-Jun-08	24-Jun-08	1-Jul-08	8-Jul-08	15-Jul-08	16-Jul-08	22-Jul-08	23-Jul-08	30-Jul-08	5-Aug-08
1.39	0.608	99	0.853	1.78	18.4	19.7	0.919	0.634	0.294	0.803	0.176	0.677

6-Aug-08	12-Aug-08	13-Aug-08	19-Aug-08	20-Aug-08	26-Aug-08	27-Aug-08	3-Sep-08	4-Sep-08	8-Sep-08	10-Sep-08	16-Sep-08	23-Sep-08
1.3	1.07	0.382	0.43	0.43	1.56	0.715	0.667	0.232	0.204	0.218	0.188	0.399

30-Sep-08	7-Oct-08	14-Oct-08	21-Oct-08	28-Oct-08	11-Nov-08	18-Nov-08	2-Dec-08	16-Dec-08	30-Dec-08	13-Jan-09	27-Jan-09	10-Feb-09
0.282	1.28	0.578	0.978	0.204	1.46	0.245	0.258	0.112	0.0666	0.129	0.218	0.205

3-Mar-09	7-Apr-09	5-May-09	2-Jun-09	21-Jul-09	4-Aug-09	22-Sep-09	6-Oct-09	18-Dec-09
0.101	0.199	0.0617	0.939	0.374	0.312	0.458	0.177	2.1

Samples collected by:	City	IU	City	IU	City	IU	City
PARAMETER mg/L	**19-Mar-10**	**16-Apr-10**	**4-Aug-10**	**16-Nov-10**	**16-Mar-11**	**18-May-11**	**26-Oct-11**
Aluminum							
Arsenic	0.00318	0.00319	0.00464	0.00510	0.000606	0.00744	0.00346
Cadmium	0.0016	0.00169	0.00196	0.00414	0.000305	0.00142	0.00102
Chromium	0.00919	0.00692		0.0172	0.00152	0.0125	0.00820
Copper	0.0593	0.0477	0.0796	0.0744	0.019	0.0934	0.0451
Cyanide	0.0164	0.0109	0.0119	0.0209	0.0015	0.00740	0.0104
Iron							
Fluoride							
Lead	0.00755	0.00740	0.0113	0.0131	0.00141	0.00750	0.00463
Mercury	4.25E-06	0.0001	0.0000035	0.0001	0.0001	0.0001	0.0001
Molybdenum	0.00575	0.00421	0.00413	0.00490	0.00177	0.00686	0.00241
Nickel	0.00494	0.00553	0.00598	0.00980	0.00213	0.0108	0.00556
Selenium	0.00278	0.00162	0.00261	0.00339	0.000738	0.00349	0.00197
Silver	0.000907	0.000901	0.00105	0.00128	0.000176	0.00219	0.000584
Thallium							0.00005
Zinc	0.634	0.679	0.736	0.973	0.0997	0.600	0.360

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-7: Hauled Sewage Monitoring Results

PARAMETER mg/L	JO-GRO™ Pond					Grants Pass Landfill Tank				
	7-Apr-09	20-Nov-09	11-May-10	30-Nov-10	30-Mar-11	7-Apr-09	29-Dec-09	11-May-10	30-Nov-10	30-Mar-11
Aluminum	6.99000	2.92000	1.12000	0.50400	2.48000	0.04740	0.36700	0.09210	0.37100	0.14100
Antimony	0.00174	0.00063		0.00393	0.00196	0.00014	0.00017		0.00350	0.00228
Arsenic	0.06010	0.00947	0.00590	0.00403	0.01100	0.00081	0.00083	0.00058	0.00061	0.00044
Beryllium	0.00012	0.00007		0.00001	0.00006	0.00000	0.00002		0.00001	0.00002
Cadmium	0.00160	0.00057	0.00043	0.00017	0.00077	0.00012	0.00001	0.00009	0.00004	0.00012
Chromium	0.02360	0.01000	0.00587	0.00294	0.01000	0.00047	0.00067	0.00015	0.00075	0.00054
Copper	0.18800	0.09380	0.05330	0.02510	0.06360	0.01620	0.01530	0.01420	0.01540	0.01480
Cyanide	0.00350	0.00075	0.00490	0.00075	0.00490	0.00290	0.00160	0.00075	0.00180	0.00150
Fluoride	0.36600	4.09000	4.02000	0.13000	2.87000	0.13000	0.31200	0.21300	0.04200	0.15000
Iron	14.50000	4.46000	3.31000	1.23000	4.66000	0.78400	0.28900	0.53200	0.34700	1.08000
Lead	0.02520	0.01080	0.00641	0.00241	0.00941	0.00154	0.00025	0.00546	0.00044	0.00120
Mercury	0.00060	0.00014	0.00007	0.00007	0.00021	0.00001	0.00000	0.00000	0.00001	0.00000
Molybdenum	0.00082	0.00193	0.05850	0.00921	0.00047	0.00018	0.00040	0.00024	0.00051	0.00028
Nickel	0.11800	0.01890	0.00154	0.00083	0.04640	0.00663	0.00282	0.00546	0.00249	0.00746
Selenium	0.00423	0.00244	0.00068	0.00031	0.00192	0.00411	0.00119	0.00197	0.00051	0.00158
Silver	0.00317	0.00128		0.00440	0.00076	0.00001	0.00000	0.00001	0.00001	0.00000
Thallium	0.00000	0.00000	0.19800	0.10300	0.00001	0.00000	0.00010		0.00560	0.00001
Zinc	0.68400	0.31100	0.00490	0.00075	0.28800	0.15100	0.04260	0.40400	0.06680	0.10600
BOD	342.00000	285.00000	275.00000			0.00000		6.00000	3.00000	
pH	7.30000	7.10000	7.10000	7.10000		7.00000	6.70000	7.10000	7.00000	
TSS	853.50000	438.00000	402/396	66/68		3.2	9.3	16/15	14/16	

*Each load of leachate is approximately 3400 gallons.

Color Coding Key:
Half of MDL. Value
No Sampling Conducted

Attachment D-8: Rogue River Monitoring Results

PARAMETER mg/L	29-Jul-08	19-Nov-08	24-Feb-09	28-May-09	20-Aug-09	17-Nov-09	25-Feb-10	20-May-10	7-Oct-10	15-Nov-10	2-Feb-11	25-May-11	24-Aug-11	15-Nov-11
Aluminum			0.3480000	0.2050000	0.1400000	0.0846000	0.1770000	0.2690000	0.4150000	0.1520000	0.5870000	0.3130000	0.2640000	0.1520000
Antimony			0.0000750	0.0000710	0.0000360	0.0000300	0.0000570		0.0061500	0.0024400	0.0000330	0.0038300	0.0000210	0.0000540
Arsenic	0.0000125	0.0007070	0.0006460	0.0008290	0.0004800	0.0008200	0.0000125	0.0006610	0.0010300	0.0005170	0.0004100	0.0004200	0.0004600	0.0005190
Beryllium			0.0000260	0.0000180		0.0000028	0.0000028				0.0000085	0.0000077	0.0000170	0.0000077
Cadmium	0.0000038	0.0000038	0.0000038	0.0000038	0.0000038	0.0000038	0.0000300	0.0000200	0.0000391	0.0000391	0.0000391	0.0000260	0.0000260	0.0000260
Chromium	0.0001700	0.0005150	0.0005640	0.0007980	0.0003000	0.0005200	0.0004700	0.0006970	0.0002300	0.0003900	0.0008360	0.0005000	0.0005150	0.0003100
Copper	0.0014900	0.0010900	0.0018500	0.0013400	0.0010100	0.0007380	0.0008910	0.0011200	0.0019900	0.0011700	0.0017300	0.0015000	0.0011500	0.0013200
Cyanide	0.0015000	0.0015000	0.0020000	0.0007500	0.0022000	0.0007500	0.0007500	0.0007500	0.0027000	0.0007500	0.0022000	0.0012000	0.0012000	0.0012000
Fluoride					0.0135000	0.0135000	0.0120000	0.0240000	0.0160000	0.0160000	0.0160000	1.0900000	0.0266500	0.0266500
Iron	0.1550000	0.1410000	0.2380000	0.1600000	0.1420000	0.1090000	0.1880000	0.1820000	0.5400000	0.1560000	0.5720000	0.2050000	0.2060000	0.0740000
Lead	0.0000770	0.0000700	0.0001150	0.0000970	0.0000900	0.0000480	0.0000820	0.0002050	0.0002700	0.0001030	0.0001960	0.0001560	0.0001970	0.0000990
Mercury	0.0002000	0.0002000	0.0000190	0.0000130	0.0000080	0.0000005	0.0000012	0.0000009	0.0000018	0.0000009	0.0000018	0.0000013	0.0000008	
Molybdenum	0.0001800	0.0002100	0.0007250	0.0003800	0.0002900	0.0001500	0.0002100	0.0002300	0.0001800	0.0004600	0.0001200	0.0001290	0.0002800	0.0001290
Nickel	0.0002600	0.0002500	0.0006640	0.0003400	0.0002300	0.0002300	0.0000063	0.0002600	0.0004100	0.0003500	0.0008430	0.0003600	0.0003900	0.0002700
Selenium	0.0000700	0.0002300	0.0000700	0.0001500	0.0002100	0.0002400	0.0000700	0.0003600	0.0006080	0.0001845	0.0001645	0.0001645	0.0001645	0.0001645
Silver	0.0000500	0.0000500	0.0000066	0.0000059	0.0000012	0.0000012	0.0000054	0.0000012	0.0000027	0.0000027	0.0000027	0.0000300	0.0000061	0.0000061
Thallium			0.0003400	0.0000048	0.0000048	0.0000048	0.0000048		0.0000089	0.0000089	0.0000089	0.0000192	0.0000192	0.0000192
Zinc	0.0022300	0.0043000	0.0028000	0.0020000	0.0046800	0.0016700	0.0019000	0.0035300	0.0591000	0.0196000	0.0057500	0.0498000	0.0037400	0.0042600
Hardness			42.80	26.80	26.20		42.60	34.20		42.10		33.80	25.60	37.00

Color Coding Key:
Half of MDL. Value
No Sampling Conducted
Not Included in Average

Attachment E

Cyanide Monitoring of Plant Effluent

Cyanide Monitoring of Plant Effluent
June 29, 2010 – Dec 27, 2010

Total Cyanide results in mg/L EPA Method 335.4 8 Hour Composites

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			Week 1 6/29/10	Week 2 7/7/10	Week 3 7/15/10	Week 4 7/23/10	Week 5 7/31/10
Result			ND @ 0.00150	**0.0018**	**0.0019**	ND @ 0.00150	**0.0017**
	Week 6 8/1/10	Week 7 8/9/10	Week 8 8/17/10	Week 9 8/25/10	Week 10 9/2/10	Week 11 9/10/10	Week 12 9/18/10
Result	**0.0027**	**0.0021**	**0.0027**	ND @ 0.00150	**0.0020**	ND @ 0.00150	ND @ 0.00150
	Week 13 9/19/10	Week 14 9/27/10	Week 15 10/5/10	Week 16 10/13/10	Week 17 10/21/10	Week 18 10/29/10	Week 19 11/6/10
Result	ND @ 0.00150	**0.0018**	**0.0029**	**0.0025**	**0.00330**	ND @ 0.00150	ND @ 0.00150
	Week 20 117/10	Week 21 11/15/10	Week 22 – Mon. 11/22/10 short wk Lab closed	Week 23 12/1/10	Week 24 12/9/10	Week 25 12/17/10	Week 26
Result	ND @ 0.00150	ND @ 0.00150	**0.0025**	**0.0127**	**0.0020**	**0.0018**	Xmas Sampled on Sunday
	Week 26 12/27/10	Week 27 12/27/10					
Result	ND @ 0.00150	**0.0017**					