

McKinleyville Community Services District



ANNUAL WASTEWATER MANAGEMENT FACILITY MONITORING & DISCHARGE REPORT FOR 2010

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February 24, 2011

Regional Water Quality Control Board, North Coast Region
5550 Skylane Blvd., Suite A
Santa Rosa, California 95403

**McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY ANNUAL REPORT, FOR 2010**

The McKinleyville Community Services District operates the wastewater collection, treatment, and disposal facilities that serve 6167 customer units in the unincorporated area of McKinleyville in Northern Humboldt County. The system operated under Order No. R1-2008-0039, National Pollution Discharge Elimination System (NPDES) Permit No. CA0024490, WDID No. 1B82084OHUM and issued by the California Regional Water Quality Control Board (RWQCB), North Coast Region.

Enclosed is the 2010 Annual Report for McKinleyville Community Services District Wastewater Management Facility (WWMF). The compliance testing reports, tabular, graphical summaries and other operational data not sent with the monthly reports are included. Below in Table 1 are the interim Effluent Limitations for discharge to the Mad River. These limitations were in effect until May 17, 2010 at which time the limitation were modified as represented in Table 2. During discharge to land disposal the only constituents regulated are Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS) and Nitrate as Nitrogen in the Percolation Ponds.

Table 1. Interim Effluent Limitations for Discharge Point 001

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
Copper	ug/L			38
Lead	ug/L			0.6
α -BHC	ug/L			0.099
4,4'-DDT	ug/L			0.031
bis(2-ethylhexyl) phthalate	ug/L			4
2,3,7,8-TCDD equivalents	pg/L			0.094

Table 2. Effluent Limitations for Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	45	65			
	lbs/day	441	637			
Total Suspended Solids	mg/L	83				
	lbs/day	931				
pH	pH Units				6.5	8.5
Settleable Matter	mg/L	0.1		0.2		
Chlorine Residual	mg/L	0.01		0.02		
Nitrate as Nitrogen	mg/L	10				
Copper	ug/L	[1]		[1]		
Lead	ug/L	[1]		[1]		
α -BHC	ug/L	0.0039		0.0078		
4,4'-DDT	ug/L	0.00059		0.0012		
bis(2-ethylhexyl) phthalate	ug/L	1.8		3.6		
2,3,7,8-TCDD equivalents	pg/L	0.013		0.026		

^[1] Lead and Copper Limitations are calculations of hardness and concentration derived from a table of Hardness Dependant Metals

Compliance:

Biochemical Oxygen Demand (BOD) Testing:

The effluent limitations for BOD testing are listed in Table 2 and are the same for Discharge Point 001 Mad River, 002 Percolation Ponds, 003 Lower Fischer Ranch, 004 Upper Fischer Ranch, 005 Hiller Storm water Marsh and 006 Pialorsi Ranch. BOD limitations for 2010 were not exceeded.

Total Suspended Solids Testing (TSS):

The effluent limitations for NFR testing are listed in Table 2 and are the same for Discharge Point 001 Mad River, 002 Percolation Ponds, 003 Lower Fischer Ranch, 004 Upper Fischer Ranch, 005 Hiller Storm water Marsh and 006 Pialorsi Ranch. NFR limitations for 2010 were not exceeded.

3x5 Total Coliform/ Disinfection Testing:

The effluent limitations for coliform 3x5 testing is a maximum monthly median, a most probable number (MPN) of 23 per 100 milliliters and a daily maximum of 230 MPN. and are the same for Discharge Point 001 Mad River, 002 Percolation Ponds, 003 Lower Fischer Ranch, 004 Upper Fischer Ranch, 005 Hiller Storm water Marsh and 006 Pialorsi Ranch. Coliform limitations for Monthly Median and Daily Maximum in compliance with the exception on May 2010.

Settable Matter Testing:

The effluent limitations for Settable Matter testing are listed in Table 2 and are for Discharge Point 001 Mad River. Settable Matter limitations for 2010 were not exceeded.

Chlorine Residual Testing:

The effluent limitations for Chlorine Residual testing are listed in Table 2 and are for Discharge Point 001 Mad River. Residual limitations for 2010 were not exceeded.

Nitrate as Nitrogen Testing:

The effluent limitations for Nitrate as Nitrogen testing are listed in Table 2 and are for Discharge Point 001 Mad River and 002 Percolation Ponds. Nitrate as Nitrogen limitations for 2010 were not exceeded.

Copper and Lead Testing:

The interim effluent limitations for Copper and Lead testing are listed in Table 1 and are for Discharge Point 001 Mad River. Copper and Lead interim limitations for 2010 were not exceeded.

α -BHC; 4,4'-DDT; bis(2-ethylhexyl) phthalate; 2,3,7,8-TCDD equivalents Testing:

The interim effluent limitations for these constituents are listed in Table 1 and the current limitations are listing in Table 2 and are for Discharge Point 001 Mad River. The limitations for 2010 were in compliance with the exception of 4,4'-DDT in February and March.

Acute Toxicity Monitoring:

The acute toxicity monitoring bioassay criteria for Discharge Point 001 Mad River requires a 96-hour fish bioassay test conducted at M-001 WWMF Effluent. The method for conducting this test require the laboratory maintain the test sample the same pH and temperature as when the effluent sample was collected and that ammonia, pH and temperature be recorded on 24-hour intervals and reported with the bioassay test results. If the results of any 96-hour bioassay test are not in compliance a follow up test is required within 7 day of notification. The compliance for testing results are 90 percent survival 70 percent of the time based on any monthly median, and not less than 70 percent survival 100 percent of the time. Two test species were required, Ceriodaphnia dubia and Rainbow Trout. It was determined that the C. dubia was too sensitive to the buffering agent used to maintain the pH and mortality rates were beyond the limits set forth in the permit so pH control of the C. dubia was discontinued. The testing results for Acute Testing were in compliance in 2010

Non-Compliance:

3x5 Total Coliform/ Disinfection Testing:

The effluent limitation for Coliform is listed in Table 1. The testing results are detailed in Table 3.

Table 3 3x5 Total Coliform

Date	Monthly Median	Daily Maximum
January	<2	<2
February	<2	<2
March	<2	<2
April	2	23
May	91	≥ 1600
June	2	4
July	9.5	23
August	<2	<2
September	<2	<2
October	<2	<2
November	<1.5	23
December	<1.8	<1.8

Conclusion:

It is necessary to be more vigilant of Coliform during the summer months. The excursion from our limits demonstrates that premise. During the warmer months it is standard practice to maintain higher chlorine residuals. The corresponding residual to the exceedance was less than 1mg/L and can be pointed to as the cause. This particular incident rarely occurs and through maintenance of the chlorine residual can be prevented in the future and does not indicate a problem with the process.

4,4'-DDT Testing:

The interim effluent limitations for 4,4'-DDT are listed in Table 1 and the current limitations are listing in Table 2 and are for Discharge Point 001 Mad River. The testing results are detailed in Table 4.

Table 4 4,4'-DDT

Date	Result in ug/L
January	ND
February	0.53
March	0.262
April	ND
May	ND
December	ND

Conclusion:

In February and March the results for 4,4'-DDT exceeded the limit and indicate the intermittent appearance of that constituent in our treated effluent. During the sanitary survey no generator of that constituent was identified and since all forms of DDT are illegal to purchase or sell and their appearance is intermittent it will be difficult to identify the source. The ability of any process to eliminate those minute levels is impractical so the District will continue to strive to identify and eliminate the source as its solution to the intermittent excursions.

Chronic Toxicity Monitoring:

The chronic toxicity monitoring bioassay criteria for Discharge Point 001 Mad River requires a 96-hour static renewal or 96-hour static non-renewal testing, the samples is a 24-hour composite and is representative of the volume and quality of the discharge. The sampling is conducted at M-001 WWMF Effluent. Test species for chronic testing are a vertebrate, the fathead minnow, *Pimephales promelas* (larval survival and growth test), an invertebrate, the water flea, *Ceriodaphnia dubia* (survival and reproduction test), and a plant, the green alga, *Selanastrum capricornutum* (growth test). The District conducted chronic toxicity testing one time during the 2010 discharge season. The testing results for Acute Testing are detailed in Table 5

Table 5 Chronic Toxicity Testing for 2010

Dilution Water	Date	Test Species				
		Flathead minnow		Water flea		Algae
		Survival	Growth	Survival	Reproduction	Growth
Diluted w/ Lab Control Water	Feb. 2010	TUc = 2	TUc = 2	TUc = 1	TUc =8	1

Accelerated Monitoring Requirements:

If the result of any chronic toxicity test exceeds the chronic toxicity trigger of 1.0 TUc and the testing meets all test acceptability criteria, the District shall initiate accelerated monitoring. Accelerated monitoring shall consist of four additional effluent samples, one test conducted approximately every week, over a four-week period. Testing shall commence within 14 days of receipt of the sample results of the exceedance of the chronic toxicity effluent limitation.

The following protocol was used for accelerated monitoring and the TRE implemented and detailed in a study submitted during the 2009 discharge season.

Conclusion:

It was concluded that the mortality experienced in regular testing and verified in the monitoring study was due to ammonia. The District and its consultant are currently evaluating treatment alternatives for the WWMF that will provide reliable ammonia removal as part of the long-term facilities planning process. The facilities plan for the WWMF is expected to be complete by December 2011. Until then testing will be conducted annually.

Other Projects and Commentary on the Treatment Process:

Bulrush Replanting Program:

In October of 2005 the treatment marshes were completed. Three years was estimated for the young plants to reach complete infill but during that 2005 winter we experienced severe weather conditions, increasing water levels in the ponds that caused the plants to drown or float out of the ground. That along with wildlife predation destroyed about 70% of the marsh seedlings. Spring planting has occurred to infill bare areas since the spring of 2006. Upon taking root the plants grow and propagate quite rapidly. Currently about 85% of Pond 4 is covered and 99% of Pond 5 is covered with mature Bulrush. Replanting will take place in spring of 2011 to infill any remaining voids, using plants harvested from the Storm Water Marsh. Transplanting in early spring ensures vigorous growth and has proven to produce the best success.

Treatment Process Improvements:

The success of the Marsh Project is demonstrated by the charts illustrating BOD and TSS performance over the past ten years. Chart 1 demonstrates average BOD concentration in mg/L from 2001 through 2010. The average BOD in 2010 was 27 mg/L and is below 41 mg/L, the level it was in 2001.

Chart 1 Annual Average BOD Concentrations

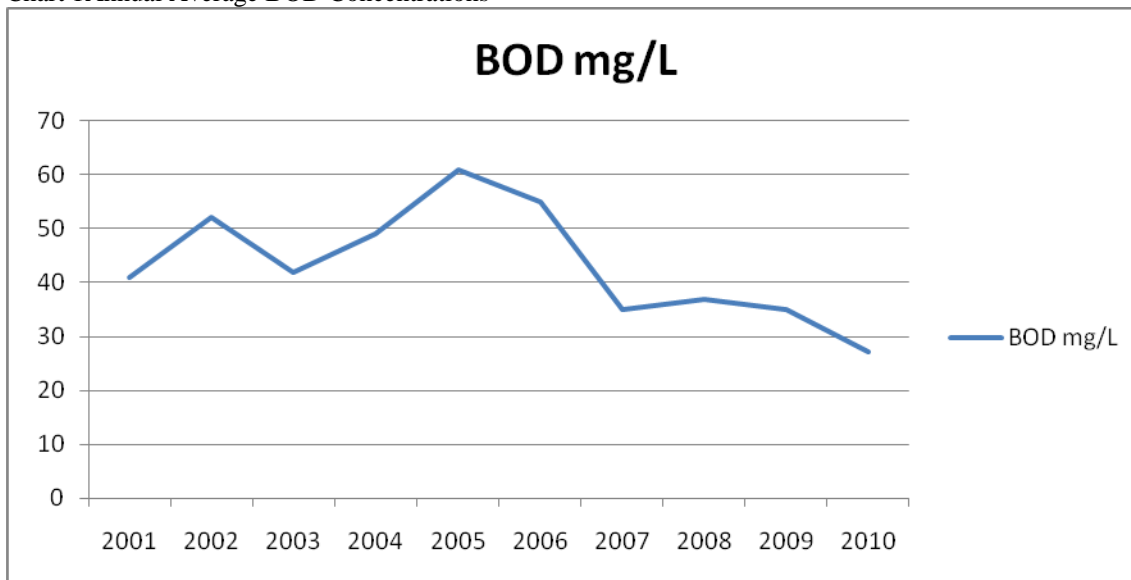


Chart 2 demonstrates average TSS concentration in mg/L from 2001 through 2010. The average TSS in 2010 was 30 mg/L and is well below 60mg/L, the level it was in 2001.

Chart 2 Annual Average TSS Concentrations

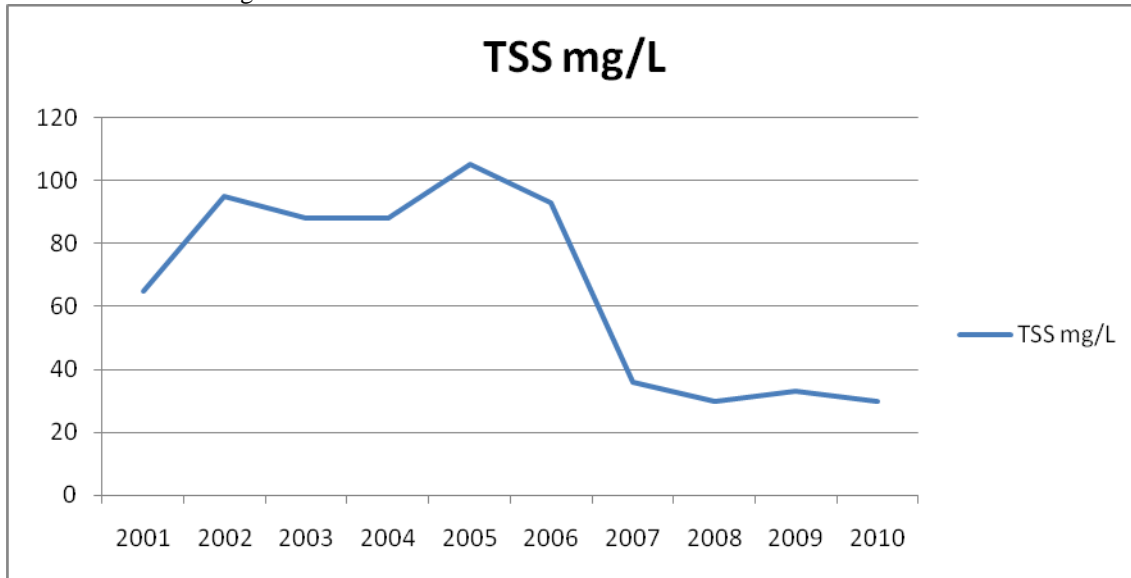


Chart 3 demonstrates the ability of the treatment marshes to impact the mass loading of BOD and TSS. The levels are well below the 2001 level.

Chart 3 Annual Average BOD and TSS Mass Loading



Charts 1-3 demonstrate the steady trend upward of BOD and TSS from 2001 through the time of the treatment marsh upgrade project completion in 2006. From 2006 through 2007 the performance of the marsh can be demonstrated by the drastic improvement. From 2007 through 2010 the efficiency of the marsh as the bulrush fills in continues to trend down.

Main Area of Concern:

Ammonia has been identified as the main area of concern as demonstrated through biological testing and the appearance of Nitrate in the ground water adjacent to the irrigation sites. Though our permit does not directly limit ammonia we recognize the importance of addressing the concern. The District with the help of our consultants are in the process of exploring alternatives to upgrade or augment our process to aid in the removal of ammonia and this issue will be addressed in the 20 Year Facilities Plan scheduled for completion in December of 2011

Summary of Work Completed in 2010

Submerged Aquatic Vegetation (SAV) Pilot Study: Attachment 1

In December 2009, the District submitted an aquatic plant establishment plan to the RWQCB for the proposed development of a Submerged Aquatic Vegetation (SAV) pilot study. The intent of the pilot study was to determine if SAV could provide a short-term solution for dealing with effluent ammonia toxicity issues at the MCSD Wastewater Management Facility (WWMF).

The pilot study was completed during the summer of 2010. MCSD harvested *C. demersum* twice from Gearheart Marsh (at the Arcata WWTF) in June 2010 and contained the harvested plants on site in an isolated pond at the MCSD WWMF to “harden” the plants with 50% wastewater. On June 17, 2010, the MCSD sent the RWQCB notification via email that the SAV plants would be added to Pond 3. The plants were introduced to Pond 3 and constrained at the north end of the pond with a floating net that extended across the entire width of the pond. Water quality monitoring began on June 28, 2010 and was performed every weekday morning for three weeks. On July 21, 2010, MCSD reported that the plant volume was decreasing significantly due to predation. By the end of the summer, the overall goal of establishing SAV in Pond 3 was not successful; however, data collected during this time indicated a short-term improvement in the WWMF effluent water quality. In December 2010 the District submitted a letter to the RWQCB summarizing the findings.

CDO Request for Priority Pollutants: Attachment 2

The current NPDES permit for the WWMF includes a schedule for compliance for the final effluent limitations. Starting May 18, 2010, treated effluent discharged from the WWMF to the Mad River was subject to final effluent limitations for select priority pollutants. The select priority pollutants, and the interim and final effluent limits for the designated constituents were based on the results of a Reasonable Potential Analysis (RPA) conducted on the WWMF effluent. The select priority pollutants included copper, lead, bis(2-Ethylhexyl) phthalate, 4,4'-DDT, a-hexachloro-cyclohexane, and 2,3,7,8-TCDD equivalents (dioxins).

On February 11, 2010, MCSD submitted a progress report on the compliance schedule to the RWQCB. The progress report indicated that Tasks 1 and 2 of the compliance schedule were completed by the compliance dates required, but that Tasks 3 through 5 still were not completed. Task 6 was the final task and included compliance with the final effluent limitations for each select constituent. The District, SHN, and RWQCB staff members met on April 20, 2010, to discuss the compliance schedule and the delay in compliance for Tasks 3 through 6. As discussed during that meeting, the District decided to request that a CDO be issued to address the pending non-compliance issues associated with the final effluent limitations for select priority pollutants.

As suggested by RWQCB staff, MCSD submitted a CDO request in June 2010 that included the following:

1. a review of the constituent monitoring results to date,
2. a summary of the reasons that the WWMF is unable to meet the new effluent limitations for a designated constituent, and
3. a proposed schedule showing how the District will be able to meet the final effluent limitations in the future.

Water Effects Ratio (WER) Analysis: Attachment 3

As part of an investigation to determine the appropriate discharger-specific WER for use in the District copper discharge limitations, Staff enlisted the services of Winzler and Kelly and Pacific EcoRisk Laboratory (PER) to conduct two rounds of WER testing. In order to assess the sensitivity of the *C. dubia* test organisms to toxic stress, a reference toxicant test was performed concurrently with each round of testing. This testing was performed in support of determining the applicable discharger-specific WER for use in the District copper discharge limitations. In order to assure that an appropriate range of copper concentrations would be used in the subsequent definitive tests, a preliminary copper rangefinding test was performed with each District effluent sample. Rangefinding test solutions were prepared by spiking aliquots of the effluent with copper. Water quality characteristics (pH, dissolved oxygen [D.O.], and conductivity) were measured for each test solution immediately prior to use in these rangefinding tests.

Two rounds of sampling and testing were conducted and the results are as follows. Round 1 had a WER of 29.5 and Round 2 had a WER of 31.6 for a Geometric Mean of 30.5. In summery our copper limitation has the potential to go from a monthly average 3.6 micrograms/ Liter to approximately 34 micrograms/ Liter. This is well above the copper concentration in our effluent which averages <20 micrograms/ Liter. This limit is an actual measurement of the

concentration of copper that is toxic in our unique treated effluent and not an assumption from laboratory tests conducted with laboratory water which is how the limits were set originally.

The RWQCB has considered this analysis and has made changes to our permit to reflect the outcome of the tests. These changes will be reflected in our permit set for renewal in 2011.

MRP Revision Requests/NPDES Permit Renewal: Attachment 4

In August 2010 MCSD submitted an updated request for revisions to the Monitoring and Reporting Program (MRP) based on the results of the WER analysis and other changes in the regulatory program. The request included proposed modifications to the receiving water monitoring locations defined for the WWMF, as well as a request for a reduction in sample frequency for select constituents at the main effluent monitoring location (M-001).

In October 2010 MCSD met with the RWQCB to discuss the proposed MRP revisions and the CDO request submitted in June. During the meeting and throughout subsequent conversations with RWQCB staff, it was suggested that rather than just modify the MRP, MCSD should renew the current NPDES permit for another 5 year term. In order to facilitate the permit renewal process, RWQCB staff requested MCSD provide an updated RPA based on data collected under the current permit term. The revised RPA was submitted to the RWQCB in November 2010.

The RWQCB provided MCSD with a draft of the revised NPDES permit for review and comment on November 17, 2010. MCSD provided comments on the draft permit in December 2010. The draft permit is currently listed on the consent calendar for adoption at the next SWRCB hearing.

Local Limits Work Plan: Attachment 5

During an inspection by Tetra Tech on behalf of the RWQCB it was determined the District local limits were not adequate. As part of the process to update the local limits it was also determined the District Sewer Use Ordinance would also need to be updated to better give the District authority to enforce new local limits and to establish individual discharge permits of commercial customers that have the potential to discharge other than domestic sewerage. The District has enlisted services of Freshwater Environmental and has drafted a sewer use ordinance that will be reviewed and has submitted a local limits work plan to the RWQCB for concurrence.

Special Studies

Under WDR Order No. R1-2008-0039, MCSD is required to complete two special studies, a water reclamation study and a summer effluent disposal alternatives review. During 2010, MCSD completed work on both special studies. The reclamation study was due February 1, 2011 and the summer effluent disposal alternatives review is due in January 2012. In addition to the special studies, MCSD is also currently working on a 20-year facilities plan for the WWMF to be completed later this year.

Work Related to Facilities Plan

In April 2010, MCSD conducted a public scoping workshop to kick off the WWMF feasibility study planning process. The goal of the feasibility study planning process was to identify the final alternatives to be considered in the 20-Year Facilities Plan for the WWMF. The District and SHN staff presented an update on the facilities planning process during the District's board meeting on July 21, 2010. The presentation covered the progress the District has made on the study and included review of the following:

1. The outcome from the public scoping workshop conducted in April 2010.
2. The results of the process scoring exercise conducted by the technical review committee in June 2010.
3. The compilation and ranking of the project alternatives identified for further study in the 20-year Facilities Plan.

INDEX OF ATTACHMENTS and EXHIBITS

ATTACHMENT 1:	Submerged Aquatic Vegetation Pilot Study
ATTACHMENT 2:	CDO Request for Priority Pollutants
ATTACHMENT 3:	Water Effects Ratio (WER) Analysis
ATTACHMENT 4:	MRP Revision Requests/NPDES Permit Renewal
ATTACHMENT 5:	Local Limits Work Plan

EXHIBIT A: Tabular and Graphical Data

Influent and Effluent Monthly Totals
Influent and Effluent Maximum Day

EXHIBIT B: Tabular

CFS, River Dilution, Effluent Flow and Effluent Distribution

EXHIBIT C: Tabular and Graphical Data

Monthly Totals for Effluent Flow and Discharge Disposal Locations
Daily Totals for Effluent Flow and Discharge Disposal Locations

EXHIBIT D: Tabular Data

Monthly Monitoring Report (Permit exceedances highlighted in yellow)

EXHIBIT E: Tabular Data

Influent and Effluent Testing Monthly Averages
Daily Influent and Effluent Testing

EXHIBIT F: Tabular and Graphical Data

30-day Average BOD and NFR Worksheet
Influent BOD, Terminal Pond and Effluent BOD Test Results
BOD and NFR 30 Day Average Removal Comparisons
BOD and NFR 30 Average lbs/day Chart
30 Day BOD and NFR Maximum, Minimum and Average Chart
BOD and NFR 30 Average Concentration Chart
BOD Influent, Effluent and Terminal Pond Comparisons

EXHIBIT G: Tabular and Graphical Data

Monthly Averages for pH, temperature Ionized and Unionized Ammonia
Influent and Effluent Average Total Ammonia Chart
Relationship between Temperature and Ammonia Percent Removal Chart

EXHIBIT H: Tabular Data

Discharge Data R-003
Discharge Data R-001, R-002 and M-001
Discharge Data R-004 and R-005
Well Monitoring Data

EXHIBIT I: Tabular Graphical Data

Pond Sludge Depths
Remaining Sludge Capacity Chart
Monthly/ Annual Averages for Pond Ammonia
Monthly/ Annual Averages for Pond Temperature
Monthly/ Annual Averages for Pond pH
Monthly/ Annual Averages for Pond Dissolved Oxygen
Monthly/ Annual Averages for Pond Level

EXHIBIT J: Tabular and Graphical Data


Monthly Total Aerator Hours
Monthly Total Aerator Hours versus Ammonia Chart
Monthly Total Aerator Hours versus BOD Removal Chart
Monthly Total Aerator Hours versus Effluent BOD Chart
Monthly Total Aerator Hours versus BOD Percent Removal Chart

EXHIBIT K: Tabular Data

TKN, Alkalinity, and Nitrate Special Testing
Monthly Total Electric, Cl₂, SO₂, and Rain Gage Data

If you have any questions, please contact this office.

"I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED, IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."



NORMAN SHOPAY, DISTRICT GENERAL MANAGER



CONSULTING ENGINEERS & GEOLOGISTS, INC.

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Reference: 008189.100

December 14, 2010

Ms. Lisa Bernard
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95540

Subject: Submerged Aquatic Vegetation Introduction to Pond 3, McKinleyville Community Services District, McKinleyville, California; WDR Order No. R1-2008-0039; NPDES Permit No. CA0024490; WDID No. 1B82084OHUM

Dear Ms. Bernard:

SHN Consulting Engineers & Geologists, Inc. (SHN) submitted an aquatic plant establishment plan on behalf of the McKinleyville Community Services District (MCSD) in 2009 (Table 1). The intent of this work plan was to propose a short-term solution for dealing with effluent ammonia toxicity issues at the MCSD Wastewater Management Facility (WWMF), located in McKinleyville, California (Figure 1). The purpose of this letter is to summarize the findings data collected after the introduction of Submerged Aquatic Vegetation (SAV) in Pond 3 and to provide additional recommendations as needed.

Table 1 Schedule of Tasks Aquatic Vegetation Establishment Plan MCSD Wastewater Management Facility, McKinleyville, CA			
Task No.	Task Description	Approximate Date	Status
1	Compile a list of potential SAV plants that can survive and flourish in the conditions of Pond 3.	Fall 2009	Complete
2	Test potential species in a controlled experimental pond filled with wastewater from Pond 3. Monitor holding water for dissolved oxygen, pH, temperature, ammonia-nitrogen, and nitrate-nitrogen. Chronicle observations of survival.	Fall-Winter 2009	Complete
3	Summarize pilot study findings in the 2009 Annual Report.	Spring 2010	Complete
4	Based on the findings of the pilot study, select SAV species for Pond 3.	Spring 2010	Complete
5	Monitor indicators of nitrification within Pond 3 and denitrification in Wetlands 4 and 5.	Spring-Fall 2010	Complete
6	Summarize findings in a brief report and provide additional recommendations as needed.	Fall 2010	Complete

Ceratophyllum demersum (coon's tail) was selected as the SAV species to promote nitrification in Pond 3 because of its reported growth characteristics, tolerances, and potential local availability. This species has a multiple stem growth form, high anaerobic and CaCO_3 tolerances, and is tolerant of higher pH environments (USDA, 2009).

MCSD performed a bench test to verify the nitrification abilities of *C. demersum* and its viability in wastewater from Pond 3. Five-gallon buckets were filled with wastewater from Pond 3 for two weeks to compare samples seeded with SAV (experimental sample) to a control sample. The bench test results were included in the 2009 Annual Report and indicated that *C. demersum* was viable in wastewater and converted ammonia to nitrate. It should be noted that the control sample utilized ammonia similarly to the experimental sample, because of the ammonia demand from the algae living in the wastewater; however, nitrates were not detected.

During a reconnaissance of Allen and Gearheart marshes at the Arcata Wastewater Treatment Plant and Wildlife Sanctuary, a large source of *C. demersum* was identified in Gearheart Marsh. MCSD harvested *C. demersum* twice from Gearheart Marsh in June 2010 and contained the harvested plants on site in an isolated pond at the MCSD WWMF to "harden" the plants with 50% wastewater. On June 17, 2010, the MCSD Operator, Greg Orsini sent the RWQCB notification via email that the SAV plants would be added to Pond 3. The plants were introduced to Pond 3 and constrained at the north end of the pond with a floating net that extended across the entire width of the pond.

Introduction of SAV to Pond 3 Findings

Water quality monitoring began on June 28, 2010 and was performed every weekday morning for three weeks. Temperature, pH, and dissolved oxygen concentration were measured in Pond 3, downstream of the plants. Ammonia and nitrate concentrations were measured upstream of the plants in Pond 2, starting on July 2 and July 7, 2010, respectively. In general, temperatures ranged from 18.5 to 20.9 °C and pH ranged from 7.1 to 8.3, with both parameters decreasing gradually over the monitoring period. More distinct were the variations in the Pond 3 concentrations of dissolved oxygen, ammonia, and nitrate (Figure 2). Linear trend lines have been added to the figure to accentuate the overall increase and decrease in concentrations and were adjusted to identify large breaks. Dissolved oxygen steadily decreased through the monitoring period, indicating reduced conditions, which do not allow for the production of nitrate. Initially ammonia concentrations decreased from 26 to 18 mg/L, lower than any record of ammonia concentration in the first four ponds in all of 2009. A reduction in ammonia concentration can be observed in the effluent the following week. Nitrate production was observed initially and then stopped completely at the end of the second week. This is likely due to the diminishing availability of dissolved oxygen. In turn, ammonia concentrations began to increase slowly by the end of the monitoring period.

On July 21, 2010, MCSD reported that the plant volume was decreasing significantly due to predation. It seems reasonable that trends are a product of both in-pond chemistry and the unfortunate loss of vegetation. The overall goal of establishing these species in Pond 3 was not successful; however, their presence indicated a short-term improvement in the WWMF effluent water quality.

Recommendation

MCSD will continue to evaluate additional ammonia removal alternatives as part of the long-term facilities planning process for the WWMF.

If you have any questions, please call me or Rose Patenaude at 707-441-8855.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

Lisa K. Stromme, P.E.
Water Resources Engineer/
Planning & Permitting Dept Head

LKS/JRP:jlr

c: Norman Shopay, MCSD
Greg Orsini, MCSD

Reference

United States Department of Agriculture, Natural Resources Conservation Service. (Accessed: September 11, 2009). USDA-NRCS Plants Database. "Wetland Flora: Field Office Illustrated Guide To Plant Species." Accessed at:
http://plants.usda.gov/java/profile?symbol=CEDE4&photoID=cede4_005_avd.tif.
Washington, D.C.:USDA Natural Resources Conservation Service.



CONSULTING ENGINEERS & GEOLOGISTS, INC.

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Reference: 008189.610

June 25, 2010

Ms. Lisa Bernard
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

Subject: Request for a Cease and Desist Order for the McKinleyville Community Services District Wastewater Management Facility, McKinleyville, CA; WDR Order No. R1-2008-0039, NPDES Permit No. CA0024490, WDID No. 1B82084OHUM

Dear Ms. Bernard:

SHN Consulting Engineers & Geologists, Inc. (SHN) on behalf of the McKinleyville Community Services District (MCSD) is submitting the following request for a Cease and Desist Order (CDO) associated with National Pollutant Discharge Elimination System (NPDES) Permit No. CA0024490 for the MCSD Wastewater Management Facility (WWMF) located in McKinleyville, California.

CDO Request Summary

Starting May 18, 2010, treated effluent discharged from the WWMF to the Mad River will be subject to final effluent limitations for select priority pollutants. The select priority pollutants, and the interim and final effluent limits for the designated constituents were based on the results of a Reasonable Potential Analysis (RPA) conducted on the WWMF effluent. The select priority pollutants include copper, lead, bis(2-Ethylhexyl) phthalate, 4,4'-DDT, a-hexachloro-cyclohexane, and 2,3,7,8-TCDD equivalents (dioxins).

The current NPDES permit for the WWMF became effective August 1, 2008, and includes a schedule for compliance for the final effluent limitations by May 18, 2010. On February 11, 2010, SHN, on behalf of MCSD, submitted a progress report on the compliance schedule to the RWQCB. The progress report indicated that Tasks 1 and 2 of the compliance schedule were completed by the compliance dates required, but that Tasks 3 through 5 still have not been completed. Task 6 is the final task and includes compliance with the final effluent limitations for each select constituent; it too has yet to be completed.

Tasks 1 through 4 in the compliance schedule were designed to address source control efforts in McKinleyville. As noted, Tasks 1 and 2 were completed; however, the District is still working on the development of a local limits analysis to address and complete the remaining source control items outlined in Tasks 3 and 4. Task 5 in the schedule allowed the District to submit a work plan, for RWQCB approval, that presented a plan to achieve compliance with the final effluent limitations if the source control efforts described in Tasks 1 through 4 did not result in compliance with the final effluent limitations. The deadline for compliance with Task 5 was December 1, 2009.

Ms. Lisa Bernard

Request for a CDO for the MCSD Wastewater Management Facility

June 25, 2010

Page 2

The District, SHN, and RWQCB staff members met on April 20, 2010, to discuss the compliance schedule and the delay in compliance for Tasks 3 through 6. As discussed during that meeting, the District has decided to request that a CDO be issued to address the pending non-compliance issues associated with the final effluent limitations for select priority pollutants.

As suggested by RWQCB staff, we are submitting the following information in support of this CDO request :

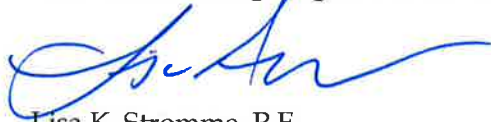
1. a review of the constituent monitoring results to date (Attachment 1),
2. a summary of the reasons that the WWMF is unable to meet the new effluent limitations for a designated constituent (Attachment 2), and
3. a proposed schedule showing how the District will be able to meet the final effluent limitations in the future (Attachment 3).

Please review the attached information, and begin the CDO process. We look forward to working with the RWQCB over the next few months to develop the final CDO and associated compliance schedule for the MCSD WWMF.

If you have any questions regarding this CDO request, or if we can help you in any way, please call Mike Foget or me at 707-441-8855.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.



Lisa K. Stromme, P.E.

Water Resources Engineer

LKS:bmd

Attachments: 1. Priority Pollutant Results (2008-2010)
2. Summary of Non-Compliance Issues
3. Proposed Compliance Schedule

c. w/ attach: Norman Shopay, MCSD
Greg Orsini, MCSD

MCSD Wastewater Management Facility
NPDES Compliance - Pollutant of Concern Analysis Summary
October 2008 - May 2010

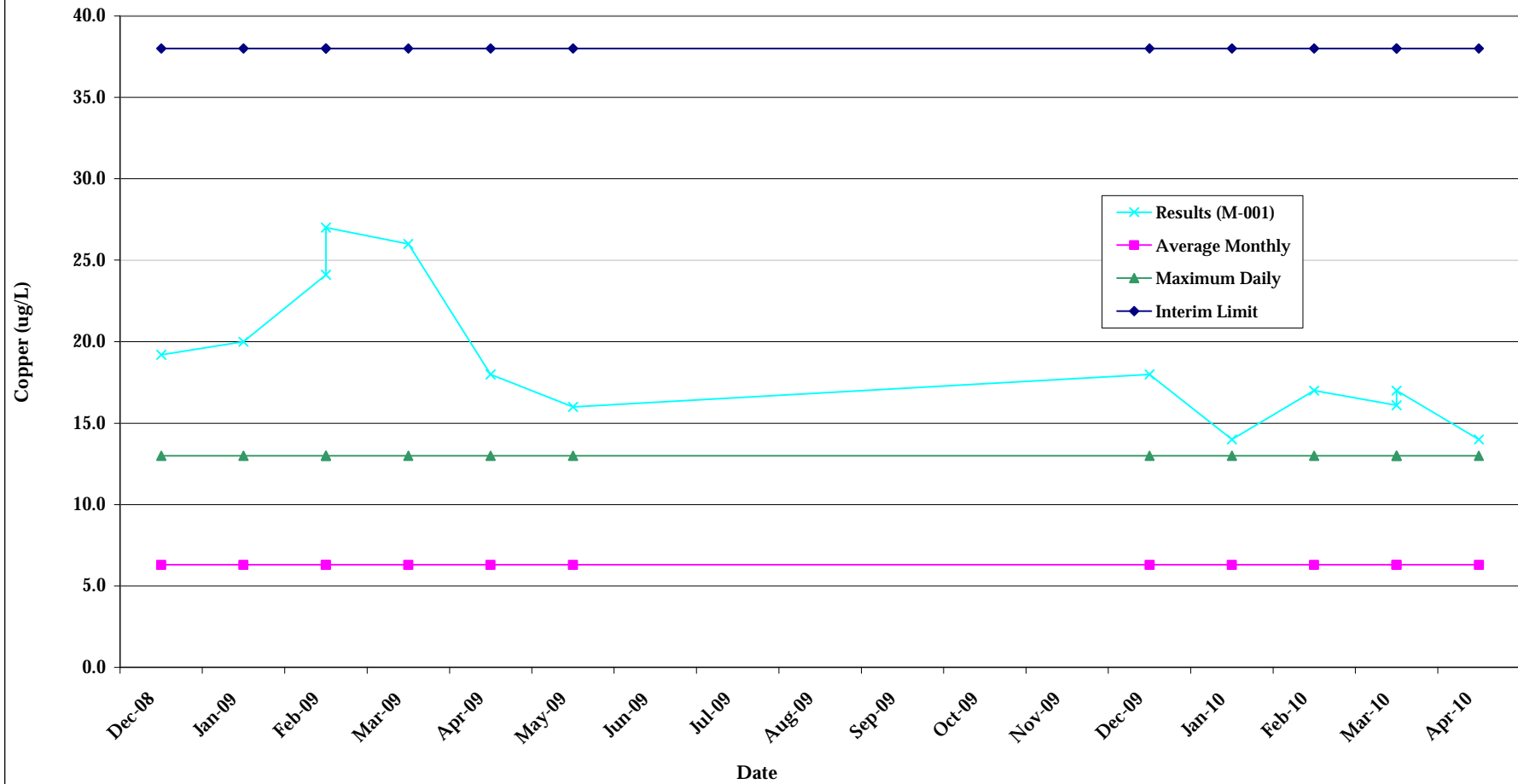
Constituents	Units	Interim Limit	Final Limit		Notes
		Maximum Daily	Average Monthly	Maximum Daily	
Copper	ug/L	38	6.3	13	Table E-14: 90-94 mg/L as CaCO ₃
Lead	ug/L	0.6	2.3	4.6	---
alpha-BHC	ug/L	0.099	0.0039	0.0078	---
4,4'DDT	ug/L	0.031	0.00059	0.0012	---
bis(2-ethylhexyl)phthalate	ug/L	4	1.8	3.6	---
2,3,7,8-TCDD	pg/L	0.094	0.013	0.026	---

Constituent	Date	Results (M-001)	MDL	RL	DF
Copper	12/30/2008	19.2	0.1	0.6	1.25
	1/7/2009	20.0	0.1	0.6	1.25
	2/4/2009	24.1	0.1	0.6	1.25
	2/10/2009	27	---	0.5	---
	3/5/2009	26	---	0.5	---
	4/7/2009	18	---	0.5	---
	5/12/2009	16	---	0.5	---
	12/23/2009	18	---	0.5	---
	1/11/2010	14	---	1	---
	2/11/2010	17	---	0.5	---
	3/9/2010	16.1	0.1	0.5	1
	3/15/2010	17	---	0.5	---
	4/16/2010	14	---	0.5	---

Definitions:

RL	Reporting Limit
MDL	Method Detection Limit
DF	Dilution Factor
ND	Non-Detect

Graph 1. Priority Pollutant Analysis Summary for Copper
MCSD 2008-2010



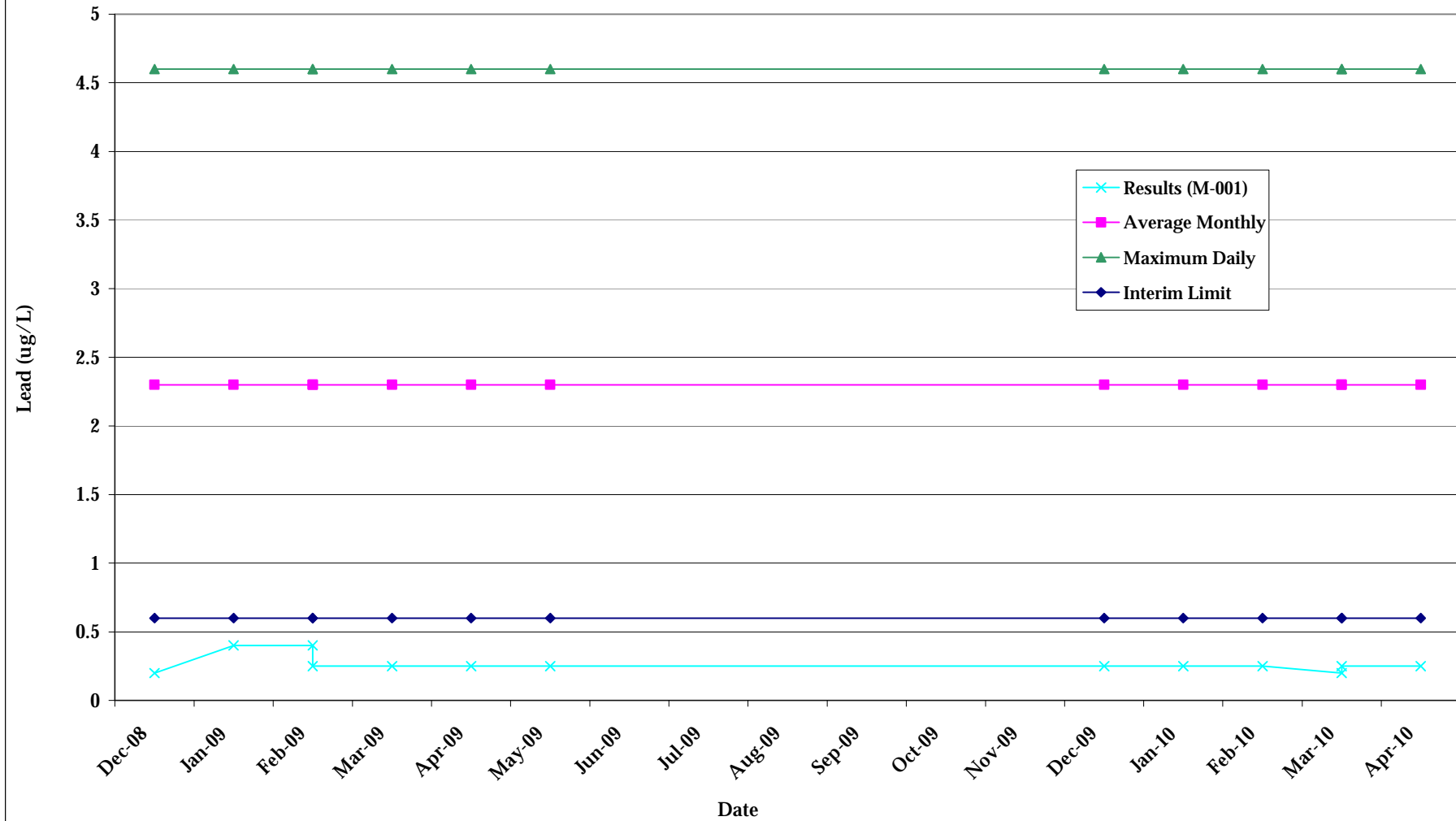
MCSO Wastewater Management Facility
NPDES Compliance - Pollutant of Concern Analysis Summary
October 2008 - May 2010

Constituents	Units	Interim Limit	Final Limit		Notes
		Maximum Daily	Average Monthly	Maximum Daily	
Copper	ug/L	38	6.3	13	---
Lead	ug/L	0.6	2.3	4.6	Table E-14: 90-94 mg/L as CaCO ₃
alpha-BHC	ug/L	0.099	0.0039	0.0078	---
4,4'DDT	ug/L	0.031	0.00059	0.0012	---
bis(2-ethylhexyl)phthalate	ug/L	4	1.8	3.6	---
2,3,7,8-TCDD	pg/L	0.094	0.013	0.026	---

Constituent	Date	Results (M-001)	MDL	RL	DF	Notes
Lead	12/30/2008	0.2	0.1	0.6	1.25	---
	1/7/2009	0.4	0.1	0.6	1.25	---
	2/4/2009	0.4	0.1	0.6	1.25	---
	2/10/2009	0.25	---	0.5	---	ND = 0.5*MDL
	3/5/2009	0.25	---	0.5	---	ND = 0.5*MDL
	4/7/2009	0.25	---	0.5	---	ND = 0.5*MDL
	5/12/2009	0.25	---	0.5	---	ND = 0.5*MDL
	12/23/2009	0.25	---	0.5	---	ND = 0.5*MDL
	1/11/2010	0.25	---	0.5	---	ND = 0.5*MDL
	2/11/2010	0.25	---	0.5	---	ND = 0.5*MDL
	3/9/2010	0.2	0.1	0.5	1	---
	3/15/2010	0.25	---	0.5	---	ND = 0.5*MDL
	4/16/2010	0.25	---	0.5	---	ND = 0.5*MDL

Definitions:	
RL	Reporting Limit
MDL	Method Detection Limit
DF	Dilution Factor
ND	Non-Detect

Graph 2. Priority Pollutant Analysis Summary for Lead
MCSD 2008-2010



MCSD Wastewater Management Facility
NPDES Compliance - Pollutant of Concern Analysis Summary
October 2008 - May 2010

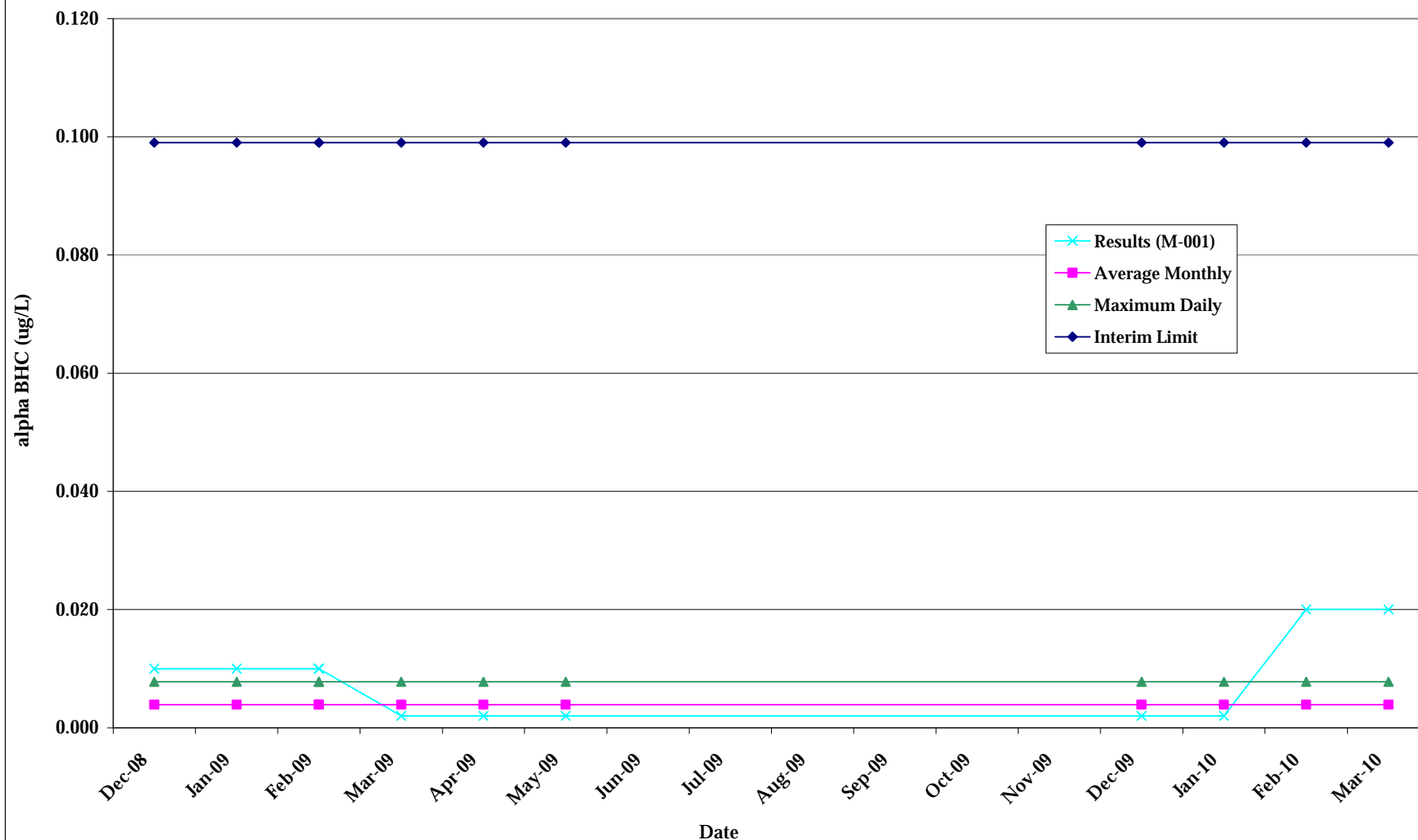
Constituents	Units	Interim Limit	Final Limit		Notes
		Maximum Daily	Average Monthly	Maximum Daily	
Copper	ug/L	38	6.3	13	---
Lead	ug/L	0.6	2.3	4.6	---
alpha-BHC	ug/L	0.099	0.0039	0.0078	---
4,4'DDT	ug/L	0.031	0.00059	0.0012	---
bis(2-ethylhexyl)phthalate	ug/L	4	1.8	3.6	---
2,3,7,8-TCDD	pg/L	0.094	0.013	0.026	---

Constituent	Date	Results (M-001)	MDL	RL	DF	Notes
alpha-BHC	12/30/2008	0.010	0.020	0.100	10	ND = 0.5*MDL
	1/7/2009	0.010	0.020	0.100	1	ND = 0.5*MDL
	2/4/2009	0.010	0.020	0.100	1	ND = 0.5*MDL
	2/5/2009	0.010	0.020	0.100	1	ND = 0.5*MDL
	3/3/2009	0.002	0.004	0.020	1	ND = 0.5*MDL
	4/2/2009	0.002	0.004	0.020	1	ND = 0.5*MDL
	5/20/2009	0.002	0.004	0.020	1	ND = 0.5*MDL
	12/21/2009	0.002	0.004	0.020	1	ND = 0.5*MDL
	1/13/2010	0.002	0.004	0.020	1	ND = 0.5*MDL
	2/22/2010	0.020	0.040	0.200	10	ND = 0.5*MDL
	3/9/2010	0.020	0.040	0.200	10	ND = 0.5*MDL

Definitions:

RL	Reporting Limit
MDL	Method Detection Limit
DF	Dilution Factor
ND	Non-Detect

Graph 3. Priority Pollutant Analysis Summary for alpha-BHC
MCSD 2008-2010



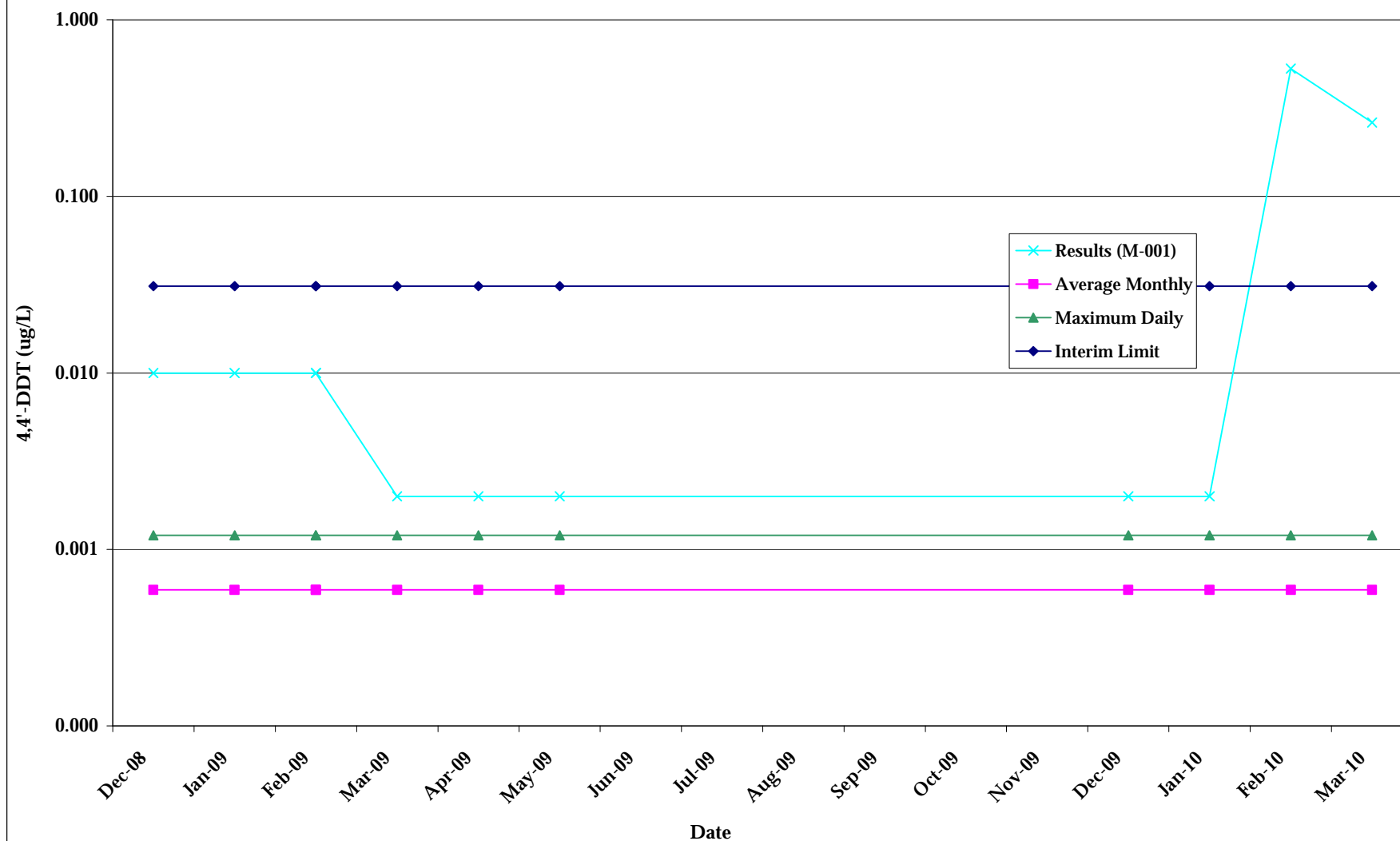
MCSD Wastewater Management Facility
NPDES Compliance - Pollutant of Concern Analysis Summary
October 2008 - May 2010

Constituents	Units	Interim Limit	Final Limit		Notes
		Maximum Daily	Average Monthly	Maximum Daily	
Copper	ug/L	38	6.3	13	---
Lead	ug/L	0.6	2.3	4.6	---
alpha-BHC	ug/L	0.099	0.0039	0.0078	---
4,4' DDT	ug/L	0.031	0.00059	0.0012	---
bis(2-ethylhexyl)phthalate	ug/L	4	1.8	3.6	---
2,3,7,8-TCDD	pg/L	0.094	0.013	0.026	---

Constituent	Date	Results (M-001)	MDL	RL	DF	Notes
4,4'-DDT	12/30/2008	0.010	0.020	0.100	10	ND = 0.5*MDL
	1/7/2009	0.010	0.020	0.100	1	ND = 0.5*MDL
	2/4/2009	0.010	0.020	0.100	1	ND = 0.5*MDL
	2/5/2009	0.010	0.020	0.100	1	ND = 0.5*MDL
	3/3/2009	0.002	0.004	0.020	1	ND = 0.5*MDL
	4/2/2009	0.002	0.004	0.020	1	ND = 0.5*MDL
	5/20/2009	0.002	0.004	0.020	1	ND = 0.5*MDL
	12/21/2009	0.002	0.004	0.020	1	ND = 0.5*MDL
	1/13/2010	0.002	0.004	0.020	1	ND = 0.5*MDL
	2/22/2010	0.530	0.040	0.200	10	---
	3/9/2010	0.262	0.040	0.200	10	---

Definitions:	
RL	Reporting Limit
MDL	Method Detection Limit
DF	Dilution Factor
ND	Non-Detect

Graph 4. Priority Pollutant Analysis Summary for 4,4'-DDT
MCSD 2008-2010



MCSD Wastewater Management Facility
NPDES Compliance - Pollutant of Concern Analysis Summary
October 2008 - May 2010

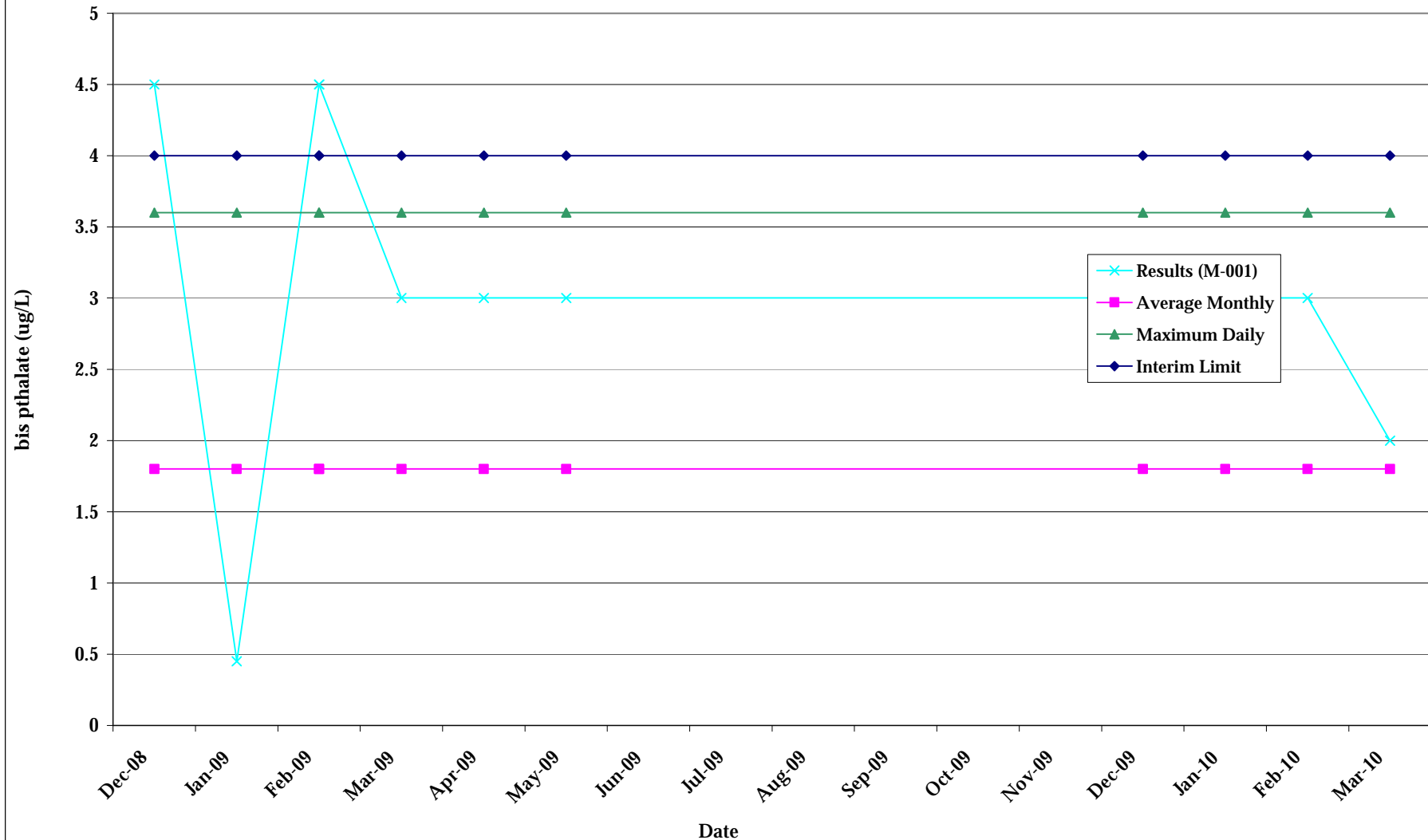
Constituents	Units	Interim Limit	Final Limit		Notes
		Maximum Daily	Average Monthly	Maximum Daily	
Copper	ug/L	38	6.3	13	---
Lead	ug/L	0.6	2.3	4.6	---
alpha-BHC	ug/L	0.099	0.0039	0.0078	---
4,4'DDT	ug/L	0.031	0.00059	0.0012	---
bis(2-ethylhexyl)phthalate	ug/L	4	1.8	3.6	---
2,3,7,8-TCDD	pg/L	0.094	0.013	0.026	---

Constituent	Date	Results (M-001)	MDL	RL	DF	Notes
bis-phthalate	12/30/2008	4.5	9	50	1	ND = 0.5*MDL
	1/7/2009	0.45	0.9	5	1	ND = 0.5*MDL
	2/4/2009	4.5	9	50	1	ND = 0.5*MDL
	2/5/2009	4.5	9	50	1	ND = 0.5*MDL
	3/3/2009	3	2	10	1	---
	4/2/2009	3	2	10	1	---
	5/7/2009	3	2	10	1	---
	12/21/2009	3	2	10	1	---
	1/13/2010	3	2	10	1	
	2/22/2010	3	2	10	1	
	3/9/2010	2	2	10	1	

Definitions:

RL	Reporting Limit
MDL	Method Detection Limit
DF	Dilution Factor
ND	Non-Detect

Graph 5. Priority Pollutant Analysis Summary for bis-phthalate
MCSD 2008-2010



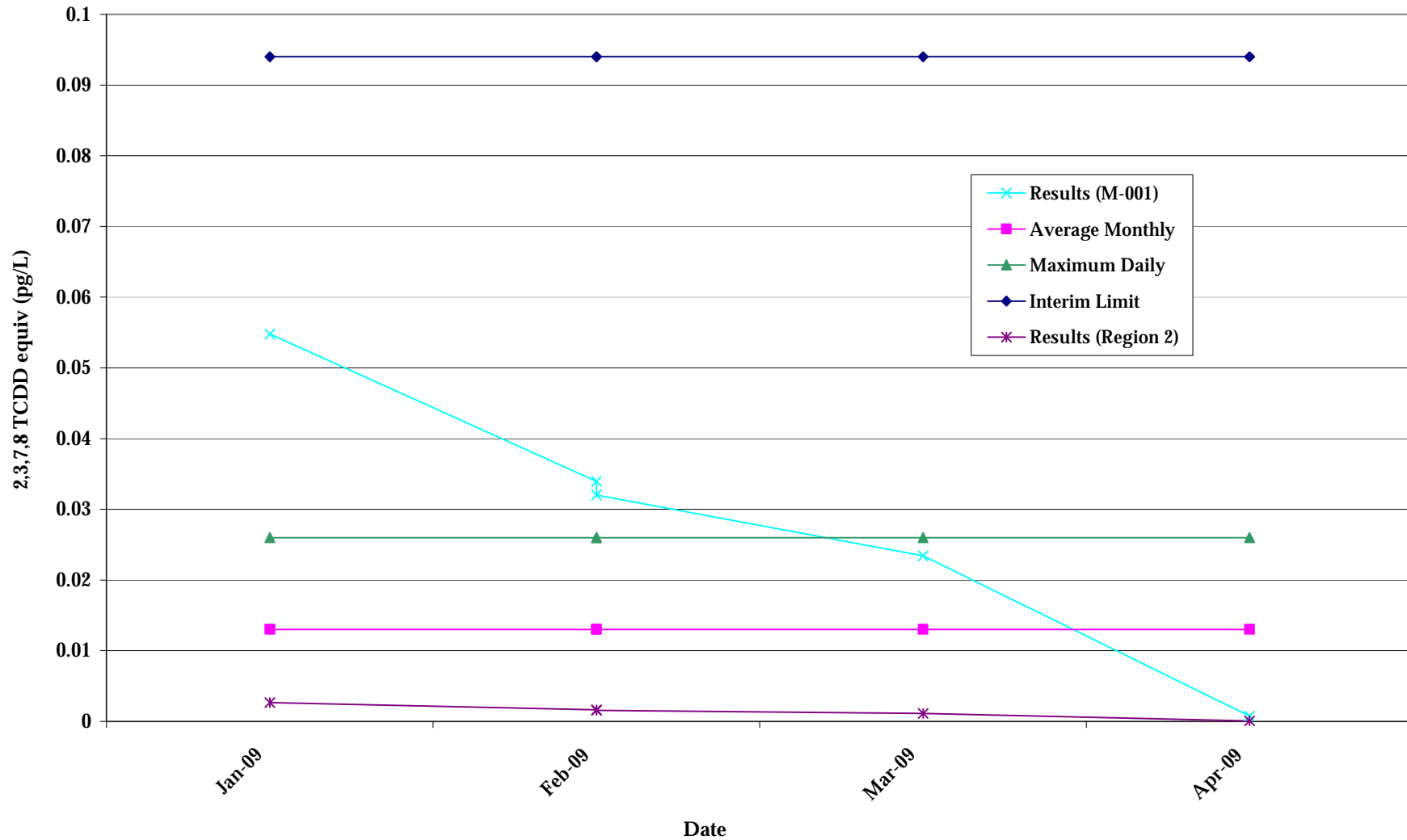
MCSD Wastewater Management Facility
NPDES Compliance - Pollutant of Concern Analysis Summary
October 2008 - May 2010

Constituents	Units	Interim Limit	Final Limit		Notes
		Maximum Daily	Average Monthly	Maximum Daily	
Copper	ug/L	38	6.3	13	---
Lead	ug/L	0.6	2.3	4.6	---
alpha-BHC	ug/L	0.099	0.0039	0.0078	---
4,4'DDT	ug/L	0.031	0.00059	0.0012	---
bis(2-ethylhexyl)phthalate	ug/L	4	1.8	3.6	---
2,3,7,8-TCDD	pg/L	0.094	0.013	0.026	---

Constituent	Date	Results (M-001)	Notes	Results (Region 2)	Notes
2,3,7,8-TCDD equiv	1/23/2009	0.05476	1998 WHO TEQ	0.002652	Includes BEF
	2/13/2009	0.03395	1998 WHO TEQ	0.00162	Includes BEF
	2/18/2009	0.03204	1998 WHO TEQ	0.001544	Includes BEF
	3/15/2009	0.02341	1998 WHO TEQ	0.001106	Includes BEF
	4/17/2009	0.000753	1998 WHO TEQ	0.00008	Includes BEF

Definitions:	
RL	Reporting Limit
MDL	Method Detection Limit
DF	Dilution Factor
ND	Non-Detect

Graph 6. Priority Pollutant Analysis Summary for 2,3,7,8-TCDD equiv
MCSD 2008-2010



Attachment 2

Summary of Non-Compliance Issues

The following sections provide a brief summary of the potential for the existing WWMF to meet the final average monthly and maximum daily effluent limitations for each designated constituent.

A. Copper: non-compliant

The existing WWMF system will be unable to meet the final effluent limitations for copper based on the data collected to date (see Attachment 1, Graph 1).

The final average monthly effluent limitation for copper is 6.3 ug/L and the final maximum daily effluent limitation is 13 ug/L. Effluent discharged from the facility from December 2008 through March 2010 has had levels of copper ranging from 14 to 27 ug/L.

The NPDES permit for the facility uses a default Water Effects Ratio (WER) of 1.0 to calculate California Toxics Rule (CTR) criteria for applicable priority pollutants. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper.

The District has recently contracted with a consulting firm to perform studies to determine site-specific WERs and site specific dissolved-to-total metal translators. The District intends to review the results of the studies and may request that the RWQCB reopen the NPDES permit to include appropriate requirements and/or effluent limitations for copper, as necessary.

If the results of the WER and metal translator studies do not result in modification to the existing effluent limitations for copper, the District will continue to pursue source controls as well as review facility upgrade options to address these exceedances as part of the long-term facility planning process.

B. Lead: compliant

The existing WWMF system will be able to meet the final effluent limitations for lead based on data collected to date (see Attachment 1, Graph 2).

C. a-hexachloro-cyclohexane: compliant

The existing WWMF system will be able to meet the final effluent limitations for a-hexachloro-cyclohexane (alpha-BHC) based on data collected to date (see Attachment 1, Graph 3).

The final average monthly effluent limitation for alpha-BHC is 0.0039 ug/L and the final maximum daily effluent limitation is 0.0078 ug/L. Effluent discharged from the facility from December 2008 through March 2010 has had only non-detects of alpha-BHC. MDLs ranged from 0.004 ug/L to 0.040 ug/L. Note, Graph 3 shows estimated concentrations of alpha-BHC for each sample event, calculated using 0.5 times the MDL for each event. This calculation estimates concentrations greater than the effluent limitations for some events, when MDLs were high due to matrix interference, however this constituent has been non-detect for all sample events conducted to date.

D. 4,4'-DDT: non-compliant

The existing WWMF system will be unable to meet the final effluent limitations for 4,4'-DDT based on data collected to date (see Attachment 1, Graph 4).

The final average monthly effluent limitation for 4,4'-DDT is 0.00059 ug/L and the final maximum daily effluent limitation is 0.0012 ug/L. Effluent discharged from the facility from December 2008 through March 2010 has had levels of 4,4'-DDT ranging from ND to 0.530 ug/L. MDLs ranged from 0.004 ug/L to 0.040 ug/L.

Prior to February 2010, the District was in compliance with the final effluent limitations for 4,4'-DDT. In February and March 2010, 4,4'-DDT was detected in effluent discharged from the facility at concentrations of 0.530 ug/L and 0.262 ug/L, respectively. The District is currently investigating potential sources of 4,4'-DDT to evaluate whether additional source control efforts will help the District maintain compliance with this limitation.

E. bis(2-Ethylhexyl) phthalate: non-compliant

The existing WWMF system will be unable to meet the final effluent limitations for bis(2-Ethylhexyl) phthalate based on data collected to date (see Attachment 1, Graph 5).

The final average monthly effluent limitation for bis(2-Ethylhexyl) phthalate is 1.8 ug/L and the final maximum daily effluent limitation is 3.6 ug/L. Effluent discharged from the facility from December 2008 through March 2010 has had levels of bis(2-Ethylhexyl) phthalate ranging from non-detect (ND) to 3 ug/L. Method detection limits (MDLs) were either 2 ug/L or 9 ug/L, with the exception of one event which had a MDL of 0.9 ug/L.

The 2005 Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2005 SIP) sets forth the SWRCB minimum reporting levels for use in reporting and compliance determination purposes. The minimum levels for bis(2-Ethylhexyl) phthalate are 10 ug/L by Gas Chromatography (GC) and 5 ug/L by Gas Chromatography/Mass Spectrometry (GCMS).

In Region 2, the RWQCB recently adopted an Order (R2-2010-0054) that requires dischargers to exclude estimated concentrations below minimum levels when calculating equivalency for dioxins (RWQCB, 2010). The Order notes that for purposes of laboratory analysis, reporting and compliance, the minimum level is considered the concentration at which the entire analytical system gives a recognizable signal and acceptable calibration point. Below the minimum level, it was noted that detected concentrations can sometimes be estimated but not with sufficient analytical confidence for regulatory compliance purposes (see Order R2-2010-0054, pages F-4 and F-5, attached).

The existing NDPES permit for the facility has more stringent effluent limitations for bis(2-Ethylhexyl) phthalate (1.8 ug/L and 3.6 ug/L) than the minimum level set forth by the SWRCB (5 ug/L). Furthermore, the facility will not be able to show compliance with the average monthly limitation, as this level falls below the estimated detection limit (2 ug/L) used by the lab. Detections of bis(2-Ethylhexyl) phthalate at concentrations greater than 2 ug/L were flagged by the lab as detected, but below the reporting limit (which varied from 5 to 10 ug/L); therefore, these results were reported as estimated concentrations.

The District would like to pursue having compliance for bis(2-Ethylhexyl) phthalate be evaluated using the minimum reporting level set forth by the SWRCB (5 ug/L) for both the maximum daily and average monthly effluent limitations. Below the minimum level, detected concentrations would only be estimated values without the sufficient analytical confidence for regulatory compliance purposes. If the final effluent limitations were set at the minimum level of 5 ug/L, the District would be in compliance with the effluent limitations for this constituent.

F. 2,3,7,8-TCDD equivalents: non-compliant

The existing WWMF system will be unable to meet the final effluent limitations for 2,3,7,8-TCDD equivalents based on data collected to date (see Attachment 1, Graph 6).

The final average monthly effluent limitation for 2,3,7,8-TCDD equivalents is 0.013 pg/L and the final maximum daily effluent limitation is 0.026 pg/L. Effluent discharged from the facility in 2009 has had levels of 2,3,7,8-TCDD equivalents ranging from 0.0008 to 0.0548 pg/L.

Currently in Region 1, dioxin toxicity equivalents (TEQs) are calculated and reported using toxicity equivalency factors (TEFs) for each dioxin or furan congener. In Region 2, the RWQCB has recently adopted an Order (R2-2010-0054) that requires dischargers to calculate and report dioxin-TEQ using TEFs and Bioaccumulation Equivalency Factors (BEFs).

The Order notes the following: “The (San Francisco Estuary Institute’s expert) panel concluded that, because BEFs for the congeners most commonly detected in wastewater can be as low as 0.01, calculating dioxin-TEQ without BEFs (the current practice) may mischaracterize the significance of dioxin and furan discharges by as much as two orders of magnitude.” The Order supersedes existing requirements to use only TEFs in dioxin-TEQ calculations for purposes of determining compliance with dioxin-TEQ effluent limits and requires dischargers to calculate TEQs using the BEFs (see Order R2-2010-0054, pages F-4 and F-5, attached).

Review of dioxin concentrations in effluent data collected in the spring of 2009 indicates that effluent discharged from the facility has low levels of the congeners 1,2,3,4,6,7,8-HpCDD and OCDD. The resulting 2,3,7,8-TCDD TEQs, calculated using the TEF multipliers, were above the average monthly and maximum daily effluent limitations for dioxins in both January and February 2009, and above the average monthly limit in March 2009. If the TEQs are calculated using the BEFs, in accordance with the methods approved for use in Region 2, the facility would be in compliance with the both the average monthly and maximum daily effluent limitations for dioxin for all sample events conducted to date.

The District would like to pursue having Region 1 review the Region 2 Order that sets forth the BEF calculation requirements for determining dioxin-TEQs and consider adopting a similar finding that would be applicable for wastewater dischargers in Region 1.

Attachment 3 Proposed Compliance Schedule

Task Number		Task Description	Compliance Date	
Old	New		Old	New
3	1	Develop waste discharge permits and Individual Discharge Plans for identified businesses.	6/1/2009	1/1/2011
---	2	Conduct receiving water copper and hardness evaluation (WER analysis) and propose new final copper effluent limitations, as applicable.	---	1/1/2011
---	3	Propose new effluent limitations for bis-phthalate and propose new dioxin TEQ reporting limit approach (from Region 2) for Region 1 Board approval.	---	1/1/2011
4	4	Adopt or modify local ordinances for local waste discharge permits that include monitoring, inspection, and enforcement authority for District personnel.	9/1/2009	3/1/2011
5	5	The District is on schedule to complete a 20-Year Wastewater Facilities Plan by the end of 2011. Following review and approval of the plan by the MCSD Board, the District will submit the Facility Plan for RWQCB review by June 2012. The 20-Year Wastewater Facilities Plan will include a plan to achieve compliance with the final effluent limitations for priority pollutants if the continued source control efforts described in Tasks 1 and 4 (previous Tasks 3 and 4) do not result in compliance with the final effluent limitations.	12/1/2009	6/1/2012
---	6	Provide final schedule for priority pollutant compliance, as necessary, in conjunction with ROWD submittal for the facility.	---	12/15/2012

**Performance of *Ceriodaphnia dubia* Toxicity Testing in
Support of Development of a Copper Water-Effect Ratio
(WER) for Application to the McKinleyville Community
Services District M-001 Effluent**

Samples collected July 2 and August 6, 2010

Prepared for

Winzler and Kelly
633 Third Street
Eureka, CA 95501

Prepared by

Pacific EcoRisk
2250 Cordelia Road
Fairfield, CA 94534

September 2010



**Performance of *Ceriodaphnia dubia* Toxicity Testing in
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**Performance of *Ceriodaphnia dubia* Toxicity Testing in Support of
Development of a Copper Water-Effect Ratio (WER) for Application to the
City of McKinleyville Community Services District M-001 Effluent**

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Appendices

ROUND 1

- Appendix A Chain-of-Custody Record for the Collection and Delivery of the MCSD Effluent Sample Collected on July 2, 2010
- Appendix B Test Data for Cu WER Rangefinding Toxicity Testing Performed on MCSD Effluent and “Lab” Water
- Appendix C Summary Results Tables for *Ceriodaphnia dubia* Acute Copper Toxicity Tests Performed on MCSD Effluent and “Lab” Water
- Appendix D Summary of Statistical Analysis for Determination of Copper EC₅₀ Values for MCSD Effluent and “Lab” Water Based on Nominal Cu Concentrations
- Appendix E Summary of Statistical Analysis for Determination of Copper EC₅₀ Values for MCSD Effluent and “Lab” Water Based on the Mean Measured Total Cu Concentrations
- Appendix F Summary of Statistical Analysis for Determination of Copper EC₅₀ Values for MCSD Effluent and “Lab” Water Based on the Mean Measured Dissolved Cu Concentrations
- Appendix G Test Data and Summary of Statistics for the Reference Toxicant Evaluation of *Ceriodaphnia dubia*
- Appendix H Analytical Chemistry Laboratory Data Reports

ROUND 2

- Appendix I Chain-of-Custody Record for the Collection and Delivery of the MCSD Effluent Sample Collected on August 6, 2010
- Appendix J Test Data for Cu WER Rangefinding Toxicity Testing Performed on MCSD Effluent and “Lab” Water
- Appendix K Summary Results Tables for *Ceriodaphnia dubia* Acute Copper Toxicity Tests Performed on MCSD Effluent and “Lab” Water
- Appendix L Summary of Statistical Analysis for Determination of Copper EC₅₀ Values for MCSD Effluent and “Lab” Water Based on Nominal Cu Concentrations

- Appendix M Summary of Statistical Analysis for Determination of Copper EC₅₀ Values for MCSD Effluent and “Lab” Water Based on the Mean Measured Total Cu Concentrations
- Appendix N Summary of Statistical Analysis for Determination of Copper EC₅₀ Values for MCSD Effluent and “Lab” Water Based on the Mean Measured Dissolved Cu Concentrations
- Appendix O Test Data and Summary of Statistics for the Reference Toxicant Evaluation of *Ceriodaphnia dubia*
- Appendix P Analytical Chemistry Laboratory Data Reports

1. INTRODUCTION

As part of an investigation to determine the appropriate discharger-specific copper Water-Effects Ratios (WERs) for use in the McKinleyville Community Services District (MCSD) copper discharge limitations, Winzler and Kelly has contracted Pacific EcoRisk (PER) to conduct two rounds of WER testing. Specifically, PER was responsible for:

- Preparation of copper toxicity test solutions;
- Collection and shipping of test solution water samples to the contract analytical labs;
- Performance of acute *Ceriodaphnia dubia* toxicity tests to determine the toxicity of copper in the MCSD effluent and in “Lab” water;
- Analysis of the toxicity and analytical chemistry data to determine benchmark toxicity values (e.g., EC₅₀ point estimates); and,
- Calculate hardness-adjusted WERs.

In order to assess the sensitivity of the *C. dubia* test organisms to toxic stress, a reference toxicant test was performed concurrently with each round of testing. This report describes and summarizes the performance and results of aquatic toxicity testing performed in support of determining the applicable discharger-specific WER for use in the MCSD copper discharge limitations.

2. METHODS

All methods conformed to the following guidance for development of a WER:

- Streamlined Water-Effect Ratio Procedure for Discharges of Copper. EPA/822/R-01/005. Office of Water, US Environmental Protection Agency, Washington, DC 20460;
- Interim Guidance on the Determination and Use of Water-Effect Ratios for Metals. EPA/823/B-94/001. Office of Science and Technology, US Environmental Protection Agency, Washington, DC 20460; and,
- Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. EPA/821/R-02/012. Environmental Research Laboratory, US Environmental Protection Agency, Duluth, MN.

2.1 Collection and Handling of the Effluent Samples

On July 2 and August 6, 2010, MCSD staff collected 24-hr composite samples of M-001 effluent (designated “WWTP - Eff”). These samples were placed in insulated coolers and delivered via overnight delivery, on ice and under chain-of-custody, to the PER testing laboratory in Fairfield, CA. Upon receipt at the testing laboratory, aliquots of the samples were collected for analyses of initial water quality characteristics (Table 1a and Table 1b). Additional aliquots were collected for use in setting up the initial toxicity tests, with the remainder of the samples being stored at <6°C. The chain-of-custody records for the collection and delivery of the Round 1 and Round 2 samples are provided in Appendices A and I, respectively.

Table 1a. Round 1: Initial water quality characteristics for the MCSD effluent and “Lab Water” samples collected July 2.							
Test Waters	Temp. (°C)	pH	D.O. (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Conductivity (μS/cm)	Total Ammonia (mg/L N)
MCSD effluent	1.1	7.21	7.8	140	74	524	18.1
“Lab” Water	- ^A	8.18	8.8	51	74	169	<1.0

^A – The Lab water was prepared at room temperature.

Table 1b. Round 2: Initial water quality characteristics for the MCSD effluent and “Lab” water samples collected August 6.							
Test Waters	Temp. (°C)	pH	D.O. (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Conductivity (μS/cm)	Total Ammonia (mg/L N)
MCSD effluent	2.1	7.33	6.3	179	85	537	22.7
“Lab” Water	- ^A	8.18	8.8	79	85	190	<1.0

^A – The Lab water was prepared at room temperature.

2.1.1 “Lab” Water

For use as the “Lab” Water in these tests, PER staff prepared US EPA synthetic water consisting of mixtures of Type 1 lab water (reverse-osmosis, de-ionized water) and a commercial spring water (Perrier®). For each of the two rounds of testing, the proportions of these two water components were varied to reflect the hardness of the corresponding effluent sample (see Tables 1a and 1b): for the July 2 effluent sample, the “Lab” water was prepared at a hardness of 74 mg/L; for the August 6 effluent sample, the “Lab” water was prepared at a hardness of 85 mg/L.

2.2 Rangefinding Toxicity Testing with *Ceriodaphnia dubia*

In order to assure that an appropriate range of copper concentrations would be used in the subsequent definitive tests, a preliminary copper rangefinding test was performed with each MCSD effluent sample. Rangefinding test solutions were prepared by spiking aliquots of the effluent with copper (from a commercial standard) at the concentrations listed in Table 2a and 2b. These test solutions were allowed to sit undisturbed for ≥ 3 hrs prior to use in these tests to allow for metal partitioning to reach equilibrium with the test water constituents. “New” water quality characteristics (pH, dissolved oxygen [D.O.], and conductivity) were measured for each test solution immediately prior to use in these rangefinding tests.

Table 2a. Round 1: Rangefinding test nominal total copper additions to MCSD effluent and “Lab” water.	
Site	Nominal Test Concentrations ($\mu\text{g/L}$ Total Cu)
MCSD effluent	0, 50, 100, 150, 200, 300, 400
“Lab” Water	0, 1.25, 2.5, 5, 10, 20

Table 2b. Round 2: Rangefinding test nominal total copper additions to MCSD effluent and “Lab” water.	
Site	Nominal Test Concentrations ($\mu\text{g/L}$ Total Cu)
MCSD effluent	0, 50, 100, 150, 200, 300, 400, 1000
“Lab” Water	0, 1.25, 2.5, 5, 10, 20

There were 2 replicates for each test treatment, each replicate consisting of 120 mL of test solution in a 150-mL high-density polyethylene (HDPE) beaker. These acute tests were initiated by allocating 5 neonate (<24 hrs old) *C. dubia*, from in-house laboratory cultures, into each replicate cup. The replicate cups were placed in a temperature-controlled room at 20°C, under cool-white fluorescent lighting on a 16L:8D photoperiod.

Routine water quality characteristics (pH and D.O.) of the test waters were measured each day and at the end of the tests. After 48 (\pm 1) hrs, the tests were terminated and the number of live neonates in each replicate cup was determined.

The resulting survival data were analyzed to determine key dose response endpoints; all statistical analyses were performed using the CETIS[®] statistical software (TidePool Scientific, McKinleyville, CA). The results of this testing are presented in Appendices B and J.

2.3 Definitive Toxicity Test Procedures

2.3.1 Preparation of Test Solutions

Nominal definitive test copper concentrations (Table 3a and Table 3b) were selected based on the rangefinding test results so as to bracket the expected potential range of EC₅₀ values for *C. dubia* survival. Test solutions at these concentrations were prepared by spiking aliquots of the MCSD effluent or “Lab” water with copper (as CuNO₃, from a commercial standard [Inorganic Ventures, Lakewood, NJ]). Test solutions were allowed to sit undisturbed for \geq 3 hrs prior to test initiation to allow for copper partitioning to reach an equilibrium with the test water constituents.

Table 3a. Round 1: Definitive test nominal total copper additions to MCSD effluent and “Lab” water.	
Site	Nominal Test Concentrations ($\mu\text{g/L}$ Total Cu)
MCSD effluent	0, 100, 210, 262, 328, 410, 512, 640, 800, 1000
“Lab” Water	0, 2.4, 3.4, 4.8, 6.9, 9.8, 14, 20

Table 3b. Round 2: Definitive test nominal total copper additions to MCSD effluent and “Lab” water.	
Site	Nominal Test Concentrations ($\mu\text{g/L}$ Total Cu)
MCSD effluent	0, 308, 441, 551, 648, 720, 800, 1000
“Lab” Water	0, 2.4, 3.4, 4.8, 6.9, 9.8, 14, 20

2.3.2 Collection of Water Samples for Chemical Analyses

Using “clean” techniques, samples of each test solution were collected for copper analysis immediately prior to test initiation and again at test termination. Samples for total copper analysis were collected into pre-cleaned, nitric acid preserved, 500-mL HDPE bottles (supplied by the analytical lab); samples for dissolved copper analysis were filtered by PER staff using sterile 0.45 μm filter unit receivers (supplied by analytical lab). “Lab” water and effluent samples were also collected at test initiation for analyses of total suspended solids (TSS), total organic carbon (TOC), dissolved organic carbon (DOC), and hardness. These samples were then sealed and placed within insulated coolers and transported to Caltest Analytical Laboratory (Caltest). Final analytical chemistry results for Rounds 1 and 2 were provided by Caltest and are presented in Appendices H and P, respectively.

2.3.3 Acute Toxicity Testing with *Ceriodaphnia dubia*

Test solutions were prepared as described in Section 2.3.1. “New” water quality characteristics (pH, D.O., and conductivity) were measured for each test solution immediately prior to use in these tests.

There were 5 replicates for each test treatment (4 replicates for generation of test survival data and an additional replicate for measurement of water quality), each replicate consisting of 120 mL of test solution in a 150-mL HDPE beaker. The tests were initiated by allocating 5 neonate (<24 hrs old) *C. dubia*, from in-house laboratory cultures, into each replicate cup. The replicate cups were placed in a temperature-controlled room at 20°C, under cool-white fluorescent lighting on a 16L:8D photoperiod.

Each day and at test termination, routine water quality characteristics (pH, D.O., and conductivity) of the test solutions were measured in the water quality replicates. After 48 (± 1)

hrs, the tests were terminated and the number of live neonates in each replicate cup was determined.

2.4 Determination of “Definitive” Toxicity Point Estimates

Based upon the survival responses at the various test treatments, test copper concentrations that exhibited desired survival responses (e.g., Control treatments, highest test concentration that exhibited no significant mortalities, test concentrations that exhibited partial responses, and lowest test concentration that exhibited complete mortality) were selected for copper analysis. For the selected test treatments, Caltest quantified total and dissolved copper concentrations from test solution samples collected at the beginning and at the end of the toxicity tests. Using the mean of the initial and final test treatment copper concentrations, key EC point estimates for measured total and dissolved copper were determined using the CETIS[®] statistical software.

2.5 Calculation of Water Effect Ratio (WER)

The definitive toxicity test copper EC₅₀ for both the “Lab” Water and effluent for each round of testing were ‘hardness normalized’ to a hardness of 100 mg/L CaCO₃ following the procedures outlined by the EPA (EPA 2001). The ‘hardness normalized’ effluent copper EC₅₀ for each round of testing was then compared to the ‘hardness normalized’ “Lab” Water and to the ‘hardness normalized’ species-mean acute copper EC₅₀ value (SMAV, as determined and reported by the EPA), and the larger of the two was used to calculate the WER by dividing the effluent copper EC₅₀ by the “Lab” Water EC₅₀ or the SMAV (the use of the larger of the two results in the more conservative WER).

2.6 Reference Toxicant Testing of the *Ceriodaphnia dubia*

In order to assess the sensitivity of the test organisms to toxic stress, a reference toxicant test was performed on the laboratory culture of *C. dubia* concurrently with each round of testing. The Lab Control/dilution water for this reference test consisted of a mixture of Type 1 lab water and Perrier[®]. The reference toxicant test solutions consisted of Lab Control water spiked with NaCl at test concentrations of 500, 1000, 2000, 3000 and 4000 mg/L NaCl.

There were 4 replicates for each test treatment, each replicate consisting of 15 mL of test solution in a 30-mL plastic cup. This test was initiated by allocating 5 neonate (<24 hrs old) *C. dubia*, from in-house laboratory cultures, into each replicate cup. The replicate cups were placed in a temperature-controlled room at 20°C, under cool-white fluorescent lighting on a 16L:8D photoperiod.

Routine water quality characteristics (pH, D.O., and conductivity) of the test waters were measured each day and at the end of the test. After 48 (± 1) hrs, the test was terminated and the number of live neonates in each replicate cup was determined. The resulting survival data were

analyzed to determine key dose-response point estimates (e.g., EC₅₀); all statistical analyses were performed using the CETIS[®] software. These response endpoints were then compared to the typical response range established by the mean \pm 2 SD of the point estimates generated by the most recent previous reference toxicant tests performed by this lab.

3. RESULTS

The determinations of copper toxicity to *C. dubia* in the MCSD effluent and “Lab” water are presented below in Sections 3.1 and 3.2. A summary of the QA/QC review of the toxicity testing data is presented in Section 4.1.

3.1 Round 1: Copper Toxicity to *Ceriodaphnia dubia* in Effluent and “Lab” Water

Results of the rangefinding test (used to identify appropriate “definitive” copper toxicity test treatment concentrations) are presented in Appendix B. The “definitive” determinations of copper toxicity to *C. dubia* are presented in Appendix C. Results of statistical analysis of copper definitive toxicity tests using “nominal” test concentrations for the MCSD effluent and “Lab” water tests are presented in Appendix D; statistical analyses performed using the mean measured total and mean dissolved copper concentrations are presented in Appendices E and F, respectively.

The effluent and “Lab” water total copper (Table 4a) and dissolved copper (Table 4b) EC₅₀ values (and accompanying 95% confidence levels) were calculated using the linear regression or trimmed Spearman-Kärber statistical methods, based on the mean measured total and dissolved copper concentrations. The resulting EC₅₀ data were then normalized to a hardness of 100 mg/L CaCO₃. The “Lab” water ‘hardness adjusted’ copper EC₅₀ value was then compared to the *C. dubia* SMAV copper EC₅₀ and the larger of the two values was selected for calculation of the WER (Section 5.).

Table 4a. Round 1: Total Cu EC ₅₀ for MCSD effluent and “Lab” water based on mean measured total Cu concentrations.			
Test Waters	Total Cu EC ₅₀ value (95% confidence limits; µg/L)		
	Unadjusted	Hardness Adjusted ^B (100 mg/L CaCO ₃)	Hardness Adjusted SMAV ^A (100 mg/L CaCO ₃)
MCSD Effluent	554 (516-598)	708.7 (660.1-765.0)	n/a
“Lab” Water	3.91 (2.06-4.29)	5.62 (2.96-6.17)	24.0

^A - USEPA 2001

^B – Based on measured dissolved hardness; MCSD effluent = 77 mg/L as CaCO₃, Lab Water = 68.

Table 4b. Round 1: Dissolved Cu EC ₅₀ for MCSD effluent and “Lab” water based on mean measured dissolved Cu concentrations.			
Test Waters	Dissolved Cu EC ₅₀ value (95% confidence limits; µg/L)		
	Unadjusted	Hardness Adjusted ^B (100 mg/L CaCO ₃)	Hardness Adjusted SMAV ^A (100 mg/L CaCO ₃)
MCSD Effluent	180 (166-197)	230.3 (212.4-252.0)	n/a
“Lab” Water	3.30 (2.04-3.68)	4.75 (2.93-5.29)	22.11

^A - USEPA 2001

^B –Based on measured dissolved hardness; MCSD effluent = 77 mg/L as CaCO₃, Lab Water = 68.

3.2 Round 2: Copper Toxicity to *Ceriodaphnia dubia* in Effluent and “Lab” Water.

Results of the rangefinding tests (that were used to identify appropriate “definitive” copper toxicity test treatment concentrations) are presented in Appendix J. The “definitive” determinations of copper toxicity to *C. dubia* are presented in Appendix K. Results of statistical analysis of copper definitive toxicity tests using “nominal” test concentrations for the MCSD effluent and “Lab” water tests are presented in Appendix L; statistical analyses performed using the mean measured total and mean dissolved copper concentrations are presented in Appendices M and N, respectively.

The effluent and “Lab” water total copper (Table 5a) and dissolved copper (Table 5b) EC₅₀ values (and accompanying 95% confidence levels) were calculated using the linear regression or trimmed Spearman-Kärber statistical methods, based on the mean measured total and dissolved copper concentrations. These resulting EC₅₀ data were then normalized to a hardness of 100 mg/L CaCO₃. The “Lab” water ‘hardness adjusted’ copper EC₅₀ value was then compared to the *C. dubia* SMAV copper EC₅₀ and the larger of the two values was selected for calculation of the WER (Section 5.).

Table 5a. Round 2: Total Cu EC ₅₀ for MCSD effluent and “Lab” water based on mean measured total Cu concentrations.			
Test Waters	Total Cu EC ₅₀ value (95% confidence limits; µg/L)		
	Unadjusted	Hardness Adjusted ^B (100 mg/L CaCO ₃)	Hardness Adjusted SMAV ^A (100 mg/L CaCO ₃)
MCSD Effluent	593 (566-617)	758.6 (724.0-789.3)	n/a
“Lab” Water	4.15 (3.83-4.50)	5.37 (4.96-5.83)	24.0

^A - USEPA 2001

^B -Based on measured dissolved hardness; MCSD effluent = 77 mg/L as CaCO₃, Lab Water = 68.

Table 5b. Round 2: Dissolved Cu EC ₅₀ for MCSD effluent and “Lab” water based on mean measured dissolved Cu concentrations.			
Test Waters	Dissolved Cu EC ₅₀ value (95% confidence limits; µg/L)		
	Unadjusted	Hardness Adjusted ^B (100 mg/L CaCO ₃)	Hardness Adjusted SMAV ^A (100 mg/L CaCO ₃)
MCSD Effluent	185 (175-195)	236.7 (223.9-249.5)	n/a
“Lab” Water	3.44 (3.14-3.76)	4.46 (4.07-4.87)	22.11

^A - USEPA 2001

^B -Based on measured dissolved hardness; MCSD effluent = 77 mg/L as CaCO₃, Lab Water = 68.

4. QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

The toxicity testing of the copper-spiked MCSD effluent and Lab Water incorporated standard QA/QC procedures to ensure that the test results were valid, including the use of negative controls, positive controls, test replicates, and measurement of water quality during testing. These QA/QC procedures are consistent with methods described in the US EPA guidelines (EPA-821-R-02-012 [Section 4.]).

The Lab Water TSS, TOC, and DOC were ≤ 5 mg/L for both rounds of testing, meeting the requirement for use of a “Lab” water in WER determinations. The minimum, maximum and mean temperature and dissolved oxygen concentrations for each test are presented below in Table 6.

Table 6. Summary of temperature and dissolved oxygen measurements for the <i>Ceriodaphnia dubia</i> tests.							
Round	Test Media	Temperature (°C)			Dissolved Oxygen (mg/L)		
		Min.	Max.	Mean	Min.	Max.	Mean
1	Effluent	20.1	20.8	20.5	5.7	9.0	7.3
	Lab Water	20.5	20.8	20.7	8	9.5	8.7
2	Effluent	20.5	20.7	20.6	5.8	8.6	7.2
	Lab Water	20.5	20.5	20.5	8.4	9.6	9.0

None of the measured test solution copper concentrations decreased by >50% between test initiation and test termination.

The effluent samples were shipped on ice, stored at $<6^{\circ}\text{C}$, and was used within the 96-hr holding time period.

All measurements of routine water quality characteristics were performed as described in the PER Standard Operating Procedures (SOPs). All biological testing water quality conditions were within the appropriate limits.

Negative Control (Laboratory Water) - The biological response in the negative Control treatments were within test acceptability limits of $\geq 90\%$ survival.

Positive Control - The accuracy of the responses of the test organisms to toxic stress was evaluated using positive controls (reference toxicant testing). The key test dose-response EC point estimates determined for *C. dubia* were within the reference toxicant test “typical response” ranges established by the reference toxicant test database, indicating that these test organisms were responding to toxic stress in a typical fashion. A summary of reference toxicant database values for *C. dubia* acute toxicity is presented in Table 7. Test data and summary

statistics for the NaCl reference toxicant tests for rounds 1 and 2 are presented in Appendices G and O, respectively.

Table 7. Summary of reference toxicant database for <i>Ceriodaphnia dubia</i> .		
Round	EC50 Value	Reference Toxicant Database “Typical Response” Range
1	1910 mg/L NaCl	1350-2180 mg/L NaCl
2	2330 mg/L NaCl	2090-2580 mg/L NaCl

Concentration Response Relationships – The concentration-response relationships for these tests were evaluated as per EPA guidelines (EPA-821-B-00-004), and were determined to be acceptable for this testing.

Analytical Chemistry – A detailed review of the analytical chemistry laboratory QC data indicated that there were no significant exceedances of control parameters and the results are usable in the determination of a WER. There were MS/MSD recovery exceedances associated with the total hardness analysis, presumably due to the presence of high concentrations of algae in the effluent sample. Consequently, dissolved hardness values were used in the calculation of the WER.

5. CALCULATION OF WATER-EFFECT RATIO

The Round 1 and Round 2 ‘hardness adjusted’ WER values are presented below in Tables 8a and 8b, respectively. As the SMAV copper EC50 (EPA 2001) was greater than the concurrently tested “Lab” water EC50 values, the copper EC50 SMAV was used to calculate the total and dissolved WER for each round of testing; this approach provides a more conservative measure of the WER. The final WER was calculated as the geometric mean of the sample WERs. The final total WER was 30.5 $\mu\text{g/L}$ copper and the final dissolved WER was 10.5 $\mu\text{g/L}$ copper.

Table 8a. Hardness normalized (to 100 mg/L as CaCO_3) total Cu EC50 determinations for MCSD effluent and the SMAV.			
WER Testing Event	Mean Total Cu EC50 value (95% confidence limits; $\mu\text{g/L}$)		
	Effluent	Species-Mean Acute Value ^A	WER
Round 1	708.7 (660.1-765.0)	24.0	29.5
Round 2	758.6 (724.0-789.3)	24.0	31.6
Geometric Mean =			30.5

^A - USEPA 2001.

Table 8b. Hardness normalized (to 100 mg/L as CaCO_3) dissolved Cu EC50 determinations for MCSD effluent and the SMAV.			
WER Testing Event	Mean Dissolved Cu EC50 value (95% confidence limits; $\mu\text{g/L}$)		
	Effluent	Species-Mean Acute Value ^A	WER
Round 1	230.3 (212.4-252.0)	22.1	10.4
Round 2	236.7 (223.9-249.5)	22.1	10.7
Geometric Mean =			10.5

^A - USEPA 2001.

6. REFERENCES

US EPA (2002) Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. EPA/821/R-02/012. US EPA, Environmental Research Laboratory, Duluth, MN.

US EPA (1994) Interim Guidance on the Determination and Use of Water-Effect Ratios for Metals. EPA/823/B-94/001. Office of Science and Technology, US Environmental Protection Agency, Washington, DC 20460.

US EPA (2001) Streamlined Water-Effect Ratio Procedure for Discharges of Copper. EPA/822/R-01/005. Office of Water. US Environmental Protection Agency, Washington, DC 20460.



Reference: 008189.110

August 31, 2010

**Ms. Lisa Bernard
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403**

**Subject: Updated Request for Revisions to the Monitoring and Reporting Program
for the McKinleyville Community Services District Wastewater
Management Facility, McKinleyville, CA; WDR Order No. R1-2008-0039;
NPDES Permit No. CA0024490; WDID No. 1B82084OHUM**

Dear Ms. Bernard:

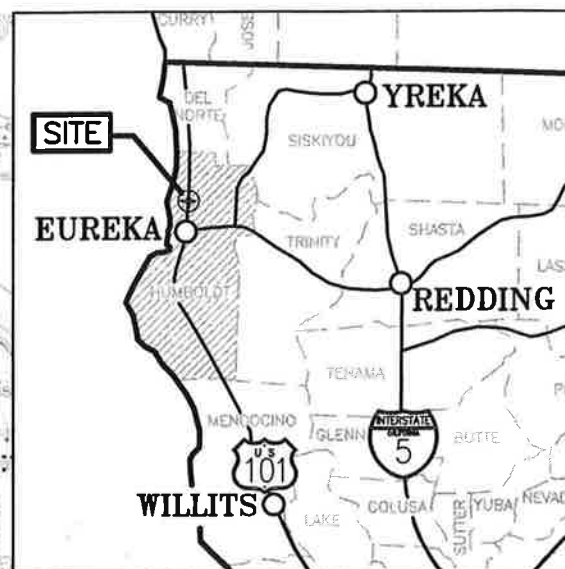
SHN Consulting Engineers & Geologists, Inc. (SHN), on behalf of the McKinleyville Community Services District (MCSD), is submitting this updated request for revisions to the Monitoring and Reporting Program (MRP) associated with National Pollutant Discharge Elimination System (NPDES) Permit No. CA0024490 for the MCSD Wastewater Management Facility (WWMF) located in McKinleyville, California (Figure 1). This request includes proposed modifications to the receiving water monitoring locations defined for the WWMF, as well as a request for a reduction in sample frequency for select constituents at the main effluent monitoring location (M-001).

Receiving Water and Effluent Monitoring Station Locations

The MRP identifies five separate receiving water monitoring locations for effluent discharged from the WWMF, R-001 through R-005 (Figure 2). Receiving water monitoring locations R-001 and R-002 are located in the Mad River at the Highway 101 bridge and Hammond Trail bridge, respectively. Receiving water monitoring location R-003 is located at the outlet of the Fischer Ranch backswamp wetland, upstream of the manually operated slide gate. Receiving water monitoring locations R-004 and R-005 are located at the Hiller Park stormwater treatment wetlands: R-004 is at the discharge of the culvert under Highway 101 and R-005 is as close as possible above the final discharge structure in the wetlands. As discussed in previous meetings with Regional Board staff, MCSD is requesting that the receiving water designations and the associated monitoring requirements for receiving water locations R-003, R-004, and R-005 be removed from the MRP.

The MRP also identifies eight separate effluent monitoring station locations (M-001 through M-008) that are used to evaluate the water quality associated with WWMF effluent prior to discharge to land, groundwater, and surface water (Figure 2). Effluent monitoring location M-001 is located at the WWMF chlorine contact chamber following dechlorination. M-002 is at the outfall to the Mad River at the Hammond Trail bridge. Monitoring station location M-003 is located at the outfall to the Mad River percolation ponds. M-004 and M-007 are at the recycled wastewater irrigation areas of Lower Fisher Ranch and Pialorsi Ranch, respectively. The discharge to land on Upper Fisher Ranch is monitored at M-005. Monitoring station locations M-006 and M-008 are located at the

PACIFIC OCEAN



MCS D WWMF LOCATION



MCS D RECLAMATION

**SOURCE: ARCATA NORTH & TYEE CITY
USGS 7.5 MINUTE QUADRANGLE**





Hiller Park stormwater treatment wetlands: M-006 monitors the recycled wastewater flooding of Hiller Park stormwater treatment wetland and M-008 monitors overflow from the Hiller Park stormwater treatment wetland. As discussed in previous meetings with Regional Board staff, MCSD is requesting that the effluent monitoring station location M-008 and its associated monitoring requirements be removed from the MRP.

Monitoring Location R-003

As noted above, R-003 is located on the Lower Fischer Ranch, in a backswamp wetland area that is connected to the Mad River with outlet control by a manually operated slide gate. This area receives stormwater runoff from an adjacent drainage ditch, and runoff from the surrounding fields. The current NPDES permit for the facility requires MCSD to implement best management practices to prevent the creation of runoff that leads to the discharge of recycled water to the backswamp wetland. The discharge of disinfected secondary treated recycled water is also prohibited within 200 feet of the change in grade between the Upper and Lower Fischer Ranch irrigation areas, which corresponds to the adjacent drainage ditch location. Under the current MRP, MCSD is required to monitor the backswamp wetland monthly unless it is "dry."

MCSD discharges treated wastewater to the Fischer Ranch upper and lower irrigation areas during the summer discharge prohibition period (May 14 - September 30) and during periods when the Mad River flow is less than 200 cubic feet per second (cfs). Over the last five years (2004 -2009), MCSD has not discharged to the Lower Fischer Ranch irrigation areas during the wet weather months of January through April, and there were minimal irrigation discharges during the month of December. During the wet weather period, the manual slide gate is opened in the backswamp wetland area, to allow stormwater to discharge from the adjacent drainage ditch to the Mad River, and the backswamp wetland typically is "wet." During the months of May through November, and occasionally into early December, the backswamp wetland typically stays "dry."

The land management practices on the Lower Fischer Ranch changed in 2009 when the dairy operations were moved off the ranch. It was evident that the assimilative capacity of the pasture for the wastewater nutrients was diminished by the cattle nutrient loading. To maximize the nutrient uptake of the pasture, the land management was changed to farm hay with the fertilizer supplied from the wastewater.

Under the MRP, the backswamp wetland is defined as "receiving water"; however, the irrigation practices at the Fischer Ranch allow for discharges near this area only during periods when the backswamp wetland is "dry." Based on the timing of the irrigation on the Fischer Ranch, the backswamp wetland should not be defined as "receiving water" for discharges of wastewater effluent, as there is no surface water in the backswamp wetland area during the period of discharge to this area.

MCSD is requesting the backswamp wetland receiving water designation and associated monitoring requirements at R-003 be removed from the MRP, provided the following:

- MCSD will perform visual monitoring to ensure that there is no standing water within the area of application to be included in the monthly monitoring reports.

- New land management practices on the lower pastures reduce the nutrient loading to the landscape from those at the time of the permit.
- Wastewater irrigation is prohibited within 200 feet of the change-in-grade between the Upper and Lower Fischer Ranch irrigations areas, which corresponds to the adjacent drainage ditch location.

Monitoring Locations R-004, R-005, and M-008

Receiving water monitoring locations R-004 and R-005 are located at the Hiller Park stormwater treatment wetlands. Wastewater effluent is discharged to the stormwater treatment wetlands during the summer months only for dry-weather maintenance of the wetland plants. The stormwater treatment wetlands are located in an upland area and are designed and maintained to function as treatment wetlands. The stormwater treatment wetlands are not jurisdictional wetlands. Similar to R-003, under the current MRP, MCSD is required to monitor the stormwater treatment wetlands monthly unless “dry.” Based on the timing of the discharge to the stormwater treatment wetlands, and the classification of the wetlands as treatment wetlands rather than jurisdictional wetlands, the treatment wetlands should not be defined as “receiving waters” for discharges of wastewater effluent.

Currently, effluent monitoring location M-008, located at the outlet of the stormwater treatment wetlands, is used to monitor overflow from the Hiller Park stormwater treatment wetlands for wastewater indicator constituents. Samples are collected annually at this location during the first overflow event following the dry season. The permit requirements prohibit wastewater used to irrigate the stormwater treatment wetlands to pond or run off. Based on these requirements, first flush sampling at this location for effluent monitoring location M-008 is not necessary.

MCSD is requesting that the stormwater treatment wetlands receiving water designation and associated monitoring requirements at R-004 and R-005 and the effluent monitoring location M-008 be removed from the MRP, provided the following:

- MCSD will perform visual monitoring during the period of application to ensure that there is no standing water within the area of application or unauthorized runoff from the stormwater wetlands. Observations will be documented in the monthly monitoring reports.

Sample Frequency Reduction

The MRP currently specifies daily, weekly, monthly, quarterly, and annual minimum sampling frequencies for various constituents. MCSD is requesting that the monthly monitoring requirements for bis (2-Ethylhexyl) phthalate, 4,4'-DDT, a-hexachloro-cyclohexane, and dioxins be changed to quarterly monitoring, consistent with the monitoring and reporting requirements set forth for other similar dischargers in the region.

MCSD would also like the following minimum level table added to the MRP to clarify the Minimum Levels (ML) that will be issued for compliance determination for the designated constituents.

CTR#	Constituent Types of Analytical Methods Minimum Levels (ug/L)	Types of Analytical Methods Minimum Levels (ug/L)			
		Gas Chromatography (GC)	Gas Chromatography / Mass Spectroscopy (GCMS)	Inductively Coupled Plasma/Mass Spectroscopy (ICPMS)	Stabilized Platform Graphite Surface Atomic Absorption
68	bis (2-Ethylhexyl) phthalate	10	5	---	---
108	4,4'-DDT	0.01	---	---	---
103	a-hexachloro-cyclohexane	0.01	---	---	---
---	TCDD-Equivalents	The Discharger shall use USEPA Method 1613 and achieve MLs equal to 1/2 the MLs specified in Table 2 of USEPA Method 1613			

MCSD has also expressed interest in participating in a regional surface water monitoring program for dioxins in lieu of completing the quarterly monitoring for dioxins at the effluent location, and is requesting additional information regarding this program as it becomes available.

If you have any questions regarding this updated MRP revision request, please contact me at 707-441-8855.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.



Lisa K. Stromme, P.E.
Water Resources Engineer/
Planning & Permitting Dept Head

LKS/JRP:lms

c.: Norman Shopay, MCSD
Greg Orsini, MCSD

**LOCAL LIMITS
DEVELOPMENT WORKPLAN
for
MCKINLEYVILLE COMMUNITY SERVICES DISTRICT**

**Wastewater Management Facility
675 Hiller Road
McKinleyville, California
NPDES No. CA0024490**

HUMBOLDT COUNTY, CALIFORNIA

Prepared for:
**McKinleyville Community Services District
675 Hiller Road
McKinleyville, California 95519**

August 10, 2010

Prepared by:
Orrin Plocher and Stan Thiesen

of



Freshwater Environmental Services

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FIGURE 2	Proposed Sampling Locations in the Collection System

1.0 INTRODUCTION

Federal water quality regulations require local governments to prevent the introduction of certain pollutants into their Publicly Owned Treatment Works (POTW), in order to prevent interference with wastewater treatment processes and pass through of pollutants, and provide for the use and disposal of municipal biosolids (sludge). This is accomplished through development and implementation of specific effluent limits (local limits) for industrial users. These limits are developed to reflect the specific needs and capabilities at individual POTWs and protect the waterbody to which the POTW discharges.

Freshwater Environmental Services (FES) has developed this Local Limits Development Workplan to outline the steps required for local limits development/update for the McKinleyville Community Services District (MCSD) for approval by the California Regional Water Quality Control Board North Coast Region. The workplan was developed following the EPA's 2004 *Local Limits Development Guidance* (EPA, 2004). This Workplan contains the following elements:

- The Wastewater Management Facility (WWMF) is described in Section 2.0;
- The existing local limits and proposed development approach is presented in Section 3.0;
- The pollutants of concern are presented in Section 4.0;
- The proposed monitoring plan is described in Section 5.0; and
- The references cited in this report are listed in Section 6.0.

2.0 WASTEWATER MANAGEMENT FACILITY DESCRIPTION

2.1 Facility, Location and Ownership

The MCSD owns and operates a wastewater management facility (WWMF) located at 675 Hiller Road in McKinleyville, Humboldt County, California (Figure 1 and Figure 2). Discharges from the WWMF are regulated by a National Pollution Discharge Elimination System (NPDES) permit number CA0024490.

2.2 Facility Description

Information within the NPDES permit indicates that the MCSD owns and operates a secondary treatment facility. The WWMF consists of four aerated ponds followed by a two-stage polishing wetland marsh. During the discharge season, which extends from October 1 through May 14, wastewater is discharged from Discharge Point 001 to the Mad River, a water of the United States within the Blue Lake hydrologic area 109.10 and to percolation ponds adjacent to the Mad River Estuary when the flow in the Mad River is less than 200 cubic feet per second (cfs). During summer, a portion of the WWMF effluent is polished in the Hiller storm water treatment marsh where it provides moisture to sustain wetland vegetation through the dry season. Runoff producing rainfall events cause the Hiller storm water treatment marsh to overflow into an unnamed tributary to the Mad River estuary. Prior to the onset of the wet season and storm water overflows from the marsh, the wastewater application to the treatment marsh is ceased and the treatment marsh is allowed to dry through evaporation and evapotranspiration. Figure 1 provides a topographic map of the region around the facility. Figure 2 is a site plan with arrows indicating the flow of wastewater through the facility. The calculated hydraulic residence time from headworks to effluent is approximately 35 days.

3.0 EXISTING LOCAL LIMITS AND DEVELOPMENT APPROACH

The MCSDs existing local limits are shown in Table 1. The MCSD is in the process of evaluating the existing local limits to determine if they are still protective of the POTW or need to be modified. The MCSD proposes to use the Maximum Allowable Headworks Loading (MAHL) calculation methodology described in EPA's 2004 *Local Limits Development Guidance* to evaluate the existing limits, and to also establish its revised local limits. The MAHL methodology includes four basic steps:

- Determine the Pollutants of Concern (POC);
- Collect and analyze data;
- Calculate MAHLs for each POC; and
- Designate and implement the local limits.

After completing the MAHL methodology, local limits may be adjusted to address collection system concerns and practical considerations. This Workplan describes the proposed process.

4.0 POLLUTANTS OF CONCERN

A Pollutant of Concern (POC) is any pollutant that may be discharged to the POTW in sufficient amounts to pass through treatment processes, interfere with treatment processes, jeopardize worker health and safety, or cause operational problems. A POC may also include pollutants in the applicable NPDES permit or biosolids quality regulations. In order to determine the POCs to be evaluated, the MCSD considered the following:

- MCSD NPDES permit requirements;
- Biosolids quality regulations;
- Treatment process inhibition (nitrification and anaerobic);
- Water Quality Criteria
- Known Industrial Users;
- Sampling and violation history at the WWMF;
- Current local limits, and
- EPA guidance documents.

A summary of compounds detected in effluent samples since 2008 are presented in Table 2. Based on the frequency of detection, concentrations of analytes, comparison to conservative inhibition concentrations, and water quality objectives, some of analytes in Table 3 are not being considered as potential POCs as indicated. The MCSDs potential POCs, along with applicable listing criteria, are included in Table 4.

5.0 PROPOSED MONITORING PLAN

In accordance with Local Limits Guidance, sampling will be conducted for five consecutive days and analyzed for the POCs. All sampling will be conducted under normal operating conditions during dry weather. Sampling will follow the flow of the treatment process based on the hydraulic residence time (i.e., effluent sampling will be taken after influent sampling and lagged by the hydraulic residence time of 35 days). Specific sampling requirements proposed for local limits development were determined following an extensive review of existing data. The MCSD will also gather data regarding total POTW flow, domestic wastewater flow, and industrial wastewater flow. The MCSD will use this data to calculate the load of each POC coming into the POTW. Wastewater samples will be either 24-hour flow proportional composite samples, time composited samples or grab samples. A composite grab sample consisting of 4-12 subsamples will be used for the following analytes;

- pH
- Cyanide
- Total phenols
- Volatile Organic Compounds

Proposed local limits sampling locations are shown in Figure 3 and are discussed below:

Treatment Plant Sampling:

Headworks Influent – The Plant influent will be sampled to determine the presence of pollutants of concern and to provide data to conduct treatment process removal efficiency analyses. Removal efficiencies will be used to convert biological process inhibition data into corresponding allowable headworks loadings.

Final Effluent – The Plant final effluent will be sampled to provide data to conduct treatment plant removal efficiency analyses and to calculate headworks loading limits.

Collection System Sampling:

Domestic collection system – One representative domestic collection system trunk line will be sampled to determine “uncontrollable” pollutant sources (residential). This information is necessary to accurately allocate the maximum allowable headworks loading for pollutants.

Commercial collection system – One representative collection system trunk line serving primarily commercial uses will be sampled to determine “controllable” pollutant sources (commercial). This information is necessary to accurately allocate the maximum allowable headworks loading for pollutants.

5.1 Treatment Plant Sampling

Influent and effluent samples will be collected over five day periods separated by 35 days (calculated hydraulic residence time) and analyzed for the POC. Influent sampling will be collected at a location prior to mixing with other wastewater streams. Analytical results from the samples will be used to aid in planning for future disposal and in the local limits calculations.

5.2 Collection System Sampling

Samples from two locations within the collection system will be collected over a five day period and analyzed for the POC. The sampling within the collection system will be performed during the same five day period as the influent samples from the treatment plant.

5.3 Sample Handling

Wastewater samples will be collected in laboratory provided containers labeled and immediately placed in an ice-cooled chest for delivery to an analytical laboratory certified by the California Department of Health Services for the required analyses. All sample handling will include chain-of-custody documentation.

5.4 Analytical Methods

All wastewater samples will be analyzed utilizing the methods indicated in Table 5.

5.5 Quality Assurance/Quality Control

Following receipt of the laboratory analytical report all laboratory QC batches will be checked to ensure that the correct number of samples were analyzed, the holding times were not exceeded, surrogates recoveries were within stated control limits, and that Laboratory Method Blank, Matrix Spikes (MS), Matrix Spike Duplicates (MSD), Laboratory Control Samples (LCS) and Laboratory Control Sample Duplicates (LCSD) were all tested and within the acceptable limits.

6.0 REFERENCES

United States Environmental Protection Agency, 2004, *Local Limits Development Guide*: July.

TABLES

TABLE 1
EXISTING LOCAL LIMITS

DRAFT

Pollutant	Local Limit in (mg/L) ppm	Local Limit (µg/L) ppb
Arsenic	0.1	100
Cadmium	0.2	200
Copper	2.0	2,000
Cyanide	1.0	1,000
Lead	1.0	1,000
Mercury	0.01	10
Nickel	1.0	1,000
Silver	1.0	1,000
Total Chromium	0.5	500
Zinc	3.0	3,000
Oil and Grease (animal or vegetable)	300	300,000
Oil and Grease (mineral or petroleum)	100	100,000
Total Identifiable Chlorinated Hydrocarbons (which cannot be removed by treatment)	0.02	20
Phenolic compounds	1.0	1,000

TABLE 2
SUMMARY OF POLLUTANTS DETECTED IN EFFLUENT SAMPLES SINCE 2008

DRAFT

Analyte	RESULTS µg/L			Number of Detections	Comments Regarding Sources
	Maximum	Minimum	Average		
3 & 4-Methylphenol	0.6	0.6	0.6	1	Component of creosol.
4,4-DDT	0.53	0.262	0.40	2	Banned pesticide in USA.
Acetone	11.1	2.8	6.95	2	Aerosol paints, architectural coatings, automotive and machinery paints and primers, furniture polish and cleaners, household hard surface cleaners, laundry pre-soaks, pet flea and tick removers, cockroach treatments, laundry starches, lubricating greases and oils, nail enamel and polish and polish remover, particleboard, paints (including interior clear finishes, undercoats and primers), varnish, paint and varnish removers and thinners, liniments for veterinary preparations, pharmaceutical preparations, pre-moistened towelettes, shoe polish, sun tan lotions and oils, and in wood office furniture.
Antimony	0.3	0.1	0.2	2	Fire retardant compound, ceramic & glass additives, paint pigments, rubber vulcanization agents.
Arsenic	0.6	0.5	0.55	2	Agricultural pesticides.
Bis(2-ethylhexyl)phthalate (DEHP)	3	2	2.86	7	Chemical that is added to hard plastics to make them soft.
Bromodichloromethane	0.4	0.1	0.18	6	Disinfection byproduct in the trihalomethane (THM) family.
Butyl benzyl phthalate	1	0.2	0.60	2	Plasticizer for PVC.
Cadmium	0.24	0.05	0.15	2	Pigments, coatings and plating, and as stabilizers for plastics
Carbon tetrachloride	0.3	0.3	0.3	2	Solvent, cleaner persisted as a pesticide to kill insects in stored grain, but in 1970, it was banned in consumer products
Chloroform	3.4	0.8	1.66	8	Disinfection byproduct in the trihalomethane (THM) family.
Chromium	1.5	1.4	1.45	2	Plating.
Copper	24.1	16.1	19.85	4	Plumbing and auto shop brake work
Di-n-butyl phthalate	9	1	4	3	Chemical that is added to hard plastics to make them soft. The plastics that di-n-butyl phthalate is used most in are called polyvinyl chloride.
Lead	0.4	0.2	0.3	4	Electronics, batteries.
Mercury	10.9	5.9	8.4	2	Household bleach, acid and caustic chemicals (e.g., battery acid, household lye, muriatic acid (hydrochloric acid), sodium hydroxide and sulfuric acid), instrumentation containing Mercury (e.g., medical instruments, thermometers, barometers and manometers), dental amalgam (fillings), latex paint (manufactured prior to 1990), batteries, electric lighting (fluorescent lamps, incandescent wire filaments, mercury vapor lamps, ultraviolet lamps), pesticides (restricted and/or banned under FIFRA since 1995), pharmaceuticals (e.g., nasal sprays, cosmetics, contact lens products), household detergents and cleaners, laboratory chemicals, inks and paper coatings, lubrication oils, wiring devices and switches, and imported textiles (Mercury is used as a preservative and is released through laundering).
Methyl tert-Butyl Ether (MTBE)	0.3	0.3	0.3	1	Gasoline additive.
Nickel	2.6	2.4	2.5	2	Electroplating.
Selenium	0.8	0.4	0.6	2	Naturally occurring
Toluene	10.2	0.9	3.67	6	Gasoline component, paint solvent.
Zinc	21.2	13.8	17.5	2	Plating and plumbing

TABLE 3
SELECTED POLLUTANTS DETECTED SINCE 2008
WITH WATER QUALITY OBJECTIVES

DRAFT

Potential Pollutant of Concern	Comments	Treatment process inhibition (Nitrification)	Treatment process inhibition (Anaerobic)	Biosolids quality regulations	NPDES permit effluent water quality limit	Potential industrial user discharge	WQO Comments	Recommended POC for Evaluation
Volatile Organic Compounds (VOCs)								
Acetone	2.8-11.1 ppb, 2 detections since 2008	No	No	No	No	Yes	6,300 ppb, USEPA Integrated Reference Dose as a drinking water	No
Bromodichloromethane	0.1-0.4 ppb, 6 detections since 2008	No	No	No	No	No	0.27 ppb Cal/EPA Cancer Potency Factor as a drinking water level.	Yes
Carbon tetrachloride	0.3-0.3 ppb, 2 detections since 2008, most conservative inhibition concentration 2,000 ppb	No	Yes	No	No	Yes	0.10 ppb California Public Health Goal (PHG), (Cal/EPA, OEHHA)	Yes
Chloroform	0.8-3.4 ppb, 8 detections since 2008, most conservative inhibition concentration 1,000 ppb	Yes	Yes	No	No	Yes	0.26 ppb National Academy of Sciences Health Advisory	Yes
Methyl tert-Butyl Ether (MTBE)	0.3 ppb, 1 detection since 2008	No	No	No	No	Yes	5 ppb Secondary MCL	Yes
Toluene	0.9-10.2 ppb, 6 detections since 2008	No	No	No	No	Yes	40 ppb Secondary MCL	Yes
Semi volatile Organic Compounds (SVOCs)								
3 & 4-Methylphenol	0.6 ppb, 1 detection since 2008, most conservative inhibition concentration is 4,000 ppb total phenols	Yes (phenols)	No	No	No	No	1 ppb California Ocean Plan Marine Aquatic Life Protection 6-month median.	No
Butyl benzyl phthalate	0.2-1.0 ppb, 2 detections since 2008	No	No	No	No	No	3 ppb Freshwater Chronic toxicity	No
Di-n-butyl phthalate	1-9 ppb, 3 detections since 2009	No	No	No	No	No	3 ppb Freshwater Chronic toxicity	Yes
Metals								
Antimony	0.1-0.3 ppb, 2 detections since 2008	No	No	No	No	Yes	2.8 ppb, USEPA Integrated Reference Dose as a drinking water	No

TABLE 4
POLLUTANTS OF CONCERN AND DRIVING FACTORS FOR INCLUSION

DRAFT

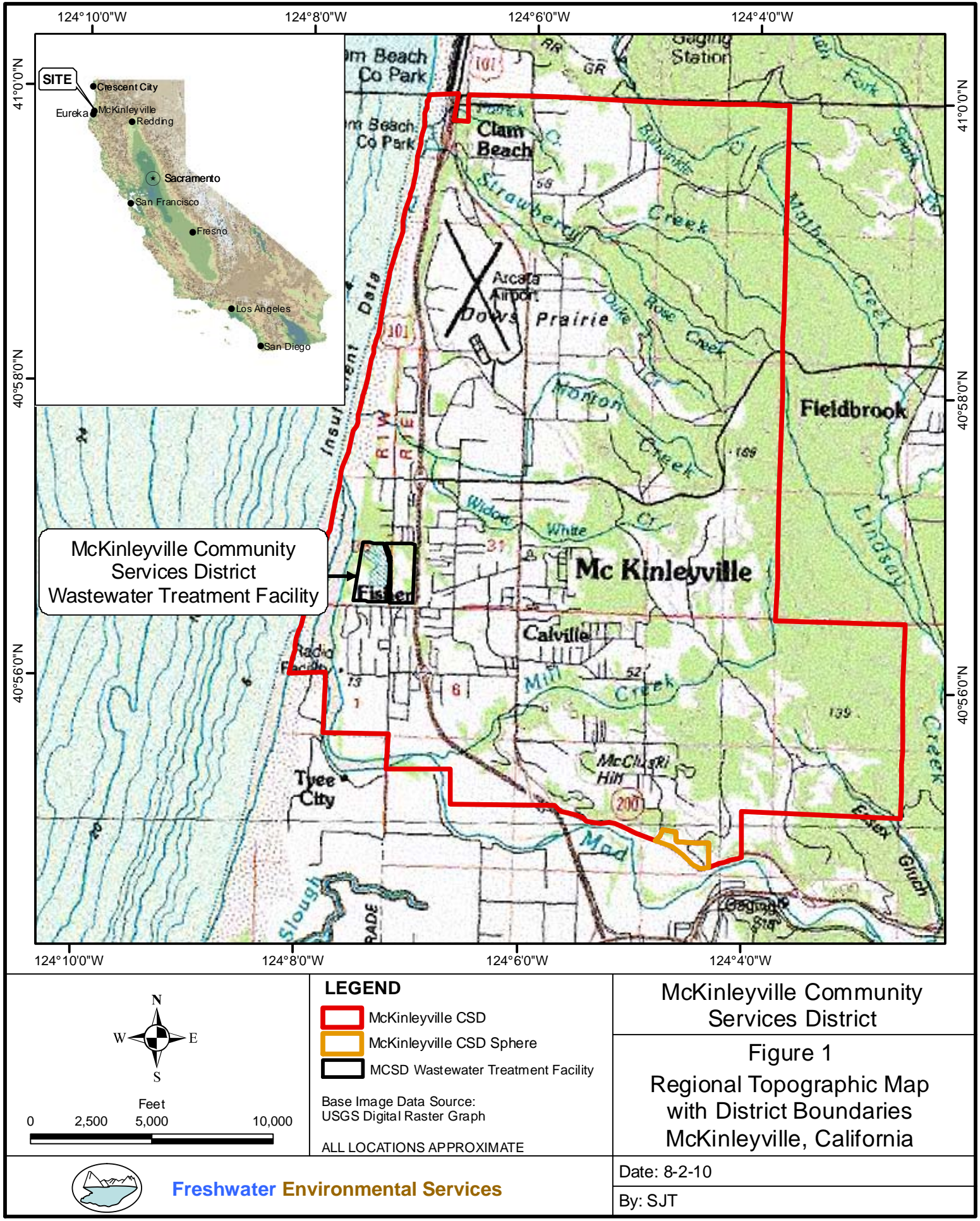
Potential Pollutant of Concern	Treatment process inhibition (Nitrification)	Treatment process inhibition (Anaerobic)	Biosolids quality regulations	NPDES permit effluent water quality limit	Water Quality Objectives	Potential industrial user discharge
Conventional						
Biochemical Oxygen Demand (BOD)				X	X	X
Chlorine Residual				X	X	
Nitrate as Nitrogen				X	X	X
Oil and Grease				X	X	X
pH				X	X	X
Settleable Matter				X	X	X
Total Suspended Solid (TSS)				X	X	X
Priority Pollutants Metals & Cyanide						
Arsenic	X	X	X		X	X
Cadmium	X	X	X		X	X
Total Chromium	X	X			X	X
Copper	X	X	X	X	X	X
Cyanide	X	X			X	
Lead	X	X	X	X	X	X
Molybdenum			X		X	X
Mercury			X		X	X
Nickel	X	X	X		X	X
Selenium			X		X	X
Silver		X			X	X
Zinc	X	X	X		X	X
Organics						
bis(2-ethylhexyl phthalate)				X	X	X
Phenolic Compounds	X				X	X
Bromodichloromethane					X	X
Carbon Tetrachloride		X			X	X
Chloroform	X	X			X	X
Methyl tert-Butyl Ether (MTBE)					X	X
Toluene					X	X
Semi-Volatile Organic Compounds						
Di-n-butyl phthalate					X	
Pesticides and Dioxin						
α-BHC				X	X	X
4,4-DDT				X	X	
2,3,7,8-TCDD equivalents				X	X	X

TABLE 5
PROPOSED ANALYTICAL METHODS FOR POLLUTANTS OF CONCERN

DRAFT

Potential Pollutant of Concern	Analytical Method	Container	Preservative	Holding Time to Extraction	Sample Type
Conventional					
Biochemical Oxygen Demand (BOD)	SM 5210	1L Poly	4 degrees	48 hours	24-hour flow proportional composite
Chlorine Residual	SM 4500	250ml Poly	None	24 hours	24-hour flow proportional composite
Nitrate as Nitrogen	EPA 353.2	250ml Poly	4 degrees	48 hours	24-hour flow proportional composite
Oil and Grease	EPA 1664A	1L Amber Glass x 2	H2SO4	28 days	4-12 Grab samples composited
pH	SM 4500 H+	250ml Poly	4 degrees	24 hours	4-12 Grab samples composited
Settleable Matter	SM 2540 F	1L Poly	4 degrees	48 hours	24-hour flow proportional composite
Total Suspended Solid (TSS)	SM 2540 D	1L Poly	4 degrees	7 days	24-hour flow proportional composite
Priority Pollutants Metals & Cyanide					
Arsenic	EPA 200.8	500ml QCP	HN03	6 months	24-hour flow proportional composite
Cadmium	EPA 200.8	500ml QCP	HN03	6 months	24-hour flow proportional composite
Total Chromium	EPA 200.8	500ml QCP	HN03	6 months	24-hour flow proportional composite
Copper	EPA 200.8	500ml QCP	HN03	6 months	24-hour flow proportional composite
Cyanide	SM 4500CN E	500ml Poly	NA0H	14 days	4-12 Grab samples composited
Lead	EPA 200.8	500ml QCP	HN03	6 months	24-hour flow proportional composite
Molybdenum	EPA 200.8	500ml QCP	HN03	6 months	24-hour flow proportional composite
Mercury	EPA 1631E	250ml Glass DB	HN03	28 days	24-hour flow proportional composite
Nickel	EPA 200.8	500ml QCP	HN03	6 months	24-hour flow proportional composite
Selenium	EPA 200.8	500ml QCP	HN03	6 months	24-hour flow proportional composite
Silver	EPA 200.8	500ml QCP	HN03	6 months	24-hour flow proportional composite
Zinc	EPA 200.8	500ml QCP	HN03	6 months	24-hour flow proportional composite
Organics					
bis(2-ethylhexyl phthalate)	EPA Method 625	1L Amber Glass x 2	4 degrees	14 days	24-hour flow proportional composite
Total Phenolic Compounds	EPA Method 625	500 ml amber	4 degrees	14 days	4-12 Grab samples composited
Di-n-butyl phthalate	EPA Method 625	1L Amber Glass x 2	4 degrees	14 days	4-12 Grab samples composited
Bromodichloromethane	EPA Method 624	40 ml VOAs x 3	HCL, 4 degrees	14 days	4-12 Grab samples composited
Carbon Tetrachloride	EPA Method 624	40 ml VOAs x 3	HCL, 4 degrees	14 days	4-12 Grab samples composited
Chloroform	EPA Method 624	41 ml VOAs x 3	HCL, 4 degrees	14 days	4-12 Grab samples composited
Methyl tert-Butyl Ether (MTBE)	EPA Method 624	40 ml VOAs x 3	HCL, 4 degrees	14 days	4-12 Grab samples composited
Toluene	EPA Method 624	40 ml VOAs x 3	HCL, 4 degrees	14 days	4-12 Grab samples composited
Pesticides and Dioxin					
α-BHC	EPA Method 608	1L Amber Glass x 2	4 degrees	7 days	24-hour flow proportional composite
4,4-DDT	EPA Method 608	1L Amber Glass x 2	4 degrees	7 days	24-hour flow proportional composite
2,3,7,8-TCDD equivalents	EPA Method 1613	1L Amber Glass x 2	4 degrees	14 days	24-hour flow proportional composite

FIGURES





0 100 200 400 600 800
Feet

LEGEND

→ Flow Direction

MCSD Ponds

Base Image Data Source:
USGS Digital Raster Graph

ALL LOCATIONS APPROXIMATE

McKinleyville Community
Services District

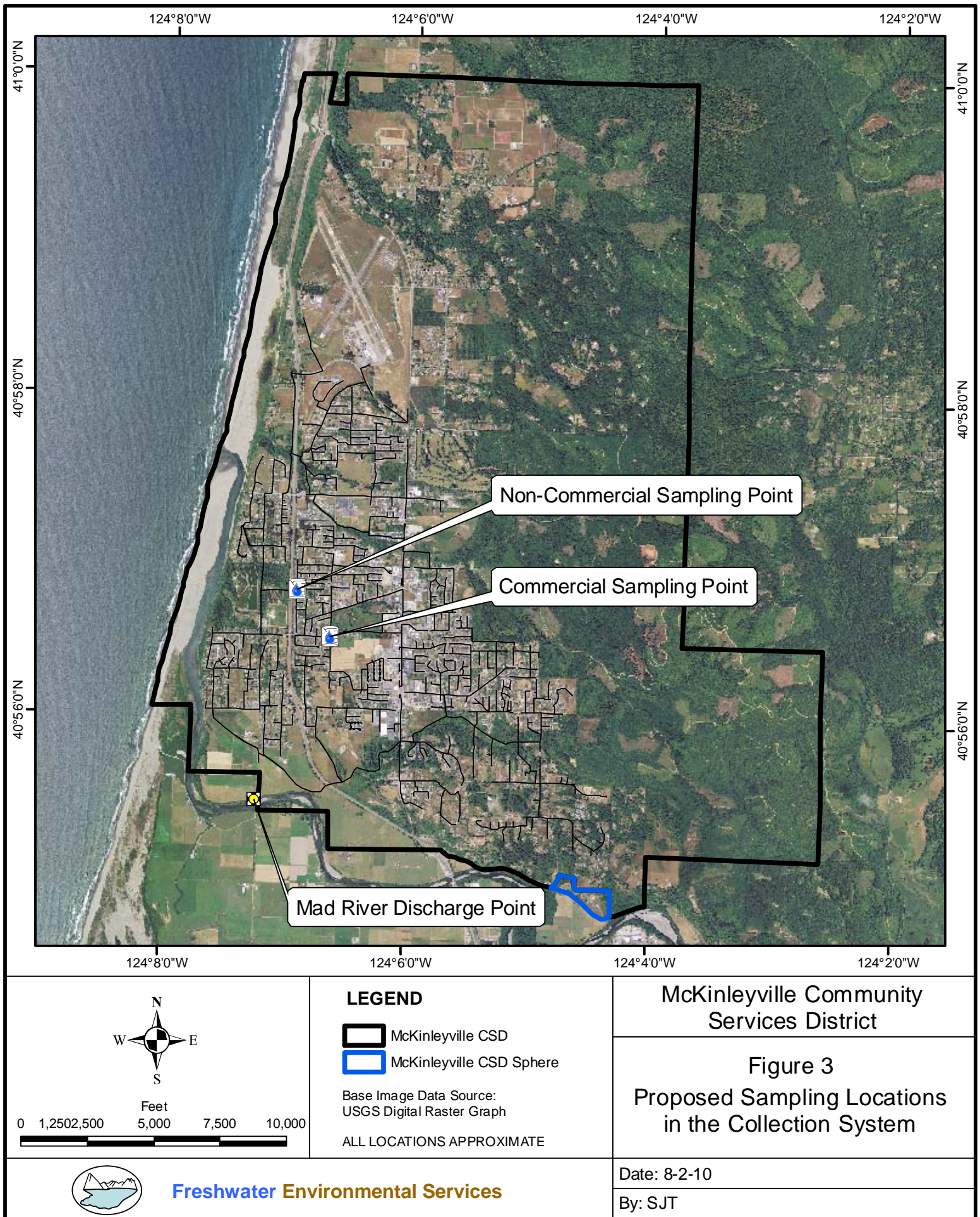
Figure 2 MCSD Wastewater Treatment Plant Site Plan

Date: 8-2-10

By: SJT



Freshwater Environmental Services





CONSULTING ENGINEERS & GEOLOGISTS, INC.

812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 • shninfo@shn-engr.com

Reference: 008189.610

February 11, 2010

Ms. Lisa Bernard
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95540

Subject: Progress Report of the Compliance Schedule for Final Effluent Limitations for the McKinleyville Community Services District Wastewater Management Facility; WDR Order No. R1-2008-0039; NPDES Permit No. CA0024490; WDID No. 1B82084OHUM

Dear Ms. Bernard:

On behalf of the McKinleyville Community Services District (MCSD), SHN Consulting Engineers & Geologists, Inc. (SHN) has prepared this progress report of the Compliance Schedule for Final Effluent Limitations. As the compliance schedule is for more than one year, MCSD is required to submit periodic progress reports. This progress report is intended to detail the steps that have been implemented toward achieving compliance for Final Effluent Limitations (Table 1).

Table 1 Compliance Schedule for Final Effluent Limitations NPDES Permit No. CA0024490 MCSD Wastewater Treatment Facility, McKinleyville, CA			
Task No.	Task Description	Compliance Date	Percent Complete
1	A. Prepare and distribute mailer to notify all customers, including local businesses, of priority pollutant concerns, hazardous material identification, and disposal. B. Develop a product information list regarding household items and products of specific concern. C. Develop a pollutant inventory and identify local businesses that may discharge pollutants of concern to the sanitary sewer.	8/1/2008	100%
2	A. Develop and implement a sanitary sewer monitoring program to monitor the effectiveness of the public education effort, to identify possible sources of pollutants of concern, and to detect illicit and unpermitted discharges of pollutants of concern to the sanitary sewer. B. Develop and implement a program to monitor the discharge of septage wastewater from Steve's Septic Service.	11/1/2008	100%
3	Develop waste discharge permits and individual discharge plans for businesses identified in Task 1.C.	6/1/2009	Delayed
4	Adopt or modify local ordinances for local waste discharge permits that include monitoring, inspection, and enforcement authority for District personnel.	9/1/2009	Delayed
5	If source control efforts described in Tasks 1-4 do not result in compliance with final effluent limitations for priority pollutants, the Discharger shall submit, for Executive Officer	12/1/2009	Delayed

Ms. Lisa Bernard

Progress Report of the Compliance Schedule for Final Effluent Limitations for MCSD

February 11, 2010

Page 2

Table 1 Compliance Schedule for Final Effluent Limitations NPDES Permit No. CA0024490 MCSD Wastewater Treatment Facility, McKinleyville, CA			
Task No.	Task Description	Compliance Date	Percent Complete
	approval, a work plan to achieve compliance with the final effluent limitations. The implementation plan could include improvements in treatment efficiency or treatment facility upgrades.		
6	Comply with final effluent limitations for copper, lead, alpha-BCH, 4,4'-DDT, bis(2-ethylhexyl)phthalate, and 2,3,7,8-TCDD Equivalents.	5/18/2010	On Time ²
1. Source: NPDES Permit No. CA0024490 2. MCSD expects to meet the date of compliance with final effluent limitations within 60 days subsequent to the receipt of the Pretreatment Inspection Report.			

MCSD has completed a Pollutants of Concern Report (FES, October 2008) and an MCSD Sanitary Sewer Monitoring Program Report (FES, June 2009), fulfilling the requirement of the Compliance Schedule for Final Effluent Limitations Tasks 1 and 2.

Current MCSD ordinances include provisions for monitoring, inspection, and enforcement authority for District personnel; however, local limitations need to be established for individual waste discharge permits to be drafted and enforced. As of January 1, 2010, MCSD had not received the Pretreatment Inspection Report, prepared by TetraTech for the RWQCB. Once MCSD receives the Pretreatment Inspection Report, MCSD will begin its local limitations analysis and prepare individual permits for McKinleyville industrial users, complying with the requirements of Tasks 3 and 4. Furthermore, Tasks 5 and 6 will build off of the work completed in Tasks 3 and 4.

MCSD expects to meet the date of compliance with final effluent limitation for copper, lead, alpha-BCH, 4,4'-DDT, bis(2-ethylhexyl)phthalate, and 2,3,7,8-TCDD equivalents, in accordance with Task 6 within 60 days subsequent to the receipt of the Pretreatment Inspection Report.

If you have any questions, please call me at 707-441-8855.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.



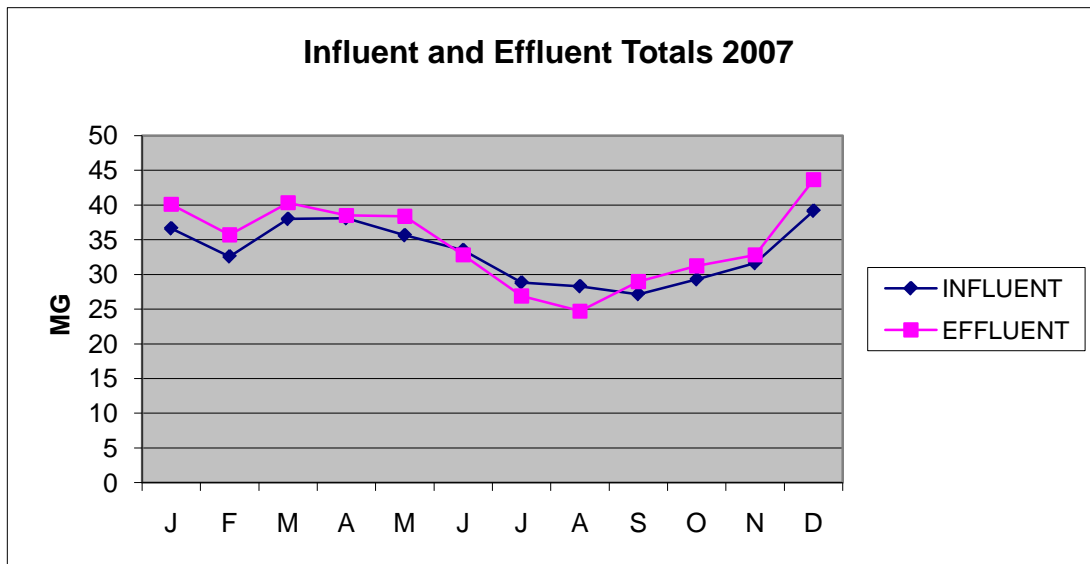
Rose Patenaude, P.E.
Water Resources Engineer

JRP:lms

c: Norman Shopay, General Manager, MCSD
Greg Orsini, Operations Manager, MCSD

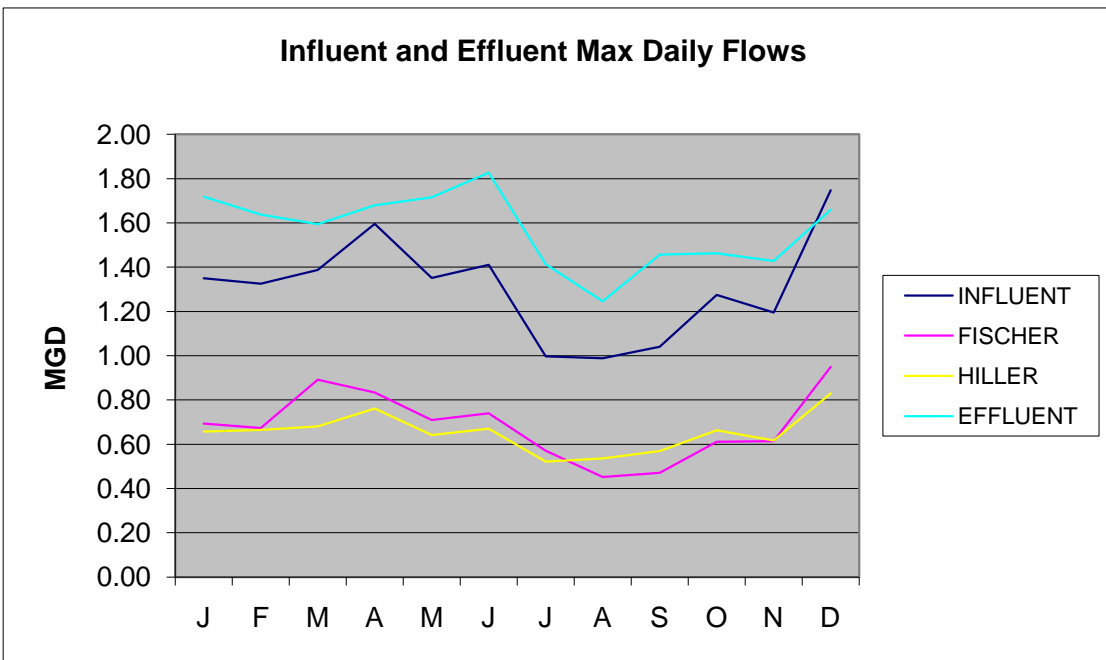
McKinleyville Community Services District
Wastewater Management Facility
Influent and Effluent Flows 2010
in MGD

DATE	INFLUENT	FISCHER	HILLER	EFFLUENT	AVERAGE GPM
J	36.6	18.6	18.1	40.1	927
F	32.6	16.3	16.3	35.7	955
M	38.0	19.8	18.2	40.3	958
A	38.1	19.8	18.3	38.5	958
M	35.6	18.1	17.6	38.4	948
J	33.5	16.9	16.6	32.8	940
J	28.8	14.3	14.6	26.9	826
A	28.3	13.2	15.0	24.7	802
S	27.1	12.5	14.7	29.0	912
O	29.3	13.9	15.4	31.2	883
N	31.6	15.4	16.2	32.8	866
D	39.2	20.0	19.2	43.7	1073
Total	398.8	198.8	200.0	414.1	
Average	33.2	16.6	16.7	34.5	921
Maximum	39.2	20.0	19.2	43.7	1073
Minimum	27.1	12.5	14.6	24.7	802



McKinleyville Community Services District
Wastewater Management Facility
Influent and Effluent Max Daily Flows in MGD
2010

DATE	INFLUENT	FISCHER	HILLER	EFFLUENT	MAX GPM
J	1.350	0.694	0.657	1.719	1227
F	1.326	0.673	0.665	1.638	1210
M	1.387	0.892	0.680	1.595	1115
A	1.596	0.834	0.762	1.680	1176
M	1.352	0.710	0.642	1.716	1203
J	1.411	0.740	0.671	1.827	1290
J	0.998	0.571	0.521	1.413	1107
A	0.988	0.453	0.536	1.246	1356
S	1.040	0.471	0.569	1.457	1345
O	1.275	0.612	0.663	1.463	1353
N	1.196	0.614	0.617	1.428	1132
D	1.748	0.949	0.830	1.660	1226
Maximum	1.748	0.949	0.830	1.827	1356



McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY

RIVER CFS - EFFLUENT FLOWS -

M-004

RIVER DILUTION

M-005

JANUARY 2010

M-006

DATE	M-INF INFLUENT MGD	M-001 EFFLUENT MGD	EFFLUENT MAXIMUM GPM	M-003 PERK PONDS MGD	M-007 IRRIGATE MGD	M-002 RIVER MGD	RIVER DILUTION 100:1	MAXIMUM G.P.M. DISCHARGE FOR 100:1	RIVER FLOW IN CFS	RIVER FLOW IN GPS
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1	1.337	1.020	723			1.020	1633	11805	2630	19675
2	1.144	1.017	717			1.017	4701	33709	7510	56182
3	1.165	1.027	722			1.027	2903	20962	4670	34936
4	1.065	1.096	873			1.096	1908	16653	3710	27755
5	1.005	1.292	941			1.292	1526	14364	3200	23939
6	1.090	1.342	941			0.000	341	3209	715	5349
7	1.081	1.205	952			1.205	439	4179	931	6965
8	1.027	0.971	723			0.971	410	2967	661	4945
9	1.063	0.976	909			0.976	332	3016	672	5027
10	1.117	1.261	889			1.261	323	2873	640	4788
11	1.047	1.256	885			1.256	259	2289	510	3815
12	1.200	1.332	982			1.332	279	2743	611	4571
13	1.193	1.377	968			1.377	2026	19615	4370	32692
14	1.111	1.246	970			1.246	1425	13825	3080	23041
15	1.084	1.092	766			1.092	1143	8753	1950	14588
16	1.112	1.156	847			1.156	779	6598	1470	10997
17	1.125	1.212	850			1.212	644	5476	1220	9127
18	1.213	1.278	935			1.278	696	6508	1450	10847
19	1.313	1.431	1060			1.431	2426	25720	5730	42866
20	1.298	1.526	1098			1.526	3041	33395	7440	55659
21	1.300	1.487	1227			1.487	2883	35370	7880	58950
22	1.223	1.025	1094			1.025	2298	25136	5600	41894
23	1.261	1.584	1114			1.584	1632	18179	4050	30298
24	1.303	1.610	1136			1.610	1284	14588	3250	24313
25	1.258	1.605	1128			1.605	1512	17057	3800	28428
26	1.350	1.571	1118			1.571	3011	33665	7500	56108
27	1.262	1.580	1129			1.580	2433	27470	6120	45784
28	1.191	1.244	1135			1.244	1629	18493	4120	30822
29	1.149	1.080	892			1.080	1645	14678	3270	24463
30	1.274	1.483	1203			1.483	1071	12882	2870	21470
31	1.281	1.719	1207			1.719	1086	13107	2920	21845

TOTAL	36.642	40.101		0.000	0.000	38.759				
AVERAGE	1.182	1.294	972	0.000	0.000	1.250	1539	15138	3373	25230
MAXIMUM	1.350	1.719	1227	0.000	0.000	1.719	4701	35370	7880	58950
MINIMUM	1.005	0.971	717	0.000	0.000	0.000	259	2289	510	3815
DAYS	31	31	0	0	0	31				

DAYS WITH NO DISCHARGE TO THE MAD RIVER = 0

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY

RIVER CFS - EFFLUENT FLOWS -

M-004

RIVER DILUTION

M-005

FEBRUARY 2010

M-006

DATE	M-INF INFLUENT MGD	M-001 EFFLUENT MGD	EFFLUENT MAXIMUM GPM	M-003 PERK PONDS MGD	M-007 IRRIGATE MGD	M-002 RIVER MGD	RIVER DILUTION 100:1	MAXIMUM G.P.M. DISCHARGE FOR 100:1	RIVER FLOW IN CFS	RIVER FLOW IN GPS
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1	1.172	1.638	1210			1.638	909	10997	2450	18328
2	1.166	1.564	1097			1.564	990	10862	2420	18104
3	1.182	1.561	1095			1.561	1168	12793	2850	21321
4	1.157	1.337	1088			1.337	1209	13152	2930	21919
5	1.178	1.086	768			1.086	3039	23341	5200	38901
6	1.232	1.357	1071			0.000	1785	19121	4260	31869
7	1.281	1.533	1072			1.533	1687	18089	4030	30148
8	1.163	0.956	1070			0.956	1342	14364	3200	23939
9	1.130	0.000	0			0.000	NA	11940	2660	19899
10	1.121	1.068	1097			1.068	904	9920	2210	16533
11	1.120	1.380	1100			1.380	820	9022	2010	15037
12	1.135	1.171	822			1.171	1207	9920	2210	16533
13	1.157	1.391	1101			1.391	840	9247	2060	15411
14	0.710	1.569	1101			1.569	803	8843	1970	14738
15	1.215	1.568	1121			1.568	969	10862	2420	18104
16	1.132	1.573	1106			1.573	852	9426	2100	15710
17	1.107	1.578	1119			1.578	774	8663	1930	14438
18	1.086	1.329	1109			1.329	708	7855	1750	13092
19	1.074	1.139	802			1.139	901	7227	1610	12044
20	1.102	1.140	804			1.140	821	6598	1470	10997
21	1.102	1.141	800			1.141	763	6104	1360	10174
22	1.067	1.142	799			1.142	708	5656	1260	9426
23	1.105	1.140	800			1.140	634	5072	1130	8454
24	1.134	1.133	797			1.133	113	898	200	1496
25	1.097	1.132	793			1.132	1336	10593	2360	17655
26	1.326	1.118	790			1.118	1239	9785	2180	16309
27	1.297	1.388	1098			1.388	3483	38243	8520	63738
28	1.287	1.583	1112			1.583	2083	23161	5160	38602

TOTAL	32.035	35.715		0.000	0.000	34.358				
AVERAGE	1.144	1.276	955	0.000	0.000	1.227	1146	11848	2640	19747
MAXIMUM	1.326	1.638	1210	0.000	0.000	1.638	3483	38243	8520	63738
MINIMUM	0.710	0.000	0	0.000	0.000	0.000	0	898	200	1496
DAYS	28	27	0	0	0	27				

DAYS WITH NO DISCHARGE TO THE MAD RIVER = 1

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY

RIVER CFS - EFFLUENT FLOWS -

M-004

RIVER DILUTION

M-005

MARCH 2010

M-006

DATE	M-INF INFLUENT MGD	M-001 EFFLUENT MGD	EFFLUENT MAXIMUM GPM	M-003 PERK PONDS MGD	M-007 IRRIGATE MGD	M-002 RIVER MGD	RIVER DILUTION 100:1	MAXIMUM G.P.M. DISCHARGE FOR 100:1	RIVER FLOW IN CFS	RIVER FLOW IN GPS
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1	1.174	1.595	1115			1.595	1449	16159	3600	26932
2	1.251	1.582	1113			1.582	1202	13376	2980	22293
3	1.349	1.568	1080			1.568	1762	19032	4240	31719
4	1.230	1.361	1102			1.361	1226	13511	3010	22518
5	1.192	1.150	806			1.150	1281	10324	2300	17206
6	1.217	1.410	1079			0.000	799	8618	1920	14364
7	1.243	1.542	1082			1.542	701	7586	1690	12643
8	1.210	1.548	1084			1.548	650	7047	1570	11745
9	1.186	1.556	1090			1.556	630	6868	1530	11446
10	1.215	1.415	1088			1.415	689	7496	1670	12493
11	1.178	1.153	808			1.153	872	7047	1570	11745
12	1.374	1.146	808			1.146	789	6374	1420	10623
13	1.315	0.910	804			0.910	2730	21949	4890	36582
14	1.346	1.137	1092			1.137	1324	14453	3220	24089
15	1.346	1.137	1092			1.137	1048	11446	2550	19077
16	1.156	1.500	1095			1.500	902	9875	2200	16458
17	1.195	1.569	1101			1.569	746	8214	1830	13690
18	1.160	1.444	1100			1.444	669	7361	1640	12269
19	1.130	1.148	803			1.148	805	6464	1440	10773
20	1.143	1.148	809			1.148	633	5117	1140	8528
21	1.216	1.143	803			1.143	648	5207	1160	8678
22	1.145	1.139	798			1.139	652	5207	1160	8678
23	1.111	1.141	799			1.141	573	4578	1020	7631
24	1.131	1.111	786			1.111	532	4179	931	6965
25	1.238	1.100	772			1.100	616	4758	1060	7930
26	1.186	1.092	768			1.092	1163	8932	1990	14887
27	1.213	1.094	768			1.094	830	6374	1420	10623
28	1.248	1.095	768			1.095	725	5566	1240	9276
29	1.209	1.325	1095			1.325	476	5207	1160	8678
30	1.306	1.544	1093			1.544	1125	12299	2740	20498
31	1.387	1.529	1079			1.529	1756	18942	4220	31570

TOTAL	38.000	40.332		0.000	0.000	38.922				
AVERAGE	1.226	1.301	957	0.000	0.000	1.256	968	9341	2081	15568
MAXIMUM	1.387	1.595	1115	0.000	0.000	1.595	2730	21949	4890	36582
MINIMUM	1.111	0.910	768	0.000	0.000	0.000	476	4179	931	6965
DAYS	31	31		0	0	31				

DAYS WITH NO DISCHARGE TO THE MAD RIVER = 0

APRIL 2010

M-006

RIVER DILUTION

	M-INF	M-001		M-003	M-007	M-002				
DATE	INFLUENT	EFFLUENT	EFFLUENT	PERK	IRRIGATE	RIVER	RIVER	MAXIMUM	RIVER	RIVER
	MGD	MGD	MAXIMUM	PONDS	MGD	MGD	DILUTION	G.P.M.	FLOW IN	FLOW IN
			GPM	MGD			100:1	DISCHARGE	CFS	GPS
								FOR 100:1		

[illegible]

TOTAL	38.104	38.493		0.000	0.000	36.908				
AVERAGE	1.270	1.283	958	0.000	0.000	1.230	1393	14256	3176	23760
MAXMUM	1.596	1.680	1176	0.000	0.000	1.680	3753	38243	8520	63738
M N MUM	1.131	0.000	0	0.000	0.000	0.000	0	5790	1290	9650
DAYS	30	29		0	0	29				

DAYS WITH NO DISCHARGE TO THE MAD RIVER = 1

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY

RIVER CFS - EFFLUENT FLOWS -

M-004

RIVER DILUTION

M-005

M-006

MAY 2010

DATE	M-INF INFLUENT MGD	M-001 EFFLUENT MGD	EFFLUENT MAXIMUM GPM	M-003 PERK PONDS MGD	M-007 IRRIGATE MGD	M-002 RIVER MGD	RIVER DILUTION 100:1	MAXIMUM G.P.M. DISCHARGE FOR 100:1	RIVER FLOW IN CFS	RIVER FLOW IN GPS
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1	1.324	1.686	1179		0.000	1.686	1454	17146	3820	28577
2	1.352	1.684	1179		0.000	1.684	1199	14139	3150	23565
3	1.258	1.703	1193		0.000	1.703	993	11850	2640	19750
4	1.224	1.716	1202		0.000	1.716	807	9695	2160	16159
5	1.205	1.712	1203		0.000	1.712	735	8843	1970	14738
6	1.191	1.557	1195		0.000	1.557	654	7810	1740	13017
7	1.168	1.557	934		0.000	1.557	803	7496	1670	12493
8	1.165	1.331	932		0.000	1.331	737	6868	1530	11446
9	1.182	1.330	930		0.000	1.330	700	6508	1450	10847
10	1.218	1.325	931		0.000	1.325	661	6149	1370	10249
11	1.154	1.302	917		0.000	1.302	857	7855	1750	13092
12	1.166	1.289	902		0.000	1.289	781	7047	1570	11745
13	1.134	1.284	900		0.000	1.284	743	6688	1490	11147
14	1.121	0.969	896	0.189	0.000	0.780	711	6374	1420	10623
15	1.134	0.495	349	0.495	0.000	0.000	0	0		0
16	1.181	0.503	353	0.503	0.000	0.000	0	0		0
17	1.118	0.930	1181	0.201	0.729	0.000	0	0		0
18	1.090	1.495	1182		1.495	0.000	0	0		0
19	1.083	1.495	1183		1.495	0.000	0	0		0
20	1.052	1.396	1015		1.396	0.000	0	0		0
21	1.068	1.123	1020	0.305	0.818	0.000	0	0		0
22	1.101	0.647	462	0.647	0.000	0.000	0	0		0
23	1.136	0.638	461	0.638	0.000	0.000	0	0		0
24	1.071	0.889	1045	0.263	0.626	0.000	0	0		0
25	1.086	1.071	940		1.071	0.000	0	0		0
26	1.130	1.117	948		1.117	0.000	0	0		0
27	1.151	1.084	1005		1.084	0.000	0	0		0
28	1.131	1.329	1040	0.150	1.179	0.000	0	0		0
29	1.066	1.223	929		1.223	0.000	0	0		0
30	1.062	1.282	940		1.282	0.000	0	0		0
31	1.131	1.221	854		1.221	0.000	0	0		0

TOTAL	35.653	38.383		3.391	14.736	20.256				
AVERAGE	1.150	1.238	948	0.377	0.475	0.653	382	4015	1981	6692
MAXIMUM	1.352	1.716	1203	0.647	1.495	1.716	1454	17146	3820	28577
MINIMUM	1.052	0.495	349	0.150	0.000	0.000	0	0	1370	0
DAYS	31	31		9	13	14				

DAYS WITH NO DISCHARGE TO THE MAD RIVER = 17

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY

RIVER CFS - EFFLUENT FLOWS -

M-004

RIVER DILUTION

M-005

DECEMBER 2010

M-006

DATE	M-INF INFLUENT MGD	M-001 EFFLUENT MGD	EFFLUENT MAXIMUM GPM	M-003 PERK PONDS MGD	M-007 IRRIGATE MGD	M-002 RIVER MGD	RIVER DILUTION 100:1	MAXIMUM G.P.M. DISCHARGE FOR 100:1	RIVER FLOW IN CFS	RIVER FLOW IN GPS
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1	1.108	1.438	1172		0.408	1.030	437	5117	1140	8528
2	1.247	1.66	1158			1.660	1194	13825	3080	23041
3	1.173	1.540	1162			1.540	1858	21590	4810	35984
4	1.162	1.538	1078			1.538	1241	13376	2980	22293
5	1.217	1.540	1081			1.540	938	10144	2260	16907
6	1.128	1.536	1082			0.000	962	10414	2320	17356
7	1.079	1.544	1166			1.544	885	10324	2300	17206
8	1.106	1.567	1216			1.567	672	8169	1820	13615
9	1.110	1.559	1226			1.559	688	8439	1880	14064
10	1.197	1.443	1189			1.443	1457	17326	3860	28877
11	1.214	1.330	934			1.330	1528	14274	3180	23790
12	1.226	1.331	932			1.331	1310	12209	2720	20348
13	1.178	0.805	987			0.805	982	9695	2160	16159
14	1.281	0.000	0			0.000	0	18313	4080	30522
15	1.213	0.677	979			0.677	2242	21949	4890	36582
16	1.177	1.420	1133			1.420	1391	15755	3510	26258
17	1.119	1.424	1133			1.424	1042	11805	2630	19675
18	1.222	1.425	1000			1.425	1086	10862	2420	18104
19	1.299	1.403	986			1.403	2331	22982	5120	38303
20	1.387	1.464	1092			1.464	2902	31690	7060	52816
21	1.297	1.573	1103			1.573	2739	30208	6730	50347
22	1.355	1.587	1224			1.587	2442	29894	6660	49823
23	1.270	1.586	1110			1.586	1880	20872	4650	34787
24	1.259	1.594	1118			1.594	1349	15082	3360	25136
25	1.230	1.595	1118			1.595	1068	11940	2660	19899
26	1.329	1.581	1111			1.581	1814	20154	4490	33590
27	1.344	1.591	1225			1.591	1777	21770	4850	36283
28	1.557	1.322	1212			1.322	1804	21859	4870	36432
29	1.748	1.490	1153			1.490	12302	141840	31600	236400
30	1.494	1.525	1078			1.525	4830	52068	11600	86780
31	1.449	1.562	1103			1.562	2902	32004	7130	53340

TOTAL	39.175	43.650		0.000	0.408	41.706				
AVERAGE	1.264	1.408	1073	0.000	0.408	1.345	1937	22127	4930	36879
MAXIMUM	1.748	1.660	1226	0.000	0.408	1.660	12302	141840	31600	236400
MINIMUM	1.079	0.000	0	0.000	0.408	0.000	0	5117	1140	8528
DAYS	31	30		0	1	30				

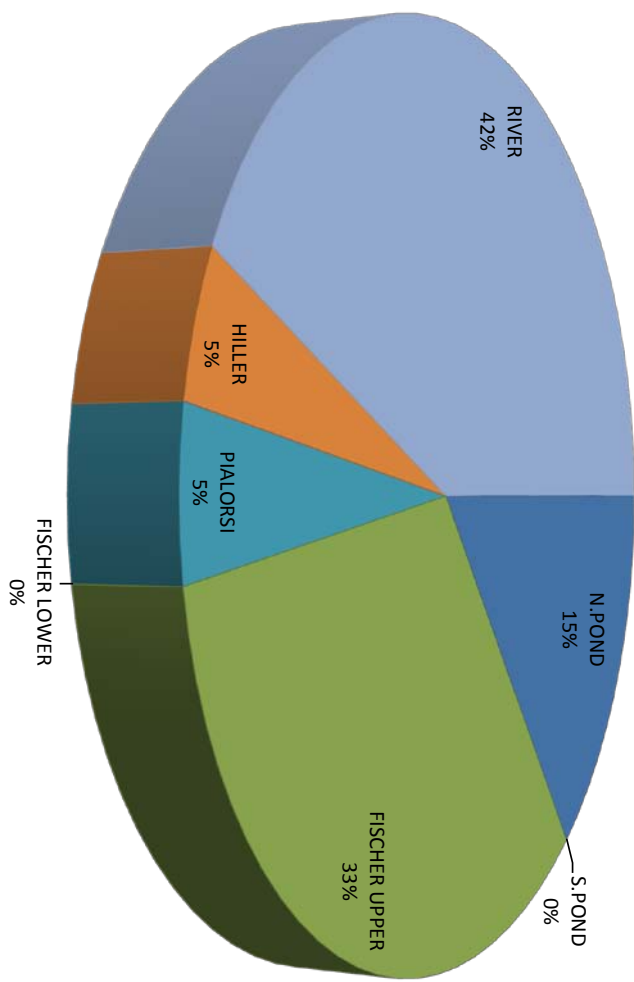
DAYS WITH NO DISCHARGE TO THE MAD RIVER = 1

MCKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY
EFFLUENT DISCHARGE DISPOSAL

TOTALS 2010

DATE	M-INF INFLUENT MGD	M-001 EFFLUENT MGD	M-003 N.POND MGD	M-003 S.POND MGD	M-005 FISCHER MGD	UPPER	M-004 FISCHER MGD	LOWER	M-007 PIALORSI MGD	M-006 HILLER MGD	IRRGATE TOTAL MGD	M-002 RIVER MGD
JANUARY	36.6	40.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.1
FEBRUARY	32.0	35.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.7
MARCH	38.0	40.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.3
APRIL	38.1	38.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.5
MAY	35.7	38.4	3.4	0.0	0.0	12.0	0.0	0.0	0.0	2.7	14.7	20.3
JUNE	33.5	32.8	6.6	0.0	0.0	21.8	0.0	0.0	1.0	3.4	26.3	0.0
JULY	28.8	26.9	8.0	0.0	0.0	14.1	0.0	0.0	3.3	1.5	18.9	0.0
AUGUST	28.8	24.7	6.3	0.0	0.0	13.3	0.0	0.0	3.6	1.5	18.4	0.0
SEPTEMBER	26.5	29.0	7.0	0.0	0.0	15.4	0.0	0.0	3.9	2.7	22.0	0.0
OCTOBER	29.3	31.2	9.4	0.0	0.0	17.4	0.0	0.0	2.5	1.9	21.8	0.0
NOVEMBER	31.6	32.8	9.5	0.0	0.0	17.7	0.0	0.0	3.4	2.2	23.3	0.0
DECEMBER	39.2	43.7	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.4	43.2
Totals	398.2	414.1	50.2	0.0	0.0	112.0	0.0	0.0	17.7	16.0	145.8	218.1

Effluent Distribution



McKINLEYVILLE COMMUNITY SERVICES DISTRICT WASTEWATER MANAGEMENT FACILITY EFFLUENT DISCHARGE DISPOSAL

JANUARY 2010

M-INF		M-001		002		002		004		003		006		005		001	
DATE	INFLUENT	EFFLUENT	MAXIMUM	N.POND	S.POND	FISCHER	FISCHER	PIALORSI	HILLER	IRRGATE	RIVER						
	MGD	MGD	GPM	MGD	MGD	MGD	MGD	MGD	MGD	TOTAL	MGD						
						UPPER	LOWER			MGD							
1	1.337	1.020	723							0.000	1.020						
2	1.144	1.017	717							0.000	1.017						
3	1.165	1.027	722							0.000	1.027						
4	1.065	1.096	873							0.000	1.096						
5	1.005	1.292	941							0.000	1.292						
6	1.090	1.342	941							0.000	1.342						
7	1.081	1.205	952							0.000	1.205						
8	1.027	0.971	723							0.000	0.971						
9	1.063	0.976	909							0.000	0.976						
10	1.117	1.261	889							0.000	1.261						
11	1.047	1.256	885							0.000	1.256						
12	1.200	1.332	982							0.000	1.332						
13	1.193	1.377	968							0.000	1.377						
14	1.111	1.246	970							0.000	1.246						
15	1.084	1.092	766							0.000	1.092						
16	1.112	1.156	847							0.000	1.156						
17	1.125	1.212	850							0.000	1.212						
18	1.213	1.278	935							0.000	1.278						
19	1.313	1.431	1060							0.000	1.431						
20	1.298	1.526	1098							0.000	1.526						
21	1.300	1.487	1227							0.000	1.487						
22	1.223	1.025	1094							0.000	1.025						
23	1.261	1.584	1114							0.000	1.584						
24	1.303	1.610	1136							0.000	1.610						
25	1.258	1.605	1128							0.000	1.605						
26	1.350	1.571	1118							0.000	1.571						
27	1.262	1.580	1129							0.000	1.580						
28	1.191	1.244	1135							0.000	1.244						
29	1.149	1.080	892							0.000	1.080						
30	1.274	1.483	1203							0.000	1.483						
31	1.281	1.719	1207							0.000	1.719						
TOTAL	36.642	40.101		0.000	0.000	0.000	0.000	0.000	0.000	0.000	40.101						
AVERAGE	1.182	1.294	972	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.294						
MAXIMUM	1.350	1.719	1227	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.719						
MINIMUM	1.005	0.971	717	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.971						
DAYS	31	31		0	0	0	0	0	0	0	31						

DAYS WITH NO DISCHARGE = 0

McKINLEYVILLE COMMUNITY SERVICES DISTRICT WASTEWATER MANAGEMENT FACILITY EFFLUENT DISCHARGE DISPOSAL

FEBRUARY 2010

M-INF		M-001	002		002	004	003	006	005	001	
DATE	INFLUENT MGD	EFFLUENT MGD	MAXIMUM GPM	N.POND MGD	S.POND MGD	FISCHER MGD UPPER	FISCHER MGD LOWER	PIALORSI MGD	HILLER MGD	IRRGATE TOTAL MGD	RIVER MGD
1	1.172	1.638	1210							0.000	1.638
2	1.166	1.564	1097							0.000	1.564
3	1.182	1.561	1095							0.000	1.561
4	1.157	1.337	1088							0.000	1.337
5	1.178	1.086	768							0.000	1.086
6	1.232	1.357	1071							0.000	1.357
7	1.281	1.533	1072							0.000	1.533
8	1.163	0.956	1070							0.000	0.956
9	1.130	0.000	0							0.000	0.000
10	1.121	1.068	1097							0.000	1.068
11	1.120	1.380	1100							0.000	1.380
12	1.135	1.171	822							0.000	1.171
13	1.157	1.391	1101							0.000	1.391
14	0.710	1.569	1101							0.000	1.569
15	1.215	1.568	1121							0.000	1.568
16	1.132	1.573	1106							0.000	1.573
17	1.107	1.578	1119							0.000	1.578
18	1.086	1.329	1109							0.000	1.329
19	1.074	1.139	802							0.000	1.139
20	1.102	1.140	804							0.000	1.140
21	1.102	1.141	800							0.000	1.141
22	1.067	1.142	799							0.000	1.142
23	1.105	1.140	800							0.000	1.140
24	1.134	1.133	797							0.000	1.133
25	1.097	1.132	793							0.000	1.132
26	1.326	1.118	790							0.000	1.118
27	1.297	1.388	1098							0.000	1.388
28	1.287	1.583	1112							0.000	1.583
TOTAL	32.035	35.715		0.000	0.000	0.000	0.000	0.000	0.000	0.000	35.715
AVERAGE	1.144	1.276	955	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.276
MAXIMUM	1.326	1.638	1210	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.638
MINIMUM	0.710	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DAYS	28	27		0	0	0	0	0	0	0	27
DAYS WITH NO DISCHARGE = 1											

McKINLEYVILLE COMMUNITY SERVICES DISTRICT WASTEWATER MANAGEMENT FACILITY EFFLUENT DISCHARGE DISPOSAL

MARCH 2010

	M-INF	M-001		002	002	004	003	006	005		001
DATE	INFLUENT MGD	EFFLUENT MGD	MAXIMUM GPM	N.POND MGD	S.POND MGD	FISCHER MGD UPPER	FISCHER MGD LOWER	PIALORSI MGD	HILLER MGD	IRRGATE TOTAL MGD	RIVER MGD
1	1.174	1.595	1115							0.000	1.595
2	1.251	1.582	1113							0.000	1.582
3	1.349	1.568	1087							0.000	1.568
4	1.230	1.361	1102							0.000	1.361
5	1.192	1.150	806							0.000	1.150
6	1.217	1.410	1079							0.000	1.410
7	1.243	1.542	1082							0.000	1.542
8	1.210	1.548	1084							0.000	1.548
9	1.186	1.556	1090							0.000	1.556
10	1.215	1.415	1088							0.000	1.415
11	1.178	1.153	808							0.000	1.153
12	1.374	1.146	808							0.000	1.146
13	1.315	0.910	804							0.000	0.910
14	1.346	1.137	1092							0.000	1.137
15	1.346	1.137	1092							0.000	1.137
16	1.156	1.500	1095							0.000	1.500
17	1.195	1.569	1101							0.000	1.569
18	1.160	1.444	1100							0.000	1.444
19	1.130	1.148	803							0.000	1.148
20	1.143	1.148	809							0.000	1.148
21	1.216	1.143	803							0.000	1.143
22	1.145	1.139	798							0.000	1.139
23	1.111	1.141	799							0.000	1.141
24	1.131	1.111	786							0.000	1.111
25	1.238	1.100	772							0.000	1.100
26	1.186	1.092	768							0.000	1.092
27	1.213	1.094	768							0.000	1.094
28	1.248	1.095	768							0.000	1.095
29	1.209	1.325	1095							0.000	1.325
30	1.306	1.544	1093							0.000	1.544
31	1.387	1.529	1079							0.000	1.529
TOTAL	38.000	40.332		0.000	0.000	0.000	0.000	0.000	0.000	0.000	40.332
AVERAGE	1.226	1.301	958	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.301
MAXIMUM	1.387	1.595	1115	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.595
MINIMUM	1.111	0.910	768	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.910
DAYS	31	31		0	0	0	0	0	0	0	31

McKINLEYVILLE COMMUNITY SERVICES DISTRICT WASTEWATER MANAGEMENT FACILITY EFFLUENT DISCHARGE DISPOSAL

APRIL 2010

M-INF		M-001		002		002		004		003		006		005		001	
DATE	INFLUENT MGD	EFFLUENT MGD	MAXIMUM GPM	N.POND MGD	S.POND MGD	FISCHER MGD UPPER	FISCHER MGD LOWER	PIALORSI MGD	HILLER MGD	IRRGATE TOTAL MGD	RIVER MGD						
1	1.284	1.383	1082							0.000	1.383						
2	1.326	1.247	877							0.000	1.247						
3	1.352	1.447	1104							0.000	1.447						
4	1.398	1.534	1142							0.000	1.534						
5	1.427	1.584	1110							0.000	1.584						
6	1.313	1.585	1109							0.000	1.585						
7	1.280	1.591	1113							0.000	1.591						
8	1.222	1.378	1113							0.000	1.378						
9	1.212	1.219	853							0.000	1.219						
10	1.218	1.219	852							0.000	1.219						
11	1.287	1.220	853							0.000	1.220						
12	1.219	1.218	854							0.000	1.218						
13	1.278	1.203	854							0.000	1.203						
14	1.248	1.200	840							0.000	1.200						
15	1.200	1.200	847							0.000	1.200						
16	1.148	1.200	840							0.000	1.200						
17	1.163	1.317	1001							0.000	1.317						
18	1.207	1.436	1007							0.000	1.436						
19	1.137	0.844	1005							0.000	0.844						
20	1.259	0.000	0							0.000	0.000						
21	1.224	0.837	973							0.000	0.837						
22	1.179	1.113	909							0.000	1.113						
23	1.131	0.953	767							0.000	0.953						
24	1.134	1.348	1067							0.000	1.348						
25	1.194	1.520	1070							0.000	1.520						
26	1.159	1.511	1073							0.000	1.511						
27	1.546	1.476	1055							0.000	1.476						
28	1.596	1.451	1019							0.000	1.451						
29	1.438	1.579	1168							0.000	1.579						
30	1.325	1.680	1176							0.000	1.680						
TOTAL	38.104	38.493		0.000	0.000	0.000	0.000	0.000	0.000	0.000	38.493						
AVERAGE	1.270	1.283	958	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.283						
MAXIMUM	1.596	1.680	1176	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.680						
MINIMUM	1.131	0.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
DAYS	30	29		0	0	0	0	0	0	0	29						
DAYS WITH NO DISCHARGE = 1																	

MAY 2010

DAYS WITH NO DISCHARGE = 0

McKINLEYVILLE COMMUNITY SERVICES DISTRICT WASTEWATER MANAGEMENT FACILITY EFFLUENT DISCHARGE DISPOSAL

JUNE 2010

M-INF		M-001		002		002		004		003		006		005		001	
DATE	INFLUENT MGD	EFFLUENT MGD	MAXIMUM GPM	N.POND MGD	S.POND MGD	FISCHER MGD UPPER	FISCHER MGD LOWER	PIALORSI MGD	HILLER MGD	IRRGATE TOTAL MGD	RIVER MGD						
1	1.066	1.116	893	0.150		0.858			0.108	0.966	0.000						
2	1.152	1.126	1064			0.946			0.180	1.126	0.000						
3	1.270	1.284	1116			1.098			0.186	1.284	0.000						
4	1.411	1.125	1124	0.236		0.772			0.117	0.889	0.000						
5	1.283	0.506	358	0.506						0.000	0.000						
6	1.319	0.505	354	0.505						0.000	0.000						
7	1.239	0.911	1126	0.186		0.626			0.099	0.725	0.000						
8	1.201	1.315	1123			1.134			0.181	1.315	0.000						
9	1.195	1.308	1119			1.116			0.192	1.308	0.000						
10	1.182	1.276	1080			1.092			0.184	1.276	0.000						
11	1.152	1.026	1087	0.305		0.620			0.101	0.721	0.000						
12	1.135	0.566	399	0.566						0.000	0.000						
13	1.174	0.564	397	0.564						0.000	0.000						
14	1.134	1.264	1254	0.214		0.915			0.135	1.050	0.000						
15	1.111	1.827	1290			1.611			0.216	1.827	0.000						
16	1.095	1.807	1287			1.584			0.223	1.807	0.000						
17	1.087	1.786	1255			1.556			0.230	1.786	0.000						
18	1.073	1.159	1236	0.306		0.752			0.101	0.853	0.000						
19	1.031	0.569	400	0.569						0.000	0.000						
20	1.095	0.570	399	0.570						0.000	0.000						
21	1.067	1.318	1271	0.215		0.966			0.137	1.103	0.000						
22	1.047	1.386	1260			1.201		0.074	0.111	1.386	0.000						
23	1.020	1.272	1179			0.900		0.190	0.182	1.272	0.000						
24	1.007	1.506	1115			1.113		0.192	0.201	1.506	0.000						
25	0.977	0.981	1021	0.314		0.469		0.106	0.092	0.667	0.000						
26	0.988	0.574	403	0.574						0.000	0.000						
27	1.027	0.564	398	0.564						0.000	0.000						
28	1.006	0.882	1071	0.221		0.472		0.098	0.091	0.661	0.000						
29	0.981	1.496	1070			1.096		0.199	0.201	1.496	0.000						
30	0.975	1.228	1059			0.877		0.187	0.164	1.228	0.000						
TOTAL	33.500	32.817		6.565	0.000	21.774	0.000	1.046	3.432	26.252	0.000						
AVERAGE	1.117	1.094	940	0.386	#DIV/0!	0.990	#DIV/0!	0.149	0.156	0.875	0.000						
MAXIMUM	1.411	1.827	1290	0.574	0.000	1.611	0.000	0.199	0.230	1.827	0.000						
MINIMUM	0.975	0.505	354	0.150	0.000	0.469	0.000	0.074	0.091	0.000	0.000						
DAYS	30	30		17	0	22	0	7	22	30	30						

McKINLEYVILLE COMMUNITY SERVICES DISTRICT WASTEWATER MANAGEMENT FACILITY EFFLUENT DISCHARGE DISPOSAL

JULY 2010

	M-INF	M-001		002	002	004	003	006	005		001
DATE	INFLUENT MGD	EFFLUENT MGD	MAXIMUM GPM	N.POND MGD	S.POND MGD	FISCHER MGD UPPER	FISCHER MGD LOWER	PIALORSI MGD	HILLER MGD	IRRGATE TOTAL MGD	RIVER MGD
1	0.981	1.413	1027			1.018		0.186	0.209	1.413	0.000
2	0.957	0.952	1000	0.363		0.404		0.099	0.086	0.589	0.000
3	0.926	0.497	465	0.497						0.000	0.000
4	0.907	0.642	467	0.642						0.000	0.000
5	0.998	0.670	469	0.670						0.000	0.000
6	0.956	1.101	1071	0.310		0.581		0.109	0.101	0.791	0.000
7	0.966	1.265	1071			0.945		0.178	0.142	1.265	0.000
8	0.951	1.274	1066			0.962		0.168	0.144	1.274	0.000
9	0.929	1.070	1060	0.538		0.361		0.092	0.079	0.532	0.000
10	0.938	0.847	690	0.847						0.000	0.000
11	0.968	0.822	690	0.822						0.000	0.000
12	0.963	0.813	1050	0.373		0.348		0.008	0.084	0.440	0.000
13	0.947	1.175	1091			0.885		0.126	0.164	1.175	0.000
14	0.924	1.008	1107			0.720		0.171	0.117	1.008	0.000
15	0.903	1.127	1061			0.838		0.211	0.078	1.127	0.000
16	0.923	0.800	777	0.246		0.422		0.132		0.554	0.000
17	0.918	0.445	316	0.445						0.000	0.000
18	0.961	0.457	322	0.457						0.000	0.000
19	0.938	0.767	969	0.174		0.388		0.126	0.079	0.593	0.000
20	0.913	1.105	953			0.715		0.240	0.150	1.105	0.000
21	0.923	1.064	1001			0.759		0.213	0.092	1.064	0.000
22	0.895	1.002	959			0.795		0.207		1.002	0.000
23	0.900	0.787	921	0.207		0.445		0.135		0.580	0.000
24	0.856	0.266	284	0.266						0.000	0.000
25	0.973	0.289	298	0.289						0.000	0.000
26	0.924	0.759	1021	0.152		0.478		0.129		0.607	0.000
27	0.916	1.061	1013			0.857		0.204		1.061	0.000
28	0.910	1.049	1015			0.839		0.210		1.049	0.000
29	0.898	1.057	1036			0.841		0.216		1.057	0.000
30	0.890	0.840	984	0.263		0.452		0.125		0.577	0.000
31	0.872	0.466	337	0.466						0.000	0.000
TOTAL	28.824	26.890		8.027	0.000	14.053	0.000	3.285	1.525	18.863	0.000
AVERAGE	0.930	0.867	826	0.422	0.000	0.669	0.000	0.156	0.117	0.608	0.000
MAXIMUM	0.998	1.413	1107	0.847	0.000	1.018	0.000	0.240	0.209	1.413	0.000
MINIMUM	0.856	0.266	284	0.152	0.000	0.348	0.000	0.008	0.078	0.000	0.000
DAYS	31	31		19	0	21	0	21	13	21	0

McKINLEYVILLE COMMUNITY SERVICES DISTRICT WASTEWATER MANAGEMENT FACILITY EFFLUENT DISCHARGE DISPOSAL

AUGUST 2010

	M-INF	M-001		002	002	004	003	006	005		001
DATE	INFLUENT MGD	EFFLUENT MGD	MAXIMUM GPM	N.POND MGD	S.POND MGD	FISCHER MGD UPPER	FISCHER MGD LOWER	PIALORSI MGD	HILLER MGD	IRRGATE TOTAL MGD	RIVER MGD
1	0.970	0.463	332	0.463						0.000	0.000
2	0.962	0.701	896	0.239		0.371			0.091	0.462	0.000
3	0.946	1.038	1002			0.838		0.200		1.038	0.000
4	0.946	1.038	960			0.787		0.251		1.038	0.000
5	0.948	1.246	1012			0.989		0.257		1.246	0.000
6	0.964	0.917	979	0.262		0.530		0.125		0.655	0.000
7	0.934	0.477	336	0.477						0.000	0.000
8	0.992	0.482	337	0.482						0.000	0.000
9	0.982	0.396	915	0.222		0.110		0.064		0.174	0.000
10	0.942	0.000	0							0.000	0.000
11	0.960	0.629	1356			0.494		0.135		0.629	0.000
12	0.927	1.045	1016			0.805		0.240		1.045	0.000
13	0.894	0.900	1027	0.224		0.538		0.138		0.676	0.000
14	0.888	0.423	299	0.423						0.000	0.000
15	0.936	0.428	303	0.428						0.000	0.000
16	0.932	0.803	990	0.164		0.516		0.123		0.639	0.000
17	0.907	1.176	1001			0.818		0.216	0.142	1.176	0.000
18	0.915	1.183	1102			0.822		0.211	0.150	1.183	0.000
19	0.882	1.195	1128			0.813		0.228	0.154	1.195	0.000
20	0.912	0.955	1105	0.288		0.449		0.132	0.086	0.667	0.000
21	0.921	0.525	369	0.525						0.000	0.000
22	0.966	0.527	370	0.527						0.000	0.000
23	0.925	0.855	1031	0.189		0.454		0.129	0.083	0.666	0.000
24	0.903	1.200	1026			0.797		0.237	0.166	1.200	0.000
25	0.906	1.171	1026			0.784		0.225	0.162	1.171	0.000
26	0.890	1.166	1015			0.794		0.214	0.158	1.166	0.000
27	0.888	0.900	1108	0.254		0.432		0.125	0.089	0.646	0.000
28	0.896	0.457	325	0.457						0.000	0.000
29	0.988	0.472	337	0.472						0.000	0.000
30	0.928	0.810	1076	0.192		0.415		0.123	0.080	0.618	0.000
31	0.879	1.128	1077			0.748		0.214	0.166	1.128	0.000
TOTAL	28.829	24.706		6.288	0.000	13.304	0.000	3.587	1.527	18.418	0.000
AVERAGE	0.930	0.797	802	0.349	0.000	0.634	0.000	0.179	0.127	0.594	0.000
MAXIMUM	0.992	1.246	1356	0.527	0.000	0.989	0.000	0.257	0.166	1.246	0.000
MINIMUM	0.879	0.000	0	0.164	0.000	0.110	0.000	0.064	0.080	0.000	0.000
DAYS	31	30		18	0	21	0	20	12	20	31

SEPTEMBER 2010

M-INF		M-001	002		002	004	003	006	005	001	
DATE	INFLUENT	EFFLUENT	MAXIMUM	N.POND	S.POND	FISCHER	FISCHER	PIALORSI	HILLER	IRRGATE	RIVER
	MGD	MGD	GPM	MGD	MGD	MGD	MGD	MGD	MGD	TOTAL	MGD
						UPPER	LOWER			MGD	
1	0.890	1.092	960			0.710		0.228	0.154	1.092	0.000
2	0.889	1.086	940			0.695		0.225	0.166	1.086	0.000
3	0.877	0.893	1051	0.310		0.365		0.132	0.086	0.583	0.000
4	0.860	0.496	349	0.496						0.000	0.000
5	0.857	0.507	357	0.507						0.000	0.000
6	0.947	0.509	358	0.509						0.000	0.000
7	0.887	0.830	1076	0.257		0.369		0.120	0.084	0.573	0.000
8	0.888	1.276	1076			0.894		0.222	0.160	1.276	0.000
9	0.892	1.268	1071			0.897		0.217	0.154	1.268	0.000
10	0.876	0.974	1109	0.340		0.413		0.135	0.086	0.634	0.000
11	0.893	0.436	310	0.436						0.000	0.000
12	0.964	0.451	318	0.451						0.000	0.000
13	0.901	0.852	1168	0.244		0.401		0.123	0.084	0.608	0.000
14	0.876	1.253	1158			0.889		0.222	0.142	1.253	0.000
15	0.885	1.262	1082			0.912		0.202	0.148	1.262	0.000
16	0.881	1.264	1085			0.880		0.228	0.156	1.264	0.000
17	0.874	1.000	1220	0.436		0.360		0.125	0.079	0.564	0.000
18	0.942	0.559	393	0.559						0.000	0.000
19	1.040	0.560	393	0.560						0.000	0.000
20	0.939	0.992	1311	0.302		0.471		0.129	0.090	0.690	0.000
21	0.836	1.419	1227			1.061		0.198	0.160	1.419	0.000
22	0.842	1.441	1215			1.038		0.249	0.154	1.441	0.000
23	0.856	1.441	1211			1.032		0.243	0.166	1.441	0.000
24	0.822	1.129	1295	0.292		0.616		0.129	0.092	0.837	0.000
25	0.860	0.532	374	0.532						0.000	0.000
26	0.900	0.539	377	0.539						0.000	0.000
27	0.854	0.979	1229	0.192		0.557		0.135	0.095	0.787	0.000
28	0.832	1.116	1265			0.825		0.171	0.120	1.116	0.000
29	0.832	1.457	1345			1.041		0.246	0.170	1.457	0.000
30	0.842	1.361	1041			0.948		0.251	0.162	1.361	0.000
TOTAL	26.534	28.974		6.962	0.000	15.374	0.000	3.930	2.708	22.012	0.000
AVERAGE	0.884	0.966	912	0.410	0.000	0.732	0.000	0.187	0.129	0.734	0.000
MAXIMUM	1.040	1.457	1345	0.560	0.000	1.061	0.000	0.251	0.170	1.457	0.000
MINIMUM	0.822	0.436	310	0.192	0.000	0.360	0.000	0.120	0.079	0.000	0.000
DAYS	30	30		17	0	21	0	21	21	21	0
DAYS WITH NO DISCHARGE = 0											

McKINLEYVILLE COMMUNITY SERVICES DISTRICT WASTEWATER MANAGEMENT FACILITY EFFLUENT DISCHARGE DISPOSAL

OCTOBER 2010

	M-INF	M-001		002	002	004	003	006	005		001
DATE	INFLUENT MGD	EFFLUENT MGD	MAXIMUM GPM	N.POND MGD	S.POND MGD	FISCHER MGD UPPER	FISCHER MGD LOWER	PIALORSI MGD	HILLER MGD	IRRGATE TOTAL MGD	RIVER MGD
1	0.864	1.030	1049	0.322		0.576		0.132		0.708	0.000
2	0.927	0.587	413	0.587						0.000	0.000
3	1.007	0.596	418	0.596						0.000	0.000
4	0.924	1.120	1223	0.232		0.666		0.126	0.096	0.888	0.000
5	0.890	1.431	1176			1.052		0.237	0.142	1.431	0.000
6	0.901	1.417	1168			1.038		0.231	0.148	1.417	0.000
7	0.896	1.444	1243			1.065		0.225	0.154	1.444	0.000
8	0.882	1.128	423	0.330		0.574		0.135	0.089	0.798	0.000
9	0.891	0.572	403	0.572						0.000	0.000
10	0.956	0.573	402	0.573						0.000	0.000
11	0.917	0.576	404	0.576						0.000	0.000
12	0.879	0.985	1287	0.218		0.568		0.134	0.065	0.767	0.000
13	0.887	1.426	1281			1.036		0.248	0.142	1.426	0.000
14	0.882	1.463	1260			1.105		0.210	0.148	1.463	0.000
15	0.883	1.171	1169	0.329		0.628		0.128	0.086	0.842	0.000
16	0.919	0.603	422	0.603						0.000	0.000
17	0.990	0.606	423	0.606						0.000	0.000
18	0.929	1.006	1177	0.228		0.562		0.132	0.084	0.778	0.000
19	0.917	1.428	1179			1.033		0.251	0.144	1.428	0.000
20	0.918	1.411	1207			1.126		0.117	0.168	1.411	0.000
21	0.910	1.315	1200			1.133			0.182	1.315	0.000
22	0.887	1.012	1168	0.282		0.626			0.104	0.730	0.000
23	0.940	0.530	376	0.530						0.000	0.000
24	1.275	0.529	376	0.529						0.000	0.000
25	1.036	0.823	928	0.203		0.620				0.620	0.000
26	0.955	1.135	937			1.135				1.135	0.000
27	0.965	1.321	1353			1.123		0.111	0.087	1.321	0.000
28	1.014	1.274	1233			1.102		0.102	0.070	1.274	0.000
29	0.991	1.015	894	0.419		0.596				0.596	0.000
30	1.012	0.851	594	0.851						0.000	0.000
31	1.039	0.846	591	0.846						0.000	0.000
TOTAL	29.283	31.224		9.432	0.000	17.364	0.000	2.519	1.909	21.792	0.000
AVERAGE	0.945	1.007	883	0.472	0.000	0.868	0.000	0.168	0.119	0.703	0.000
MAXIMUM	1.275	1.463	1353	0.851	0.000	1.135	0.000	0.251	0.182	1.463	0.000
MINIMUM	0.864	0.529	376	0.203	0.000	0.562	0.000	0.102	0.065	0.000	0.000
DAYS	31	31		20	0	20	0	15	16	20	0

McKINLEYVILLE COMMUNITY SERVICES DISTRICT WASTEWATER MANAGEMENT FACILITY EFFLUENT DISCHARGE DISPOSAL

NOVEMBER 2010

M-INF		M-001	002		002	004	003	006	005	001	
DATE	INFLUENT MGD	EFFLUENT MGD	MAXIMUM GPM	N.POND MGD	S.POND MGD	FISCHER MGD UPPER	FISCHER MGD LOWER	PIALORSI MGD	HILLER MGD	IRRGATE TOTAL MGD	RIVER MGD
1	0.971	1.180	1132	0.319		0.555		0.189	0.117	0.861	0.000
2	0.936	1.423	1090			0.959		0.277	0.187	1.423	0.000
3	0.949	1.399	1096			0.935		0.284	0.180	1.399	0.000
4	0.950	1.338	1020			0.883		0.283	0.172	1.338	0.000
5	0.941	0.921	919	0.267		0.436		0.139	0.079	0.654	0.000
6	0.996	0.484	342	0.484						0.000	0.000
7	1.193	0.475	339	0.475						0.000	0.000
8	1.077	1.033	1014	0.198		0.567		0.156	0.112	0.835	0.000
9	1.008	1.428	1016			0.974		0.277	0.177	1.428	0.000
10	1.062	1.423	1083			0.956		0.284	0.183	1.423	0.000
11	1.064	1.392	999			0.928		0.279	0.185	1.392	0.000
12	0.999	1.005	1030	0.406		0.366		0.141	0.092	0.599	0.000
13	1.042	0.762	552	0.762						0.000	0.000
14	1.087	0.821	586	0.821						0.000	0.000
15	1.000	1.199	1114	0.325		0.567		0.203	0.104	0.874	0.000
16	0.980	1.411	999			0.957		0.303	0.151	1.411	0.000
17	0.982	1.414	1004			0.980		0.290	0.144	1.414	0.000
18	0.997	0.930	1002			0.769		0.083	0.078	0.930	0.000
19	0.990	0.726	843	0.330		0.396				0.396	0.000
20	1.114	0.633	459	0.633						0.000	0.000
21	1.137	0.690	502	0.690						0.000	0.000
22	1.179	1.019	948	0.264		0.572		0.183		0.755	0.000
23	1.183	1.182	829			1.182				1.182	0.000
24	1.130	1.188	832			1.188				1.188	0.000
25	1.101	1.198	839			1.198				1.198	0.000
26	1.023	1.195	869	0.599		0.596				0.596	0.000
27	1.169	1.243	869	1.243						0.000	0.000
28	1.196	1.239	869	1.239						0.000	0.000
29	1.100	1.250	895	0.469		0.673			0.108	0.781	0.000
30	1.070	1.216	897			1.109			0.107	1.216	0.000
TOTAL	31.626	32.817		9.524	0.000	17.746	0.000	3.371	2.176	23.293	0.000
AVERAGE	1.054	1.094	866	0.560	0.000	0.807	0.000	0.225	0.136	0.776	0.000
MAXIMUM	1.196	1.428	1132	1.243	0.000	1.198	0.000	0.303	0.187	1.428	0.000
MINIMUM	0.936	0.475	339	0.198	0.000	0.366	0.000	0.083	0.078	0.000	0.000
DAYS	30	30		17	0	22	0	15	16	30	0
DAYS WITH NO DISCHARGE = 0											

McKINLEYVILLE COMMUNITY SERVICES DISTRICT WASTEWATER MANAGEMENT FACILITY EFFLUENT DISCHARGE DISPOSAL

DECEMBER 2010

[illegible]

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY
MONITORING DATA

MONTH: JANUARY

YEAR: 2010

DATE	INFLUENT FLOW MG.D	EFFLUENT FLOW MG.D	EFFLUENT MAXIMUM GPM	RIVER CRS	INFLUENT MONITORING		pH	(C°)	B.O.D. mg/L	NFR mg/L	EFFLUENT MONITORING			SETTLABLE SOLIDS	3X5 TOTAL COLIFORM
					B.O.D. mg/L	N.F.R. mg/L					AMMONIA	Cl ₂ RES.	Cl ₂ RES.		
1	1.337	1.020	723	2630			7.0	11.3				1.7	0.0		
2	1.144	1.017	717	7510			7.0	11.6				1.1	0.0		
3	1.165	1.027	722	4670			7.2	10.6				4.0	0.0		
4	1.065	1.096	873	3710			6.7	10.5			26	3.2	0.0		<2
5	1.005	1.292	941	3200			6.8	11.1			28	1.5	0.0		
6	1.090	1.342	941	715			6.6	11.3			26	1.6	0.0		
7	1.081	1.205	952	931			7.1	11.6			30	1.8	0.0		
8	1.027	0.971	723	661	300	200	6.9	11.9	37	36	30	6.2	0.0	<0.1	
9	1.063	0.976	909	672			6.9	12.1				1.4	0.0		
10	1.117	1.261	889	640			6.9	11.8				1.8	0.0		
11	1.047	1.256	885	510			7.0	13.0			30	3.6	0.0		<2
12	1.200	1.332	982	611			6.9	13.1			24	3.5	0.0		
13	1.193	1.377	968	4370			6.9	13.5			28	3.2	0.0		
14	1.111	1.246	970	3080			6.9	12.3			28	3.3	0.0		
15	1.084	1.092	766	1950	270	260	7.0	13.1	48	52	32	3.2	0.0	<0.1	
16	1.112	1.156	847	1470			6.9	12.5				3.5	0.0		
17	1.125	1.212	850	1220			7.2	11.8				2.7	0.0		
18	1.213	1.278	935	1450			7.0	12.1			28	3.3	0.0		<2
19	1.313	1.431	1060	5730			7	11.9			28	3.5	0.0		
20	1.298	1.526	1098	7440			6.9	11.4			28	2.3	0.0		
21	1.300	1.487	1227	7880			6.9	11.8			26	2.5	0.0		
22	1.223	1.025	1094	5600	300	270	7.1	12.4	45	67	30	3.1	0.0	<0.1	
23	1.261	1.584	1114	4050			7.2	10.1				2.9	0.0		
24	1.303	1.610	1136	3250			7.2	10.3				2.9	0.0		
25	1.258	1.605	1128	3800			6.9	10.4			28	2.6	0.0		<2
26	1.350	1.571	1118	7500			7.2	10.3			24	2.8	0.0		
27	1.262	1.580	1129	6120			7	10.7			26	3.2	0.0		
28	1.191	1.244	1135	4120			7.0	11.5			30	1.2	0.0		
29	1.149	1.080	892	3270	250	340	6.9	11.0	23	31	32	3.9	0.0	<0.1	
30	1.274	1.483	1203	2870			6.9	11.1				1.0	0.0		
31	1.281	1.719	1207	2920			6.8	10.9				1.5	0.0		

MONTHLY TESTS

DATE	TDS	AMMONIA	NITRATE	BORON
1/7/2010	260	28.0	ND	260

SPILLS:

None to report

30 DAY AVERAGE

BOD mg/L	BOD LBS/DAY	BOD % Removal	NFR mg/L	NFR LBS/DAY	NFR % Removal
38	332	86	47	404	82

DATE	Copper	14
1/3/2010	Lead	ND
	Bis phthalate	3
	aliph-BHC	ND
	4,4' -DDT	ND
	2,3,7,8-TCDD	ND

Quarterly Tests		Value in ug/l
Dichlorobromomethane	Bromotom	0.1
Chlorodibromomethane		ND
Chlorotom		1.2

ACUTE TOXICITY	
DATE	% Survival
Rainbow Trout 1/5/2010	100%
C. dubia	N/A
Indicates Permit Exceedance	

CHRONIC TOXICITY	
TESTED	SURVIVAL
Minnow	N/A
C. Dubia	N/A
Algae	N/A
TUC	

SIGNATURE: _____

REMARKS:

Total Coliform Monthly MEDIAN	<2
Daily Maximum	<2

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY
MONITORING DATA

MONTH: FEBRUARY

YEAR: 2010

DATE	INFLUENT FLOW MG.D.	EFFLUENT FLOW MG.D.	EFFLUENT MAXIMUM GPM	RIVER CFS	INFLUENT MONITORING		EFFLUENT MONITORING							3X5 TOTAL COLIFORM	
					B.O.D. mg/L	N.F.R. mg/L	pH	(C°) TEMP	B.O.D. mg/L	NFR mg/L	AMMONIA	CL ₂ RES.	RIVER CL ₂ RES		SETTLABLE SOLIDS
1	1.172	1.638	1210	2450			7.0	11.7				30	2.6	0.0	<2
2	1.166	1.564	1097	2420			6.8	11.9				30	1.6	0.0	
3	1.182	1.561	1095	2850			6.9	11.9				30	2.1	0.0	
4	1.157	1.337	1088	2930			6.8	11.9				28	1.6	0.0	
5	1.178	1.086	768	5200	320	220	6.9	11.4	23	39		30	3.2	0.0	<0.1
6	1.232	1.357	1071	4260			6.8	12.6					3.4	0.0	
7	1.281	1.533	1072	4030			6.8	13.1					2.4	0.0	
8	1.163	0.956	1070	3200			6.9	11.8				28	2.1	0.0	<2
9	1.130	0.000	0	2660			No Discharge Due to CCB Washdown								
10	1.121	1.068	1097	2210			7.2	11.4				32	1.4	0.0	
11	1.120	1.380	1100	2010			6.8	11.8				28	1.5	0.0	
12	1.135	1.171	822	2210	200	180	7.2	11	17	26		32	2.7	0.0	<0.1
13	1.157	1.391	1101	2060			6.8	11.7					1.6	0.0	
14	0.710	1.569	1101	1970			6.8	12.9					1.2	0.0	
15	1.215	1.568	1121	2420			6.8	12.0					2.5	0.0	
16	1.132	1.573	1106	2100			7.0	14.4				32	4.6	0.0	<2
17	1.107	1.578	1119	1930			7.1	12.9				32	0.1	0.0	
18	1.086	1.329	1109	1750			6.9	12.9				30	0.5	0.0	
19	1.074	1.139	802	1610	260	350	6.8	12.7	21	25		32	1.1	0.0	<0.1
20	1.102	1.140	804	1470			6.5	12.2					2.4	0.0	
21	1.102	1.141	800	1360			6.8	12.0					1.7	0.0	
22	1.067	1.142	799	1260			6.6	12.0				38	2.2	0.0	<2
23	1.105	1.140	800	1130			6.7	11.9				28	0.8	0.0	
24	1.134	1.133	797	200			6.7	12.5				30	1.9	0.0	
25	1.097	1.132	793	2360			6.7	12.9				30	2.6	0.0	
26	1.326	1.118	790	2180	240	120	6.8	13.7	32	23		32	1.9	0.0	<0.1
27	1.297	1.388	1098	8520			6.9	12.1					2.8	0.0	
28	1.287	1.583	1112	5160			6.9	11.8					0.2	0.0	
		</													

MONTHLY TESTS			
DATE	TDS	AMMONIA	NITRATE
2/8/2010	93	25.0	ND
			BORON
			240

DATE	Copper	17
	Lead	ND
	Bis phthalate	3
	aliph-BHC	ND
	4,4' -DDT	0.53
	2,3,7,8-TCDD	ND

Quarterly Tests		Value in ug/l
Dichlorobromomethane		
Bromotom		
Chlorodibromomethane		
Chlorotom		

SPILLS:				
None to report				
BOD		BOD	BOD	NFR
mg/L		LBS/DAY	% Removal	LBS/DAY
30 DAY AVERAGE		23	218	91
				28
				265
				85

ACUTE TOXICITY	
DATE	% Survival
2/3/2010	100%

CHRONIC TOXICITY			
TESTED	SURVIVAL		
Minnow	2		
C. Dubia	1		
Algae	1		
TUC			

SIGNATURE: _____

REMARKS: 2/9/2010 No Discharge Due to CCB Washdown

Total Coliform	
Monthly	
MEDIAN	<2
Daily	
Maximum	<2

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY
MONITORING DATA

MONTH: MARCH

YEAR: 2010

DATE	INFLUENT FLOW MGD	EFFLUENT FLOW MGD	EFFLUENT MAXIMUM GPM	RIVER CFS	INFLUENT MONITORING		EFFLUENT MONITORING				RIVER		SETTLABLE SOLIDS	3X5 TOTAL COLIFORM
					B.O.D. mg/L	N.F.R. mg/L	pH	(C°) TEMP	B.O.D. mg/L	NFR mg/L	AMMONIA	Cl ₂ RES.	Cl ₂ RES.	
1	1.174	1.595	1115	3600			6.7	13			32	1.1	0.0	
2	1.251	1.582	1113	2980			6.6	13.4			32	0.5	0.0	<2
3	1.349	1.568	1087	4240			6.6	12.1			30	1.7	0.0	
4	1.230	1.361	1102	3010			6.5	11.1			30	0.5	0.0	
5	1.192	1.150	806	2300	190	170	6.5	11.7	25	28	30	1.6	0.0	<0.1
6	1.217	1.410	1079	1920			6.7	11.4			30	2.4	0.0	
7	1.243	1.542	1082	1690			6.7	12.1			30	0.5	0.0	
8	1.210	1.548	1084	1570			6.8	12.6			30	0.8	0.0	<2
9	1.186	1.556	1090	1530			6.7	11.2			28	0.6	0.0	
10	1.215	1.415	1088	1670			6.6	11.5			30	2.3	0.0	
11	1.178	1.153	808	1570			6.7	11.8			28	3.6	0.0	
12	1.374	1.146	808	1420	210	150	6.7	12.4	23	23	30	3.1	0.0	<0.1
13	1.315	0.910	804	4890			6.8	11.9				2.3	0.0	
14	1.346	1.137	1092	3220			6.9	9.3				1.4	0.0	
15	1.346	1.137	1092	2550			6.7	10.8			30	1.4	0.0	<2
16	1.156	1.500	1095	2200			6.8	12.2			28	0.4	0.0	
17	1.195	1.569	1101	1830			6.8	11.5			28	0.4	0.0	
18	1.160	1.444	1100	1640			6.7	12.2			28	0.1	0.0	
19	1.130	1.148	803	1440	210	180	7	13.2	31	30	22	0.5	0.0	<0.1
20	1.143	1.148	809	1140			6.8	12.7				0.1	0.0	
21	1.216	1.143	803	1160			6.7	13.2				0.1	0.0	
22	1.145	1.139	798	1160			6.8	14.0			30	0.9	0.0	<2
23	1.111	1.141	799	1020			7.0	14.0			30	1.4	0.0	
24	1.131	1.111	786	931			6.8	13.7			28	1.3	0.0	
25	1.238	1.100	772	1060			6.7	13.6			28	2.4	0.0	
26	1.186	1.092	768	1990	220	160	6.7	12.6	16	21	24	2.2	0.0	<0.1
27	1.213	1.094	768	1420			6.5	13				2.3	0.0	
28	1.248	1.095	768	1240			6.6	13.3				2.1	0.0	
29	1.209	1.325	1095	1160			6.6	14.1			28	2.1	0.0	<2
30	1.306	1.544	1093	2740			6.6	12.8			28	1.6	0.0	
31	1.387	1.529	1079	4220			6.8	12.8			28	2.3	0.0	

MONTHLY TESTS

DATE	TDS	AMMONIA	NITRATE	BORON
3/8/2010	240	28.0	ND	230

SPLLS:

None to report			
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BOD mg/L	BOD LBS/DAY	BOD % Removal	NFR mg/L	NFR LBS/DAY	NFR % Removal
24	226	88	26	242	85

30 DAY AVERAGE

3/9/2010	Copper	16.1
	Lead	0.2
	Bis phthalate	2
	aliph-BHC	ND
	4,4'-DDT	0.262
	2,3,7,8-TCDD	ND

Quarterly Tests		Value in ug/l
	Dichlorobromomethane	N/A
	Bromofom	N/A
	Chlorodibromomethane	N/A
	Chlorofom	N/A

ACUTE TOXICITY	
DATE	% Survival
3/9/2010	95%
Rainbow Trout	
C. dubia	
N/A	N/A

CHRONIC TOXICITY	
TESTED	SURVIVAL
Minnow	N/A
C. Dubia	N/A
Algae	N/A
TUC	

SIGNATURE: _____

REMARKS:

Indicates Permit Exceedance

Total Coliform	Monthly
	MEDIAN
	<2
	Daily
	Maximum
	<2

DATE	INFLUENT FLOW M.G.D.	EFFLUENT FLOW M.G.D.	EFFLUENT MAXIMUM GPM	RIVER CFS	INFLUENT MONITORING		EFFLUENT MONITORING							SETTLABLE SOLIDS	3X5 TOTAL COLIFORM
					B.O.D. mg/L	N.F.R. mg/L	pH	(C°) TEMP	B.O.D. mg/L	NFR mg/L	AMMONIA	Cl ₂ RES.	RIVER Cl ₂ RES		
1	1,284	1,383	1082				6.7	11.4			28	2.3			
2	1,326	1,247	877		180	120	6.7	13.7	24		27	24	4.3	<0.1	
3	1,352	1,447	1104				6.8	13.1					3.8		
4	1,398	1,534	1142				6.7	13.5					1.7		
5	1,427	1,584	1110				6.7	10.2			28	2.6		2	
6	1,313	1,585	1109				6.8	12			24	3			
7	1,280	1,591	1113				6.8	11.9			18	1.7			
8	1,222	1,378	1113				7.0	12.5			24	0.4			
9	1,212	1,219	853		250	360	6.9	12.1	22	33	28	2.5		<0.1	
10	1,218	1,219	852				6.7	13.2				2.1			
11	1,287	1,220	853				6.7	13.2				1.3		<2	
12	1,219	1,218	854				6.6	12.6			28	1.3			
13	1,278	1,203	854				6.7	13.1			30	1.3			
14	1,248	1,200	840				6.8	13.0			28	0.6			
15	1,200	1,200	847				6.6	12.9			28	2.8			
16	1,148	1,200	840		210	160	6.6	12.9	20	23	28	2.2		<0.1	
17	1,163	1,317	1001				6.6	14.3				1.3			
18	1,207	1,436	1007				6.9	15.3				0.2			
19	1,137	0.844	1005				6.6	14.6			30	0.2		23	
20	1,259	0.000	0		flow shut down for CCB wash down										
21	1,224	0.837	973				6.7	13.1			28	4.8			
22	1,179	1,113	909				6.7	12.7			30	3.2			
23	1,131	0.953	767		170	110	6.7	13.0	15	23	26	2.8		<0.1	
24	1,134	1,348	1067				6.6	13.4				2.7			
25	1,194	1,520	1070				6.7	13.3				1.7			
26	1,159	1,511	1073				6.7	13.8			32	1.3		<2	
27	1,546	1,476	1055				6.6	14			28	0.1			
28	1,596	1,451	1019				6.7	13.2			28	1.2			
29	1,438	1,579	1168				6.8	13.0			30	3.7			
30	1,325	1,680	1176		180	160	6.7	13.2	17	28	28	1.2		<0.1	

MONTHLY TESTS

DATE	TDS	AMMONIA	NITRATE	BORON
4/14/2010	250	20.0	ND	210

SPLLS:

None to report				
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BOD	BOD	BOD	NFR	NFR
mg/L	LBS/DAY	% Removal	mg/L	LBS/DAY
20	206	90	27	284
30 DAY AVERAGE				83

ACUTE TOXICITY

DATE	% Survival
4/13/2010	100%
Rainbow Trout	
C. dubia	
N/A	N/A

Quaterly Tests		Value in ug/l
Dichlorobromomethane		ND
Bromotom		ND
Chlorodibromomethane		ND
Chlorotom		1.2

Copper		14
Lead		ND
Bis phthalate		2
aliph-BHC		ND
4,4' -DDT		ND
2,3,7,8-TCDD		ND

SIGNATURE: _____

REMARKS:



Indicates Permit Exceedance

CHRONIC TOXICITY	
TESTED	SURVIVAL
Minnow	N/A
C. Dubia	N/A
Algae	N/A
TUC	

Total Coliform	
Monthly	
MEDIAN	2
Daily	
Maximum	23

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY
MONITORING DATA

MONTH: May

YEAR: 2010

DATE	INFLUENT FLOW M.G.D.	EFFLUENT FLOW M.G.D.	EFFLUENT MAXIMUM GPM	RIVER CFS	INFLUENT MONITORING		EFFLUENT MONITORING							3X5 TOTAL COLIFORM	
					B.O.D. mg/L	N.F.R. mg/L	pH	(C°) TEMP	B.O.D. mg/L	NFR mg/L	AMMONIA	CL ₂ RES.	RIVER CL ₂ RES		SETTLABLE SOLIDS
1	1,324	1,686	1179	3820			6.4	14				1.0	0.0		
2	1,352	1,684	1179	3150			6.8	14.7				0.6	0.0		
3	1,258	1,703	1193	2640			6.8	14.5			30	0.1	0.0	≥1600	
4	1,224	1,716	1202	2160			6.7	14.3			26	0.1	0.0		
5	1,205	1,712	1203	1970			6.7	14.3			26	0.1	0.0		
6	1,191	1,557	1195	1740			6.7	14.7			24	0.2	0.0		
7	1,168	1,557	934	1670	200	150	6.7	14.7	22	33	26	2.2	0.0	<0.1	
8	1,165	1,331	932	1530			6.7	15.2				1.5	0.0		
9	1,182	1,330	930	1450			6.7	15.7				0.3	0.0		
10	1,218	1,325	931	1370			6.6	15.2			28	0.7	0.0	170	
11	1,154	1,302	917	1750			6.7	15.2			26	1.2	0.0		
12	1,166	1,289	902	1570			6.7	15.1			24	0.1	0.0		
13	1,134	1,284	900	1490			6.7	15.5			26	1	0.0		
14	1,121	0,969	896	1420	200	140	6.8	15.9	17	26	30	2.8	0.0	<0.1	
15	1,134	0,495	349												
16	1,181	0,503	353												
17	1,118	0,930	1181				6.8	15.3			32	2.1		13	
18	1,090	1,495	1182				6.9	15.1			28	0.2			
19	1,083	1,495	1183				6.8	15.5			30	4.3			
20	1,052	1,396	1015				6.7	16.1			30	10.7			
21	1,068	1,123	1020		240	160	7.1	15.7	19	29	30	7.5		<0.1	
22	1,101	0,647	462												
23	1,136	0,638	461												
24	1,071	0,889	1045				6.9	15.3			28	2.5		<2	
25	1,086	1,071	940				6.8	16.5			28	3.6			
26	1,130	1,117	948				6.8	15.8			30	2			
27	1,151	1,084	1005				6.9	15.6			30	2.3			
28	1,131	1,329	1040		190	110	6.9	15.9	6.2	23	30	2.2		<0.1	
29	1,066	1,223	929									4.0			
30	1,062	1,282	940									4.6			
31	1,131	1,221	854									3.2			

MONTHLY TESTS

DATE	TDS	AMMONIA	NITRATE	BORON
5/5/2010	220	16.0	ND	190

SPLLS:

None to report			
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BOD	BOD	BOD	NFR	NFR	NFR
mg/L	LBS/DAY	% Removal	mg/L	LBS/DAY	% Removal
16	167	92	28	291	80

30 DAY AVERAGE

5/6/2010	Copper	13
	Lead	ND
	Bis phthalate	4
	aliph-BHC	ND
	4,4' -DDT	ND
	2,3,7,8-TCDD Equivalents	ND

Quarterly Tests		Value in ug/l
Dichlorobromomethane		N/A
Bromotom		N/A
Chlorodibromomethane		N/A
Chlorotom		N/A

ACUTE TOXICITY	
DATE	% Survival
5/4/2010	100%
Rainbow Trout	
C. dubia	
N/A	N/A

SIGNATURE: _____

REMARKS: 5/14/2010 Discharge to Mad River ended at approximately 15:00

CHRONIC TOXICITY	
TESTED	SURVIVAL
Minnow	N/A
C. Dubia	N/A
Algae	N/A
TLC	

Total Coliform	
Monthly	
MEDIAN	91
Daily	
Maximum	≥1600

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY
MONITORING DATA

MONTH: JUNE

YEAR: 2010

DATE	INFLUENT FLOW MG.D.	EFFLUENT FLOW MG.D.	EFFLUENT MAXIMUM GPM	RIVER CFS	INFLUENT MONITORING		EFFLUENT MONITORING							3X5 TOTAL COLIFORM		
					B.O.D. mg/L	N.F.R. mg/L	pH	(C°) TEMP	B.O.D. mg/L	NFR mg/L	AMMONIA	Cl ₂ RES.	RIVER Cl ₂ RES		SETTLABLE SOLIDS	
1	1.066	1.116	893				7.0	18.2				28	3.3			4
2	1.152	1.126	1064				7.0	18.8				28	2.9			
3	1.270	1.284	1116				6.8	18.1				28	2.6			
4	1.411	1.125	1124		180	130	6.6	17.8	16	29	28	2.7			<0.1	
5	1.283	0.506	358													
6	1.319	0.505	354													
7	1.239	0.911	1126				6.9	16.8				24	1.4			<2
8	1.201	1.315	1123				6.7	17.3				28	0.2			
9	1.195	1.308	1119				6.6	17.8				28	0.4			
10	1.182	1.276	1080				6.8	16.9				28	1.2			
11	1.152	1.026	1087		210	170	6.7	17.0	23	31	30	1.5			<0.1	
12	1.135	0.566	399													
13	1.174	0.564	397													
14	1.134	1.264	1254				6.7	17.3				26	4.7			2.0
15	1.111	1.827	1290				6.7	17.2				24	1.3			
16	1.095	1.807	1287				6.7	16.8				28	1.0			
17	1.087	1.786	1255				6.8	17.1				22	2.5			
18	1.073	1.159	1236		230	180	6.6	17.6	25	26	30	6.8			<0.1	
19	1.031	0.569	400													
20	1.095	0.570	399													
21	1.067	1.318	1271				6.7	17.2				26	7.5			<2
22	1.047	1.386	1260				6.6	18.3				26	6.0			
23	1.020	1.272	1179				5.6	17.7				28	4.8			
24	1.007	1.506	1115				6.7	17.6				26	3.9			
25	0.977	0.981	1021		250	220	6.8	17.5	32	26	28	5.4			<0.1	
26	0.988	0.574	403													
27	1.027	0.564	398													
28	1.006	0.882	1071				6.7	16.4				24	2.4			2
29	0.981	1.496	1070				6.6	16.7				26	0.2			
30	0.975	1.228	1059				6.5	17.4				26	4.1			

MONTHLY TESTS

DATE	TDS	AMMONIA	NITRATE	BORON
6/8/2010	260	22.0	ND	210

SPILLS:

None to report

30 DAY AVERAGE					
mg/L	LBS/DAY	% Removal	mg/L	LBS/DAY	% Removal
24	213	89	28	250	83

DATE	Copper	Lead	Bis phthalate	aliph-BHC	4,4' -DDT	2,3,7,8-TCDD
N/A						

Quarterly Tests		Value in ug/l
Dichlorobromomethane		N/A
Bromofom		N/A
Chlorodibromomethane		N/A
Chlorofom		N/A

ACUTE TOXICITY		
DATE	% Survival	
N/A		

Rainbow Trout	N/A
C. dubia	N/A

TESTED	SURVIVAL
Minnow	N/A
C. Dubia	N/A
Algae	N/A
	TUc

SIGNATURE: _____

REMARKS:

Indicates Permit Exceedance

Total Coliform	
Monthly	
MEDIAN	2
Daily	
Maximum	4

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY
MONITORING DATA

MONTH: JULY

YEAR: 2010

DATE	INFLUENT FLOW M.G.D.	EFFLUENT FLOW M.G.D.	EFFLUENT MAXIMUM GPM	RIVER CFS	INFLUENT MONITORING		EFFLUENT MONITORING								SETTLABLE SOLIDS	3X5 TOTAL COLIFORM
					B.O.D. mg/L	N.F.R. mg/L	pH	TEMP (C°)	B.O.D. mg/L	NFR mg/L	AMMONIA	CL ₂ RES.	RIVER CL ₂ RES			
1	0.981	1.413	1027				6.5	17.3			26	3.1				
2	0.957	0.952	1000		240	160	6.8	17.9	32	38	28	0.9		<0.1		
3	0.926	0.497	465													
4	0.907	0.642	467													
5	0.998	0.670	469													
6	0.956	1.101	1071				6.6	16.5			22	1.9			<2	
7	0.966	1.265	1071				6.6	17.3			24	1.4				
8	0.951	1.274	1066				6.6	17.3			22	2.1				
9	0.929	1.070	1060		240	170	6.5	17.5	37	27		2.2		<0.1		
10	0.938	0.847	690													
11	0.968	0.822	690													
12	0.963	0.813	1050				6.5	17.5				2.3		23		
13	0.947	1.175	1091				6.5	17.4				0.2				
14	0.924	1.008	1107				6.5	17.3			20	7.9				
15	0.903	1.127	1061				6.5	17.6			20	4.4				
16	0.923	0.800	777		270	230	6.4	17.6	40	23	22	5.2		<0.1		
17	0.918	0.445	316													
18	0.961	0.457	322													
19	0.938	0.767	969				6.6	16.9			22	4.3		17		
20	0.913	1.105	953				6.5	17.2			22	2.5				
21	0.923	1.064	1001				6.7	16.8			20	2.0				
22	0.895	1.002	959				6.7	17.3			26	3.2				
23	0.900	0.787	921		320	180	6.4	17.0	23	46	24	4.6		<0.1		
24	0.856	0.266	284													
25	0.973	0.289	298													
26	0.924	0.759	1021				6.6	16.3			20	1.9		2		
27	0.916	1.061	1013				6.4	17.4			24	3.7				
28	0.910	1.049	1015				6.6	16.4			24	6.1				
29	0.898	1.057	1036				6.6	18.6			30	3.6				
30	0.890	0.840	984		200	180	7.0	16.2	27	30	22	3.2		<0.1		
31	0.872	0.466	337													

MONTHLY TESTS

DATE	TDS	AMMONIA	NITRATE	BORON
7/20/2010	300	17.0	ND	250

SPILLS:

None to report				
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30 DAY AVERAGE					NFR		
BOD mg/L	BOD LBS/DAY	BOD % Removal	NFR mg/L	NFR LBS/DAY	% Removal		
32	234	87	32	227	83		

DATE	Copper	Lead	Bis phthalate	aliph-BHC	4,4' -DDT	2,3,7,8-TCDD
N/A						

Quarterly Tests		Value in ug/l
Dichlorobromomethane	Bromotom	ND
Chlorodibromomethane	Chlorotom	ND
		2

ACUTE TOXICITY

DATE	% Survival
N/A	

Rainbow Trout
C. dubia

SIGNATURE: _____

REMARKS:

Indicates Permit Exceedance

CHRONIC TOXICITY		SURVIVAL	
TESTED		N/A	
Minnow		N/A	
C. Dubia		N/A	
Algae		N/A	
		TUC	

Total Coliform	9.5
Monthly MEDIAN	
Daily Maximum	23

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY
MONITORING DATA

MONTH: AUGUST

YEAR: 2010

DATE	INFLUENT FLOW M.G.D.	EFFLUENT FLOW M.G.D.	EFFLUENT MAXIMUM GPM	RIVER CFS	INFLUENT MONITORING		EFFLUENT MONITORING							SETTLABLE SOLIDS	3X5 TOTAL COLIFORM
					B.O.D. mg/L	N.F.R. mg/L	pH	(C°) TEMP	B.O.D. mg/L	NFR mg/L	AMMONIA	Cl₂ RES.	RIVER Cl₂ RES		
1	0.970	0.463	332				66.4	16.5				24	4.1		<2
2	0.962	0.701	896				6.5	16.8				24	5.1		
3	0.946	1.038	1002				6.4	16.4				28	2.0		
4	0.946	1.038	960				6.6	16.4				28	2		
5	0.948	1.246	1012				6.6	16.4				28	2.5		<0.1
6	0.964	0.917	979		360	350	6.6	16.6	27	18	24				
7	0.934	0.477	336												
8	0.992	0.482	337												
9	0.982	0.396	915				6.4	16.5				24	3.3		<2
10	0.942	0.000	0												
11	0.960	0.629	1356				6.5	16.4				24	0.7		
12	0.927	1.045	1016				6.5	16.4				24	3.4		
13	0.894	0.900	1027		280	220	6.5	16.4	26	20	28	1.8		<0.1	
14	0.888	0.423	299												
15	0.936	0.428	303												
16	0.932	0.803	990				6.7	16.8				22	1.6		<2
17	0.907	1.176	1001				6.8	16.9				26	1.1		
18	0.915	1.183	1102				6.6	17.0				28	2.1		
19	0.882	1.195	1128				6.8	17.4				24	2.8		
20	0.912	0.955	1105		340	280	6.5	17.1	32	22	22	1.4		<0.1	
21	0.921	0.525	369												
22	0.966	0.527	370												
23	0.925	0.855	1031				6.6	16.6				24	5.9		<2
24	0.903	1.200	1026				6.6	17.2				20	4.5		
25	0.906	1.171	1026				6.5	17.3				20	2.9		
26	0.890	1.166	1015				6.6	17.1				20	2.7		
27	0.888	0.900	1108		230	210	6.6	16.7	43	24	18	1.5		<0.1	
28	0.896	0.457	325												
29	0.988	0.472	337												
30	0.928	0.810	1076				6.4	16.5				16	4.9		<2
31	0.879	1.128	1077				6.5	16.3				12	4.2		

SPLLS:

None to report

DATE	TDS	AMMONIA	NITRATE	BORON
8/3/2010	300	18.0	ND	270

MONTHLY TESTS

DATE	Copper		
N/A	Lead		
	Bis phthalate		
	aliph-BHC		
	4,4' -DDT		
	2,3,7,8-TCDD		

Quarterly Tests		Value in ug/l
Dichlorobromomethane	Bromotom	N/A
Chlorodibromomethane	Chlorotom	N/A
		N/A

30 DAY AVERAGE

BOD mg/L	BOD LBS/DAY	BOD % Removal	NFR mg/L	NFR LBS/DAY	NFR % Removal
32	245	89	23	178	91

ACUTE TOXICITY

DATE	% Survival
Rainbow Trout	N/A
C. dubia	N/A

CHRONIC TOXICITY

TESTED	SURVIVAL
Minnow	N/A
C. Dubia	N/A
Algae	N/A
TUC	

SIGNATURE: _____

REMARKS:



Indicates Permit Exceedance

Total Coliform	Monthly	Median	<2
	Daily	Maximum	<2

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY
MONITORING DATA

MONTH: SEPTEMBER

YEAR: 2010

DATE	INFLUENT FLOW M.G.D.	EFFLUENT FLOW M.G.D.	EFFLUENT MAXIMUM GPM	RIVER CFS	INFLUENT MONITORING				EFFLUENT MONITORING						3X5 TOTAL COLIFORM
					B.O.D. mg/L	N.F.R. mg/L	pH	(C°) TEMP	B.O.D. mg/L	NFR mg/L	AMMONIA	CL ₂ RES.	RIVER CL ₂ RES	SETTLABLE SOLIDS	
1	0.890	1.092	960				6.5	16.9			14	2.1			
2	0.889	1.086	940				6.5	17.2			14	1.8			
3	0.877	0.893	1051		250	210	6.5	17.6	27	44	8	0.1		<0.1	
4	0.860	0.496	349												
5	0.857	0.507	357												
6	0.947	0.509	358												
7	0.887	0.830	1076				6.4	15.8			10	8.3			<2
8	0.888	1.276	1076				6.8	16.9			12	0.5			
9	0.892	1.268	1071				6.8	17.1			14	1.5			
10	0.876	0.974	1109		260	260	6.6	17.4	43	26	12	2.5		<0.1	
11	0.893	0.436	310												
12	0.964	0.451	318												
13	0.901	0.852	1168				6.6	15.7			14	8.8			<2
14	0.876	1.253	1158				6.4	15.6			14	4.9			
15	0.885	1.262	1082				6.6	16.3			14	2.2			
16	0.881	1.264	1085				6.6	17.5			12	2.5			
17	0.874	1.000	1220		290	240	6.5	18.0	42	29	20	0.8		<0.1	
18	0.942	0.559	393												
19	1.040	0.560	393												
20	0.939	0.992	1311				6.5	16.5			18	7.4			<2
21	0.836	1.419	1227				6.7	16.5			18	1.2			
22	0.842	1.441	1215				6.7	16.3			16	2.0			
23	0.856	1.441	1211				6.7	16.3			18	3.6			
24	0.822	1.129	1295		220	220	6.8	15.9	41	11	24	4.7		<0.1	
25	0.860	0.532	374												
26	0.900	0.539	377												
27	0.854	0.979	1229				6.7	16.2			24	3.7			<2
28	0.832	1.116	1265				6.9	17.1			24	6.0			
29	0.832	1.457	1345				6.7	16.7			26	3.4			
30	0.842	1.361	1041				6.7	16.7			26	4.2			

MONTHLY TESTS

DATE	TDS	AMMONIA	NITRATE	BORON
9/22/2010	300	7.6	N/D	310

SPILLS:

None to report

30 DAY AVERAGE					
BOD mg/L	BOD LBS/DAY	BOD % Removal	NFR mg/L	NFR LBS/DAY	NFR % Removal
38	333	85	31	269	87

ACUTE TOXICITY

DATE	% Survival
RAINBOW TROUT	N/A
C. dubia	N/A

Quarterly Tests		Value in ug/l
Dichlorobromomethane	Bromotom	N/A
Chlorodibromomethane	Chlorotom	N/A
Chlorotom		N/A

Copper		
Lead		
Bis phthalate		
aliph-BHC		
4,4' -DDT		
2,3,7,8-TCDD		

CHRONIC TOXICITY

TESTED	SURVIVAL
Minnow	N/A
C. Dubia	N/A
Algae	N/A
TUC	

SIGNATURE: _____

REMARKS:

Indicates Permit Exceedance

Total Coliform	
Monthly	N/A
MEDIAN	<2
Daily	
Maximum	<2

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY
MONITORING DATA

MONTH: OCTOBER

YEAR: 2010

DATE	INFLUENT FLOW M.G.D.	EFFLUENT FLOW M.G.D.	EFFLUENT MAXIMUM GPM	RIVER CFS	INFLUENT MONITORING		EFFLUENT MONITORING							3X5 TOTAL COLIFORM	
					B.O.D. mg/L	N.F.R. mg/L	pH	TEMP (C°)	B.O.D. mg/L	NFR mg/L	AMMONIA	CL ₂ RES.	RIVER CL ₂ RES		SETTLABLE SOLIDS
1	0.864	1.030	1049		260	230	6.6	17.3	48	18	26	3.2		<0.1	
2	0.927	0.587	413												
3	1.007	0.596	418				6.6	16.1			24	4.1			<2
4	0.924	1.120	1223				6.9	15.5			24	3.2			
5	0.890	1.431	1176				6.8	15.8			24	3.7			
6	0.901	1.417	1168				6.7	15.4			28	4.3			
7	0.896	1.444	1243				6.7	15.5	30	30	30	4.5		<0.1	
8	0.882	1.128	423		260	220	6.7								
9	0.891	0.572	403												
10	0.956	0.573	402												
11	0.917	0.576	404												
12	0.879	0.985	1287				6.7	14.7			28	5.1			<2
13	0.887	1.426	1281				6.9	14.6			30	3.1			
14	0.882	1.463	1260				6.8	14.7			28	3.0			
15	0.883	1.171	1169		250	220	7.1	15.1	25	47	34	1.8		<0.1	
16	0.919	0.603	422												
17	0.990	0.606	423												
18	0.929	1.006	1177				7.2	14.2			36	6.0			<2
19	0.917	1.428	1179				7	13.5			30	5.2			
20	0.918	1.411	1207				7	13.3			30	3.7			
21	0.910	1.315	1200				7.2	13.8			30	2.9			
22	0.887	1.012	1168		240	270	6.8	15.1	19	23	28	2.5		<0.1	
23	0.940	0.530	376												
24	1.275	0.529	376												
25	1.036	0.823	928				6.9	14.7			28	4.4			<2
26	0.965	1.135	937				6.9	14			30	0.9			
27	0.965	1.321	1353				7.2	12.9			34	3.2			
28	1.014	1.274	1233				7.0	13.6			30	3.5			
29	0.991	1.015	894		220	230			19	33	24	3.6		<0.1	
30	1.012	0.851	594				7.0	13.8							
31	1.039	0.846	591												

MONTHLY TESTS			
DATE	TDS	AMMONIA	NITRATE
10/25/2010	320	18.0	ND
			BORON
			310

DATE	Copper		
N/A	Lead		
	Bis phthalate		
	aliph-BHC		
	4,4' -DDT		
	2,3,7,8-TCDD		

Quarterly Tests		Value in ug/l
Dichlorobromomethane	Bromotom	ND
Chlorodibromomethane	Chlorotom	ND
		1.3

ACUTE TOXICITY	
DATE	% Survival
N/A	
Rainbow Trout	
C. dubia	
N/A	

SPILLS:					
None to report					
BOD	BOD	BOD	NFR	NFR	NFR
mg/L	LBS/DAY	% Removal	mg/L	LBS/DAY	% Removal
28	252	89	30	274	87
30 DAY AVERAGE					

CHRONIC TOXICITY	
TESTED	SURVIVAL
Minnow	N/A
C. Dubia	N/A
Algae	N/A
	TUC

SIGNATURE: _____

REMARKS:

Indicates Permit Exceedance

Total Coliform	
Monthly	
MEDIAN	<2
Daily	
Maximum	<2

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY
MONITORING DATA

MONTH: NOVEMBER

YEAR: 2010

DATE	INFLUENT FLOW M.G.D.	EFFLUENT FLOW M.G.D.	EFFLUENT MAXIMUM GPM	RIVER CFS	INFLUENT MONITORING		EFFLUENT MONITORING							SETTLABLE SOLIDS	3X5 TOTAL COLIFORM
					B.O.D. mg/L	N.F.R. mg/L	pH	(C°) TEMP	B.O.D. mg/L	NFR mg/L	AMMONIA	Cl ₂ RES.	RIVER Cl ₂ RES		
1	0.971	1.180	1132				7.0	14.3				34	3.3		<2
2	0.936	1.423	1090				6.9	14.2				32	2.1		
3	0.949	1.399	1096				7.1	14.4				36	2.1		
4	0.950	1.338	1020				7.1	14.1				32	2.2		
5	0.941	0.921	919		190	230	7.1	14.8	21	41		32	0.1		<0.1
6	0.996	0.484	342												
7	1.193	0.475	339												
8	1.077	1.033	1014				6.9	13.4				36	1.8		<2
9	1.008	1.428	1016				6.9	12.1				34	1.7		
10	1.062	1.423	1083				7.0	12.7				34	2.3		
11	1.064	1.392	999				7.0	12.0				34	1.8		
12	0.999	1.005	1030		240	230	7.1	12.8	25	35		34	2.9		<0.1
13	1.042	0.762	552												
14	1.087	0.821	586												
15	1.000	1.199	1114				6.9	12.7				32	1.9		<1.8
16	0.980	1.411	999				6.9	13.2				30	1.7		
17	0.982	1.414	1004				7.0	12.1				36	2.7		
18	0.997	0.930	1002				7.0	12.0				34	2.0		
19	0.990	0.726	843		190	150	6.9	11.9	19	26		32	3.7		<0.1
20	1.114	0.633	459												
21	1.137	0.690	502												
22	1.179	1.019	948				7.0	10.1				30	4.3		<1.8
23	1.183	1.182	829				6.9	9.9				30	4.7		
24	1.130	1.188	832		210	210	7.0	9.5	24	22		36	4.8		<0.1
25	1.101	1.198	839										3.4		
26	1.023	1.195	869										3.1		
27	1.169	1.243	869												
28	1.196	1.239	869												
29	1.100	1.250	895				6.9	8.7				32	2.6		23
30	1.070	1.216	897				6.9	8.7				36	2.5		

SPILLS:				
None to report				

MONTHLY TESTS			
DATE	TDS	AMMONIA	NITRATE
11/30/2010	280	25.0	ND
			BORON
			270

30 DAY AVERAGE				
BOD mg/L	BOD LBS/DAY	BOD % Removal	NFR mg/L	NFR LBS/DAY
				% Removal

DATE	11/3/2010	Copper		ND
		Lead		ND
		Bis phthalate		DNQ
		aliph-BHC		ND
		4,4' -DDT		ND
		2,3,7,8-TCDD		DNQ

Quarterly Tests		Value in ug/l
Dichlorobromomethane	Bromotom	N/A
Chlorodibromomethane	Chlorotom	N/A

ACUTE TOXICITY	
DATE	% Survival
RAINBOW TROUT	
C. dubia	N/A

CHRONIC TOXICITY	
TESTED	SURVIVAL
Minnow	N/A
C. Dubia	N/A
Algae	N/A
TUC	

SIGNATURE: _____

REMARKS:

Indicates Permit Exceedance

Total Coliform	
Monthly	
MEDIAN	<1.5
Daily	
Maximum	23

McKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY
MONITORING DATA

MONTH: DECEMBER

YEAR: 2010

DATE	INFLUENT FLOW M.G.D.	EFFLUENT FLOW M.G.D.	EFFLUENT MAXIMUM GPM	RIVER CFS	INFLUENT MONITORING		EFFLUENT MONITORING										3X5 TOTAL COLIFORM
					B.O.D. mg/L	N.F.R. mg/L	pH	(C°) TEMP	B.O.D. mg/L	NFR mg/L	AMMONIA	CL ₂ RES.	RIVER CL ₂ RES	SETTLABLE SOLIDS			
1	1.108	1.438	1172	1140			6.8	9.8				34	2.7	0.00			
2	1.247	1.660	1158	3080			6.9	9.9				32	2.9	0.00			
3	1.173	1.540	1162	4810	210	190	7.0	9.7	32		34	30	0.8	0.00	<0.1		
4	1.162	1.538	1078	2980			6.8	10.0					1.9	0.00		<1.8	
5	1.217	1.540	1081	2260			6.9	10					1.6	0.00			
6	1.128	1.536	1082	2320			6.7	10.5				30	0.8	0.00			
7	1.079	1.544	1166	2300			6.7	11.3				34	0.3	0.00			
8	1.106	1.567	1216	1820			6.7	11.2				34	0.6	0.00			
9	1.110	1.559	1226	1880			6.7	11.2				34	0.3	0.00			
10	1.197	1.443	1189	3860	160	140	6.7	11.9	29	37	32	32	1.3	0.00	<0.1		
11	1.214	1.330	934	3180			6.8	12.5					1.3	0.00			
12	1.226	1.331	932	2720			6.7	12.3					0.4	0.00			
13	1.178	0.805	987	2160			6.8	12.7			32	32	1	0.00	<1.8		
14	1.281	0.000	0	4080													
15	1.213	0.677	979	4890			7.0	12.0				32	2.0	0.00			
16	1.177	1.420	1133	3510			6.9	10.4				36	0.3	0.00			
17	1.119	1.424	1133	2630	220	250	6.9	10.2	30	27	30	30	0.4	0.00	<0.1		
18	1.222	1.425	1000	2420			6.7	10.8					1.9	0.00			
19	1.299	1.403	986	5120			6.7	10.4					1.5	0.00			
20	1.387	1.464	1092	7060			6.8	9.7			32	32	4.3	0.00	<1.8		
21	1.297	1.573	1103	6730			7.0	11.7			36	36	1.8	0.00			
22	1.355	1.587	1224	6660	200	170	6.9	10.8	32	30	34	34	2.6	0.00	<0.1		
23	1.270	1.586	1110	4650			7.0	10.1					1.4	0.00			
24	1.259	1.594	1118	3360			6.8	10.5					1.2	0.00			
25	1.230	1.595	1118	2660			6.9	11.0					1.8	0.00			
26	1.329	1.581	1111	4490			6.9	10					4.3	0.00			
27	1.344	1.591	1225	4850			6.9	10			32	32	4.1	0.00	<1.8		
28	1.557	1.322	1212	4870			6.7	9.9			32	32	2.1	0.00			
29	1.748	1.490	1153	31600			7.0	9.4			28	28	4.1	0.00			
30	1.494	1.525	1078	11600	140	120	6.8	8.8	20	29	32	32	0.1	0.00			
31	1.449	1.562	1103	7130			6.9	7.8					0.6	0.00			

SPLLS:

Spill on 12/40/2010 off site Salmon Right of Way

MONTHLY TESTS				ACUTE TOXICITY				CHRONIC TOXICITY			
DATE	TDS	AMMONIA	NITRATE	BORON	DATE	% Survival		TESTED	SURVIVAL		
12/16/2010	250	26.0	0.18	240	12/8/2010	100%		C. Dubia	N/A	N/A	

30 DAY AVERAGE

BOD mg/L	BOD LBS/DAY	BOD % Removal	NFR mg/L	NFR LBS/DAY	NFR % Removal
29	359	85	31	394	81

ACUTE TOXICITY

DATE	% Survival
12/8/2010	100%
N/A	

Rainbow Trout
C. dubia

Quaterly Tests		Value in ug/l
Dichlorobromomethane		N/A
Bromotom		N/A
Chlorodibromomethane		N/A
Chlorotom		N/A

Copper		ND
Lead		ND
Bis phthalate		DNQ
aliph-BHC		ND
4,4' -DDT		ND
2,3,7,8-TCDD		ND

SIGNATURE: _____

REMARKS:

Indicates Permit Exceedance

CHRONIC TOXICITY		TESTED	SURVIVAL
Minnow		N/A	N/A
C. Dubia		N/A	N/A
Algae		N/A	N/A
TUC			

Total Coliform	
Monthly MEDIAN	<1.8
Daily Maximum	<1.8

McKinleyville Community Services District
Wastewater Management Facility
Influent & Effluent Testing pH, Temperature, Ammonia, CL₂/Res, Settleable Solids, BOD, NFR = pH, mg/L, ° C AVERAGE ANNUAL 2010

Date	INFLUENT			AMMONIA			BOD	NFR	EFFLUENT			NTU	CL ₂ /Res	River		BOD	NFR
	pH	Temp	S.S.	mg/L	UN-IONIZED	NH ₃ (mg/L)			pH	Temp	D.O.			CL ₂ /Res	Coliform 3x5		
JANUARY	7.8	15.2	19.0	36.9	0.967	280	268		7.0	11.6	4.3	65.3	2.7	0.0	<2	38	47
FEBRUARY	7.7	15.2	19.8	39.7	1.082	255	218		6.8	12.3	4.2	65.9	2.0	0.0	<2	23	28
MARCH	7.6	14.8	19.0	35.8	0.718	208	165		6.7	12.4	4.2	72.1	1.4	0.0	<2	24	26
APRIL	7.6	15.1	18.0	34.2	0.633	198	182		6.7	13.0	4.2	63.9	2.0	0.0	<2	20	27
MAY	7.7	16.2	19.3	39.0	0.935	208	140		6.8	15.2	4.3	60.4	2.3	0.0	91	16	28
JUNE	7.6	17.2	16.8	38.5	0.802	218	175		6.7	17.4	4.4	101.0	3.0	N/A	2	24	28
JULY	7.6	18.2	15.0	40.3	0.886	254	184		6.6	17.2	4.7	151.3	3.2	N/A	10	32	33
AUGUST	7.8	19.0	17.5	44.2	1.449	303	285		9.4	16.7	3.9	158.9	2.9	N/A	<2	32	21
SEPTEMBER	7.8	19.3	22.8	43.5	1.362	255	233		6.6	16.7	4.3	176.0	3.4	N/A	<2	38	28
OCTOBER	7.8	18.7	21.2	41.6	1.420	246	234		6.9	14.7	4.0	165.1	3.6	N/A	<2	28	30
NOVEMBER	8.0	17.4	20.0	44.7	1.900	208	205		7.0	12.2	3.8	101.4	2.6	N/A	<1.5	22	31
DECEMBER	7.7	15.5	20.0	39.0	1.139	186	174		6.8	10.6	3.7	95.1	1.7	0.0	<1.8	29	31
Average	7.7	16.8	19.0	39.8	1.108	235	203		7.0	14.2	4.2	106.4	2.6	0.0	<2	27	30
Maximum	8.0	19.3	22.8	44.7	1.900	303	267.5		9.4	17.4	4.7	176.0	3.6	0.0	18	38	47
Minimum	7.6	14.8	15.0	34.2	0.633	186	140		6.6	10.6	3.7	60.4	1.4	0.0	<2	16	21

MEDIAN

McKinleyville Community Services District																							
Wastewater Management Facility																							
Influent & Effluent Testing pH, Temperature, Ammonia, CL ₂ /Res, Settleable Solids, BOD, NFR = pH, mg/L, ° C MARCH 2010																							
Date	INFLUENT			AMMONIA			BOD	NFR	EFFLUENT			CL ₂ /Res	River CL ₂ /Res	Coliform 3x5	BOD	NFR							
	pH	Temp	S.S	mg/L	UN-IONIZED NH3 (mg/L)	pH			Temp	D.O.	S.S.						mg/L	UN-IONIZED NH3 (mg/L)	NTU				
1	7.2	15.1		32.0	0.193				6.7	13	4		32.0	0.052	70.4	1.1	0.00	<2					
2	7.9	15.7		40.0	1.165				6.6	13.4	3.9		32.0	0.042	79.4	0.5	0.00						
3	7.7	14.2		36.0	0.643				6.6	12.1	4.1		30.0	0.035	86.1	1.7	0.00						
4	7.9	14.9		36.0	2.260				6.6	11.1	4.3		30.0	0.033	82.2	0.5	0.00						
5	7.8	15.1	20.0	38.0	0.890	190.0		170.0	6.5	11.7	3.9	<0.1	30.0	0.024	84.8	1.6	0.00		25	28			
6	7.5	13.9							6.7	11.4	3.8				82.2	2.4	0.00						
7	8.1	14.6							6.7	12.1	4.5				80.8	0.5	0.00						
8	7.8	14.9		36.0	0.831				6.8	12.6	4.1		30.0	0.059	80.6	0.8	0.00	<2					
9	7.9	15.1		36.0	1.002				6.7	11.2	3.8		28.0	0.040	78.2	0.6	0.00						
10	7.7	14.8		36.0	0.669				6.6	11.5	4.3		30.0	0.034	82.4	2.3	0.00						
11	7.9	15.4		38.0	1.083				6.7	11.8	4.1		28.0	0.042	82.3	3.6	0.00						
12	7.5	14.6	16.0	36.0	0.354	210		150	6.7	12.4	4.1	<0.1	30.0	0.047	79.9	3.1	0.00		23	23			
13	7.2	13.6							6.8	11.9	4.8				78.2	2.3	0.00						
14	7.9	13.2							6.9	9.3	4.1		30.0	0.042	67.0	1.4	0.00	<2					
15	7.4	15.1		34.0	0.298				6.7	10.8	4.2		28.0	0.053	64.6	0.4	0.00						
16	7.6	15.1		36.0	0.524				6.8	12.2	3.7		28.0	0.051	63.0	0.4	0.00						
17	7.5	14.5		32.0	0.314				6.8	11.5	4.8		28.0	0.043	61.8	0.1	0.00						
18	7.1	14.2		30.0	0.131				6.7	12.2	4.1		28.0	0.062	64.3	0.5	0.00		31	30			
19	7.9	15.9	20.0	40.0	1.182	210.0		180.0	7.0	13.2	4.1	<0.1	22.0	0.062	63.4	0.1	0.00						
20	7.6	14.7							6.8	12.7	3.8				68.5	0.1	0.00						
21	7.6	15.0							6.7	13.2	4.3		30.0	0.066	72.0	0.9	0.00	<2					
22	7.4	15.0		36.0	0.312				7.0	14.0	4.5		30.0	0.091	60.9	1.4	0.00						
23	7.8	15.9		38.0	0.947				6.8	13.7	5.0		28.0	0.060	63.9	1.3	0.00						
24	7.7	15.3		34.0	0.657				6.7	13.6	4.1		28.0	0.049	60.6	2.4	0.00						
25	7.8	15.5		38.0	0.911				6.7	12.6	4.3	<0.1	24.0	0.039	62.8	2.2	0.00		16	21			
26	7.8	15.0	20.0	36.0	0.837	220		160	6.5	13.0	4.1				64.0	2.3	0.00						
27	7.2	14.0							6.6	13.3	4.1				65.3	2.1	0.00						
28	7.1	14.2							6.6	14.1	3.9		28.0	0.038	66.6	2.1	0.00	<2					
29	7.6	15.4		38.0	0.568				6.6	12.8	4.0		28.0	0.035	79.7	1.6	0.00						
30	7.6	14.8		36.0	0.513				6.8	12.8	4.1		28.0	0.055	72.2	2.3	0.00						
31	7.3	14.6		32.0	0.229																		
Average	7.6	14.8	19.0	35.8	0.718	208		165	6.7	12.4	4.2	<0.1	28.7	0.047	72.1	1.4	0.0	<2	24	26			
Maximum	8.1	15.9	20.0	40.0	2.260	220		180	7.0	14.1	5	<0.1	32.0	0.091	86.1	3.6	0.0	<2	31	30			
Minimum	7.1	13.2	16.0	30.0	0.131	190		150	6.5	9.3	3.7	<0.1	22.0	0.024	60.6	0.1	0.0	<2	16	21			

McKinleyville Community Services District Wastewater Management Facility

Influent & Effluent Testing pH, Temperature, Ammonia, CL₂ Res, Settleable Solids, BOD, NFR =

pH, mg/L, °C

APRIL 2010

INFLUENT							EFFLUENT							River						
Date	pH	Temp	S.S	AMMONIA mg/L	UN-IONIZED NH3 (mg/L)	BOD	NFR	pH	Temp	D.O.	S.S.	AMMONIA mg/L	UN-IONIZED NH3 (mg/L)	NTU	CL ₂ /Res	CL ₂ /Res	Coliform 3x5	BOD	NFR	
1	8	16.1		40.0	1.388			6.7	11.4	4.4		28.0	0.041	70.5	2.3					
2	8	15.5	21.0	34.0	1.130	180	120.0	6.7	13.7	4.2	<0.1	24.0	0.042	68.4	4.3	0.00			24	
3	7.7	15.1						6.8	13.1	4.0				67.1	3.8	0.00			27	
4	7.9	15.3						6.7	13.5	4.3				69.9	1.7	0.00				
5	7.8	14.4		34.0	0.758			6.7	10.2	4.3		28.0	0.037	62.2	2.6	0.00	2.0			
6	7.4	15.3		32.0	0.287			6.8	12	3.2		24.0	0.042	61.1	3.0	0.00				
7	7.2	14.1		24.0	0.136			6.8	11.9	5		18.0	0.034	59.9	1.7	0.00				
8	7.8	15.6		32.0	0.779			7.0	12.5	5.2		24.0	0.065	58.5	0.4	0.00				
9	7.7	14.4	20.0	32.0	0.580	250	360	6.9	12.1	4.4	<0.1	28.0	0.063	57.8	2.5	0.00		22	33	
10	7.3	14.0						6.7	13.2	4.1				53.1	2.1	0.00				
11	7.3	14.5						6.7	13.2	4.0				55.0	1.3	0.00				
12	7.7	14.1		36.0	0.639			6.6	12.6	3.9		28.0	0.034	53.7	1.3	0.00	<2			
13	7.7	15.6		34.0	0.673			6.7	13.1	4.6		30.0	0.050	56.1	1.3	0.00				
14	7.7	15.5		38.0	0.746			6.8	13	4.4		28.0	0.056	54.9	0.6	0.00				
15	7.7	15.7		40.0	0.798			6.6	12.9	4.0		28.0	0.035	55.7	2.8	0.00				
16	7.5	15.0	18.0	40.0	0.412	210.0	160.0	6.6	12.9	3.8	<0.1	28.0	0.035	56.6	2.2	0.00		20	23	
17								6.6	14.3	4.6					1.3	0.00				
18								6.9	15.3	4.0					0.2	0.00				
19	7.5	15.7		32.0	0.347			6.6	14.6	3.9		30.0	0.043	64.7	0.2	0.00	23.0			
20	7.8	15.5		38.0	0.918															
21	7.4	14.9		32.0	0.276			6.7	13.1	6.1		28.0	0.046	74.5	4.8	0.00				
22	7.8	15.2		34.0	0.802			6.7	12.7	4.1		30.0	0.048	74.6	3.2	0.00				
23	7.6	14.7	14	32.0	0.454	170	110	6.7	13.0	4.5	<0.1	26.0	0.042	74.6	2.8	0.00		15	23	
24	7.3	14.5						6.6	13.4	3.5				74.9	2.7	0.00				
25	8.0	15.1						6.7	13.3	4.0				74.2	1.7	0.00				
26	7.9	15.7		40.0	1.165			6.7	13.8	2.9		32.0	0.056	71.0	1.3	0.00	<2			
27	7.6	15.8		34.0	0.527			6.6	14.0	4.1		28.0	0.038	68.5	0.1	0.00				
28	7.6	15.2		32.0	0.470			6.7	13.2	4.2		28.0	0.047	63.3	1.2	0.00				
29	7.5	15.1		32.0	0.332			6.8	13.0	4.3		30.0	0.061	60.5	3.7	0.00				
30	7.5	15.0	17.0	30.0	0.309	180.0	160.0	6.7	13.2	4.6	<0.1	28.0	0.047	63.8	1.2	0.00		17	28	
Average		7.6	15.1	18.0	34.2	0.633	198	182	6.7	13.0	4.2<0.1	27.4	0.046	63.9	2.0	0.0	<2	20	27	
Maximum		8	16.1	21.0	40.0	1.388	250	360	7.0	15.3	6.1<0.1	32.0	0.065	74.9	4.8	0.0	23	24	33	
Minimum		7.2	14	14.0	24.0	0.136	170	110	6.6	10.2	2.9<0.1	18.0	0.034	53.1	0.1	0.0	<2	15	23	

McKinleyville Community Services District

Wastewater Management Facility

Influent & Effluent Testing pH, Temperature, Ammonia, CL_2 Res, Settleable Solids, BOD, NFR =

pH, mg/L, °C

MAY 2010

INFLUENT						EFFLUENT						River						Coliform				
Date	pH	Temp	S.S	AMMONIA mg/L	UN-IONIZED NH3 (mg/L)	BOD	NFR	pH	Temp	D.O.	S.S.	AMMONIA mg/L	UN-IONIZED NH3 (mg/L)	NTU	CL2/Res	CL2/Res	3x5	BOD	NFR			
1	7.7	14.5						6.4	14	4					1.0	0.00						
2	7.2	15.3						6.8	14.7	3.9					0.6	0.00						
3	7.8	15.7		34.0	0.834			6.8	14.5	4.2		30.0	0.068	64.2	0.1	0.00	≥1600					
4	7.7	17.1		40.0	0.885			6.7	14.3	4.4		26.0	0.059	64.9	0.1	0.00						
5	7.6	15.4		40.0	0.599			6.7	14.3	4.4		26.0	0.059	62.2	0.1	0.00						
6	7.9	16.7		42.0	1.315			6.7	14.7	3.9		24.0	0.056	57.6	0.2	0.00						
7	7.6	16.1	20	36.0	0.571	200	150	6.7	14.7	4.6	<0.1	26.0	0.049	55.1	2.2	0.00		22	33			
8	7.3	15.0						6.7	15.2	4.1				52.1	1.5	0.00						
9	7.3	15.9						6.7	15.7	3.9				54.0	0.3	0.00						
10	7.5	15.6		36.0	0.388			6.6	15.2	4.1		28.0	0.042	56.3	0.7	0.00	170.0					
11	7.8	16.2		36.0	0.917			6.7	15.2	4.6		26.0	0.051	57.9	1.2	0.00						
12	7.9	16.4		38.0	1.165			6.7	15.1	4.4		24.0	0.047	63.3	0.1	0.00						
13	7.8	17.3		42.0	1.191			6.7	15.5	4.3		26.0	0.052	62.1	1.0	0.00						
14	7.7	16.1	22	42.0	0.865	200.0	140.0	6.8	15.9	3.7	<0.1	30.0	0.076	59.6	2.8	0.00		17	26			
15																						
16																						
17	8.0	17.1		42.0	1.563			6.8	15.3	4.8		32.0	0.077	55.4	2.1		13.0					
18	7.8	16.9		40.0	1.070			6.9	15.1	4.2		28.0	0.080	54.2	0.2							
19	8.0	16.2		40.0	1.398			6.8	15.5	4.4		30.0	0.074	69.7	4.3							
20	7.8	16.7		42.0	1.109			6.7	16.1	4.2		30.0	0.063	58.2	10.7							
21	7.7	15.5	15.0	40.0	0.786	240	160	7.1	15.7	5.4	<0.1	30.0	0.148	58.9	7.5			19	29			
22																						
23																						
24	7.6	16.1		36.0	0.572			6.9	15.3	4.7		28.0	0.081	64.6	2.5		<2					
25	7.6	17.3		42.0	0.728			6.8	16.5	4.8		28.0	0.075	62.8	3.6							
26	7.9	16.8		36.0	1.135			6.8	15.8	4.1		30.0	0.076	64.2	2.0							
27	7.7	16.3		38.0	0.794			6.9	15.6	4.4		30.0	0.089	65.6	2.3							
28	7.7	16.6	20	38.0	0.811	190.0	110.0	6.9	15.9	4.7	<0.1	30.0	0.091	66.9	2.2			6.2	23			
29															4.0							
30															4.6							
31															3.2							
																				MEDIAN		
Average	7.7	16.2	19.3	39.0	0.935	208	140	6.8	15.2	4.3	<0.1	28.1	0.071	60.4	2.3	0.0	91	16	28			
Maximum	8	17.3	22.0	42.0	1.563	240	160	7.1	16.5	5.4	<0.1	32.0	0.148	69.7	10.7	0.0	≥1600	22	33			
Minimum	7.2	14.5	15.0	34.0	0.388	190	110	6.4	14	3.7	<0.1	24.0	0.042	52.1	0.1	0.0	<2	6	23			

McKinleyville Community Services District
Wastewater Management Facility

Influent & Effluent Testing pH, Temperature, Ammonia, CL₂/Res, Settleable Solids, BOD, NFR =

pH, mg/L, ° C

JUNE 2010

Date	INFLUENT			AMMONIA			BOD	NFR	EFFLUENT			D.O.	S.S.	AMMONIA			NTU	CL ₂ /Res	River		Coliform 3x5	BOD	NFR
	pH	Temp	S.S	mg/L	UN-IONIZED NH ₃ (mg/L)				pH	Temp				mg/L	UN-IONIZED NH ₃ (mg/L)				CL ₂ /Res	CL ₂ /Res			
1	8	18.0		42.0	1.668				7.0	18.2		4.5		28.0	0.117		65.3	3.3					
2	7.7	18.3		38.0	0.915				7.0	18.8		4.8		28.0	0.122		65.9	2.9			4		
3	7.8	17.5		40.0	0.911				6.8	18.1		4.8		28.0	0.084		65.0	2.6					
4	7.0	16.4	8.0	30.0	0.109		180	130	6.6	17.8		3.8	<0.1	28.0	0.051		67.4	2.7				16	29
5																							
6																							
7	7.6	16.7		32.0	0.531				6.9	16.8		4.9		24.0	0.078		103.0	1.4			<2		
8	7.7	17.2		38.0	0.848				6.7	17.3		3.7		28.0	0.064		100.0	0.2					
9	7.8	17.4		40.0	1.110				6.6	17.8		3.9		28.0	0.051		101.0	0.4					
10	7.9	17.3		40.0	1.307				6.8	16.9		4.5		28.0	0.077		99.7	1.2					
11	7.7	17.1	20.0	38.0	0.840		210.0	170.0	6.7	17.0		3.9	<0.1	30.0	0.067		101.0	1.5				23	31
12																							
13																							
14	7.6	17.0		40.0	0.152				6.7	17.3		5.0		26.0	0.060		102.0	4.7			2		
15	7.7	17.3		38.0	0.853				6.7	17.2		4.5		24.0	0.055		106.0	1.3					
16	7.8	17.7		42.0	1.191				6.7	16.8		4.5		28.0	0.062		109.0	1.0					
17	7.5	16.7		32.0	0.374				6.8	17.1		4.4		22.0	0.061		103.0	2.5					
18	7.4	16.7	17.0	40.0	0.404		230	180	6.6	17.6		4.6	<0.1	30.0	0.054		96.3	6.8				25	26
19																							
20																							
21	7.4	16.4		36.0	0.356				6.7	17.2		4.3		26.0	0.059		101.0	7.5			<2		
22	7.9	17.7		44.0	1.480				6.6	18.3		4.3		26.0	0.049		103.0	6.0					
23	7.4	16.7		38.0	0.384				5.6	17.7		3.8		28.0	0.036		97.6	4.8					
24	7.4	16.9		34.0	0.348				6.7	17.6		4.0		26.0	0.061		101.0	3.9					
25	7.8	17.4	22.0	40.0	1.110		250.0	220.0	6.8	17.5		4.3	<0.1	28.0	0.080		102.0	5.4				32	26
26																							
27																							
28	7.7	17.1		40.0	0.885				6.7	16.4		4.2		24.0	0.052		145.0	2.4			2		
29	7.8	17.0		42.0	1.132				6.6	16.7		4.6		26.0	0.044		153.0	0.2					
30	7.6	17.5		42.0	0.739				6.5	17.4		5.2		26.0	0.032		134.0	4.1					
Average	7.6	17.2	16.8	38.5	0.802		218	175	6.7	17.4		4.4	<0.1	26.8	0.064		101.0	3.0		0.0	2	24	28
Maximum	8	18.3	22.0	44.0	1.668		250	220	7.0	18.8		5.2	<0.1	30.0	0.122		153	7.5		0.0	4	32	31
Minimum	7	16.4	8.0	30.0	0.109		180	130	5.6	16.4		3.7	<0.1	22.0	0.032		65	0.2		0.0	<2	16	26

MEDIAN

McKinleyville Community Services District

Wastewater Management Facility

Influent & Effluent Testing pH, Temperature, Ammonia, CL₂/Res, Settleable Solids, BOD, NFR =

pH, mg/L, ° C

JULY 2010

Date	INFLUENT			AMMONIA			BOD	NFR	EFFLUENT			D.O.	S.S.	AMMONIA			NTU	CL ₂ /Res	River		Coliform 3x5	BOD	NFR
	pH	Temp	S.S	mg/L	UN-IONIZED NH ₃ (mg/L)				pH	Temp				mg/L	UN-IONIZED NH ₃ (mg/L)				CL ₂ /Res	CL ₂ /Res			
1	7.6	17.8		40.0	0.719				6.5	17.3		5.8		26.0	0.032		130.0		3.1				
2	7.3	17.3	13.0	32.0	0.284		240	160	6.8	17.9		4.9	<0.1	28.0	0.083		146.0		0.9			32	38
3																							
4																							
5																							
6	7.8	17.5		36.0	1.006				6.6	16.5		7.1		22.0	0.036		128.0		1.9		<2		
7	7.8	18.1		42.0	1.225				6.6	17.3		4		24.0	0.042		146.0		1.4				
8	7.9	18.3		42.0	1.475				6.6	17.3		5.2		22.0	0.039		133.0		2.1				
9	7.6	17.7	16.0				240	170	6.5	17.5		7.7	<0.1				139.0		2.2			37	27
10																							
11																							
12	7.9	18.4							6.5	17.5		4.4					146.0		2.3		23		
13	7.5	18.1							6.5	17.4		4.4					149.0		0.2				
14	7.5	18.0		40.0	0.514				6.5	17.3		4.8		20.0	0.025		184.0		7.9				
15	8.0	19.0		44.0	1.880				6.5	17.6		5.7		20.0	0.025		155.0		4.4			40	23
16	7.8	18.9	6.0	44.0	1.357		270	230	6.4	17.6		4.6	<0.1	22.0	0.024		147.0		5.2				
17																							
18																							
19	7.3	18.1		40.0	0.376				6.6	16.9		4.4		22.0	0.038		137.0		4.3		17		
20	8.0	18.9		44.0	1.866				6.5	17.2		5.7		22.0	0.027		144.0		2.5				
21	7.3	18.0		34.0	0.318				6.7	16.8		4.3		20.0	0.044		149.0		2.0				
22	7.6	18.4		38.0	0.710				6.7	17.3		3.5		26.0	0.060		153.0		3.2				
23	7.6	17.9	20	38.0	0.687		320	180	6.4	17.0		3.2	<0.1	24.0	0.025		163.0		4.6			23	46
24																							
25																							
26	7.6	18.4		50.0	0.934				6.6	16.3		4.0		20.0	0.032		151.0		1.9		2		
27	7.5	17.8		34.0	0.431				6.4	17.4		3.5		24.0	0.026		165.0		3.7				
28	7.6	18.6		46.0	0.871				6.6	16.4		3.6		24.0	0.040		172.0		6.1				
29	7.5	18.5		40.0	0.528				6.6	18.6		3.3		30.0	0.058		168.0		3.6				
30	7.6	18.0	20.0	42.0	0.765		200	180	7.0	16.2		3.7	<0.1	22.0	0.079		172.0		3.2			27	30
31																							
Average	7.6	18.2	15.0	40.3	0.886		254	184	6.6	17.2		4.7	<0.1	23.2	0.041		151.3		3.2	#DIV/0!	10	32	33
Maximum	8	19	20.0	50.0	1.880		320	230	7.0	18.6		7.7	<0.1	30.0	0.083		184		7.9	0.0	23	40	46
Minimum	7.3	17.3	6.0	32.0	0.284		200	160	6.4	16.2		3.2	<0.1	20.0	0.024		128		0.2	0.0	<2	23	23

McKinleyville Community Services District Wastewater Management Facility

Influent & Effluent Testing pH, Temperature, Ammonia, CL₂ Res, Settleable Solids, BOD, NFR =

pH, mg/L, °C

SEPTEMBER 2010

INFLUENT								EFFLUENT								River				
Date	pH	Temp	S.S	AMMONIA mg/L	UN-IONIZED NH3 (mg/L)	BOD	NFR	pH	Temp	D.O.	S.S.	AMMONIA mg/L	UN-IONIZED NH3 (mg/L)	NTU	CL/Res	CL/Res	Coliform 3x5	BOD	NFR	
1	7.8	19.1		44.0	1.377			6.5	16.9	3.9		14.0	0.017	164.0	2.1					
2	7.8	19.0		40.0	1.242			6.5	17.2	4.2		14.0	0.017	162.0	1.8					
3	7.6	19.2	18	40.0	0.789	250	210	6.5	17.6	3.3	<0.1	8.0	0.010	172.0	0.1			27	44	
4																				
5																				
6																				
7	7.8	19.4		46.0	1.473			6.4	15.8	3		10.0	0.010	163.0	8.3		<2			
8	7.9	19.4		44.0	1.672			6.8	16.9	4.9		12.0	0.033	176.0	0.5					
9	7.7	19.1		44.0	1.119			6.8	17.1	4.6		14.0	0.039	159.0	1.5					
10	7.9	19.0	18	44.0	1.623	260.0	260.0	6.6	17.4	3.9	<0.1	12.0	0.021	164.0	2.5			43	26	
11																				
12																				
13	7.5	18.7		36.0	0.480			6.6	15.7	3.5		14.0	0.022	171.0	8.8		<2			
14	7.7	18.9		48.0	1.203			6.4	15.6	4.3		14.0	0.013	176.0	4.9					
15	7.3	18.3		38.0	0.361			6.6	16.3	5.2		14.0	0.023	170.0	2.2					
16	8	20.3		48.0	2.487			6.6	17.5	4.7		12.0	0.022	170.0	2.5					
17	8.1	20.7	30	48.0	3.197	290	240	6.5	18.0	3.2	<0.1	20.0	0.026	176.0	0.8			42	29	
18																				
19																				
20	7.6	19.2		40.0	0.789			6.5	16.5	3.8		18.0	0.021	187.0	7.4		<2			
21	7.7	19.2		42.0	1.078			6.7	16.5	6.1		18.0	0.039	181.0	1.2					
22	7.8	19.5		42.0	1.355			6.7	16.3	5.9		16.0	0.034	180.0	2.0					
23	7.9	19.2		46.0	1.722			6.7	16.3	4.7		18.0	0.038	184.0	3.6					
24	7.8	19.2	25	42.0	1.325	220.0	220.0	6.8	15.9	4.5	<0.1	24.0	0.061	187.0	4.7			41	11	
25																				
26																				
27	7.7	19.6		44.0	1.164			6.7	16.2	4.2		24.0	0.051	118.0	3.7		<2			
28	7.8	19.9		44.0	1.462			6.9	17.1	4.6		24.0	0.079	256.0	6.0					
29	7.6	19.0		48.0	0.931			6.7	16.7	3.8		26.0	0.057	193.0	3.4					
30	7.9	19.4		46.0	1.748			6.7	16.7	3.7		26.0	0.057	188.0	4.2					
Average	7.8	19.3	22.8	43.5	1.362	255	233	6.6	16.7	4.3<0.1		16.8	0.033	176.0	3.4		0.0	<2	38	28
Maximum	8.1	20.7	30.0	48.0	3.197	290	260	6.9	18.0	6.1<0.1		26.0	0.079	256	8.8		0.0	<2	43	44
Minimum	7.3	18.3	18.0	36.0	0.361	220	210	6.4	15.6	3<0.1		8.0	0.010	118	0.1		0.0	<2	27	11

McKinleyville Community Services District																				
Wastewater Management Facility																				
Influent & Effluent Testing pH, Temperature, Ammonia, CL ₂ /Res, Settleable Solids, BOD, NFR = pH, mg/L, ° C OCTOBER 2010																				
INFLUENT							EFFLUENT							River						
Date	pH	Temp	S.S	AMMONIA mg/L	UN-IONIZED NH ₃ (mg/L)	BOD	NFR	pH	Temp	D.O.	S.S.	AMMONIA mg/L	UN-IONIZED NH ₃ (mg/L)	NTU	CL ₂ /Res	CL ₂ /Res	Coliform 3x5	BOD	NFR	
1	7.8	20.3	28.0	44.0	1.504	260	230	6.6	17.3	3.5	<0.1	26.0	0.046	182.0	3.2			48	18	
2																				
3																				
4	7.8	19.4		38.0	1.217			6.6	16.1	3.6		24.0	0.039	195.0	4.1		<2			
5	7.7	18.7		34.0	0.841			6.9	15.5	4.2		24.0	0.071	187.0	3.2					
6	7.6	18.8		44.0	0.843			6.8	15.8	4.5		24.0	0.061	184.0	3.7					
7	7.8	18.8		42.0	1.287			6.7	15.4	3.4		28.0	0.056	187.0	4.3					
8	7.6	18.0	20.0	38.0	0.692	260	220	6.7	15.5	3.6	<0.1	30.0	0.061	182.0	4.5			30	30	
9																				
10																				
11																				
12	8	19.5		40.0	1.771			6.7	14.7	4.0		28.0	0.053	190.0	5.1		<2			
13	8.2	19.8		48.0	3.850			6.9	14.6	4.0		30.0	0.082	167.0	3.1					
14	8.2	19.8		48.0	3.850			6.8	14.7	4.1		28.0	0.065	168.0	3.0					
15	7.7	18.6	20.0	44.0	1.081	250	220	7.1	15.1	3.3	<0.1	34.0	0.159	180.0	1.8			25	47	
16																				
17																				
18	7.8	18.5		44.0	1.321			7.2	14.2	4.0		36.0	0.206	153.0	6.0		<2			
19	8.0	18.6		40.0	1.661			7.0	13.5	4.6		30.0	0.087	152.0	5.2					
20	7.7	18.4		46.0	1.115			7.0	13.3	3.8		30.0	0.086	153.0	3.7					
21	7.6	18.5		40.0	0.752			7.2	13.8	4.3		30.0	0.167	152.0	2.9					
22	7.8	18.7	19.0	36.0	1.095	240	270	6.8	15.1	3.5	<0.1	28.0	0.067	160.0	2.5			19	23	
23																				
24																				
25	7.9	18.3		38.0	1.047			6.9	14.7	4.1		28.0	0.077	126.0	4.4		<2			
26	7.9	18.1		40.0	1.384			6.9	14.0	4.5		30.0	0.079	141.0	0.9					
27	7.9	18.0		48.0	1.648			7.2	12.9	3.3		34.0	0.176	150.0	3.2					
28	7.7	17.9		42.0	0.984			7.0	13.6	4.1		30.0	0.088	151.0	3.5					
29	7.5	17.0	19.0	38.0	0.454	220	230	7.0	13.8	5.6	<0.1	24.0	0.072	142.0	3.6			19	33	
30																				
31																				
Average	7.8	18.7	21.2	41.6	1.420	246	234	6.9	14.7	4.0	<0.1	28.8	0.090	165.1	3.6		0.0	<2	28	30
Maximum	8.2	20.3	28.0	48.0	3.850	260	270	7.2	17.3	5.6	<0.1	36.0	0.206	195	6		0.0	<2	48	47
Minimum	7.5	17	19.0	34.0	0.454	220	220	6.6	12.9	3.3	<0.1	24.0	0.039	126	0.9		0.0	<2	19	18

Waste Water Management Facility 30 Day Average BOD & TSS Work Sheet 2010

DATE	Influent	Effluent	INF BOD	EFF BOD	INF TSS	EFF TSS	BOD	BOD	BOD	TSS	TSS	TSS
							mg/L	lbs/day	% Removal	mg/L	lbs/day	% Removal
6/4/2010	1.411	1.125	180	16	130	29	16	150	91	29	272	78
6/11/2010	1.152	1.026	210	23	170	31	23	197	89	31	265	82
6/18/2010	1.073	1.159	230	25	180	26	25	242	89	26	251	86
6/25/2010	0.977	0.981	250	32	220	26	32	262	87	26	213	88
							24	213	89	28	250	83

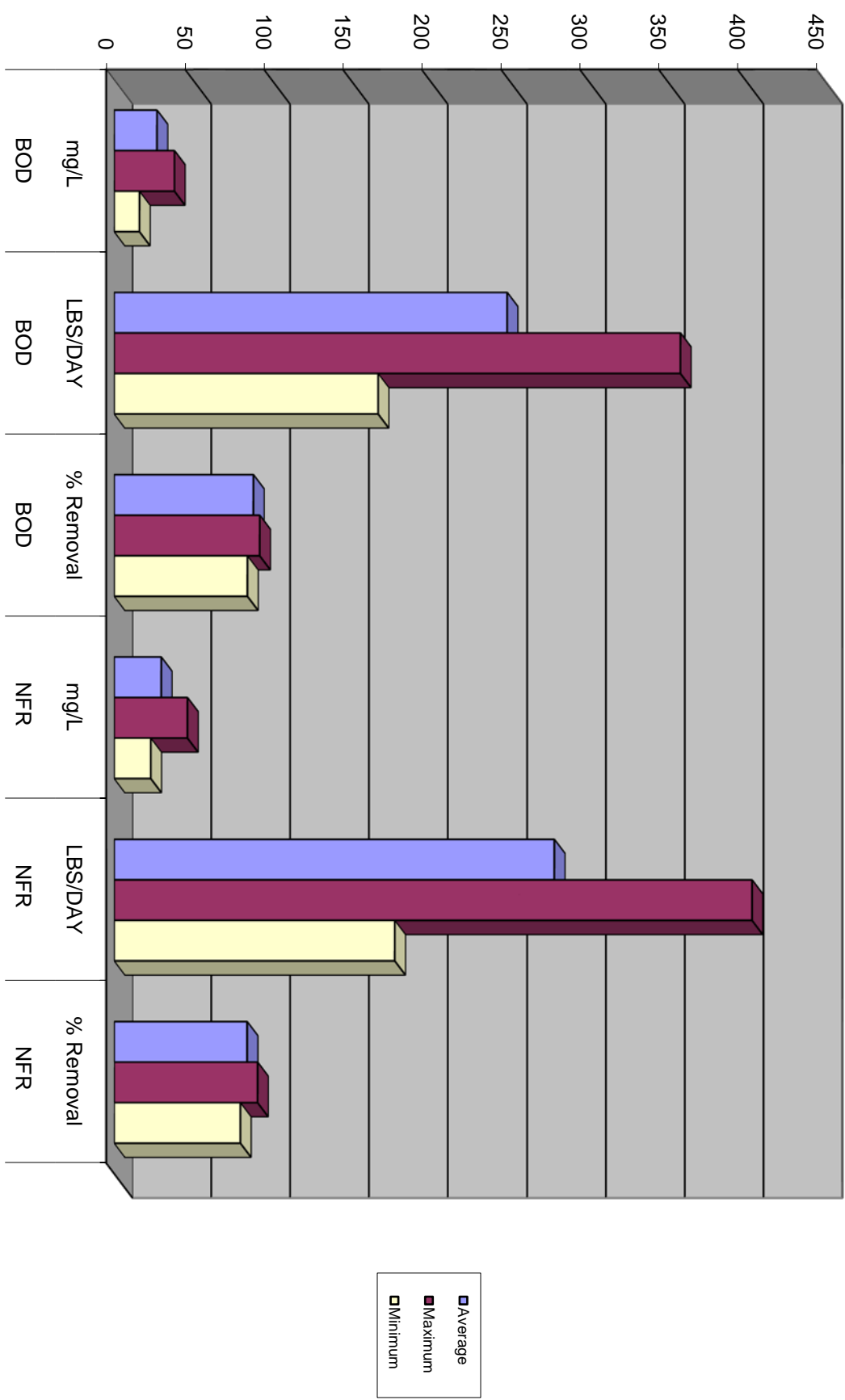
Monthly Avg.

Monthly Avg.Monthly Avg.Monthly Avg.Monthly Avg.Monthly Avg.Monthly Avg.

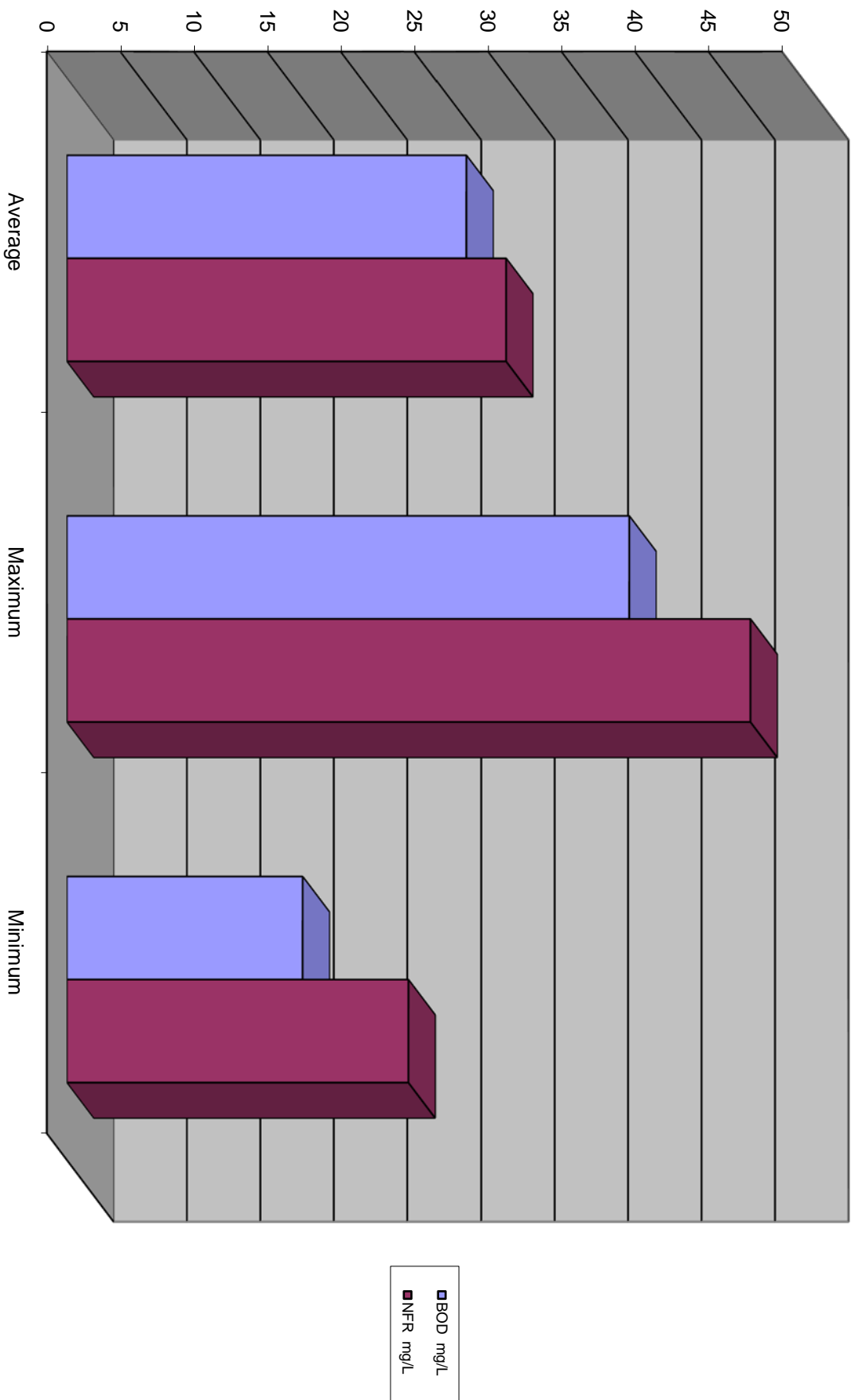
2010 BOD & NFR 30 Day Average**Average, Maximum and Minimum Totals**

Month	BOD mg/L	BOD lbs/day	BOD % Removal	TSS mg/L	TSS lbs/day	TSS % Removal
January	38	332	86	47	404	82
February	23	218	91	28	265	85
March	24	226	88	26	242	85
April	20	206	90	27	284	83
May	16	167	92	28	291	80
June	24	213	89	28	250	83
July	32	234	87	32	227	83
August	32	245	89	23	178	91
September	38	333	85	31	269	87
October	28	252	89	30	274	87
November	22	203	89	29	268	86
December	29	359	85	31	394	81
Average	27	249	88	30	279	84
Maximum	38	359	92	47	404	91
Minimum	16	167	85	23	178	80

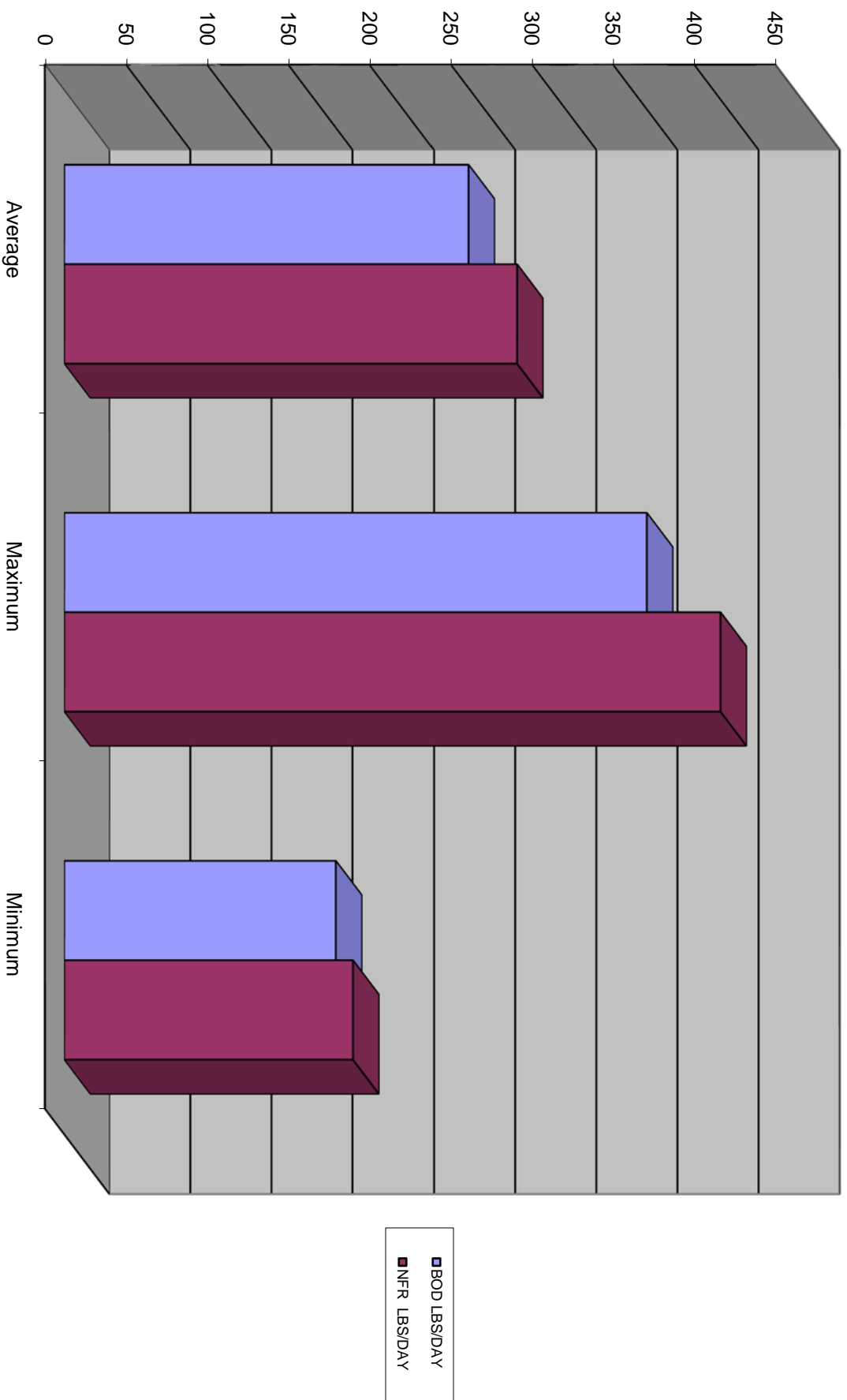
30 Day BOD & NFR
Maximum, Minimum, and Average



BOD & NFR 30 DAY AVERAGE mg/L



BOD & NFR 30 DAY AVERAGE LBS/DAY



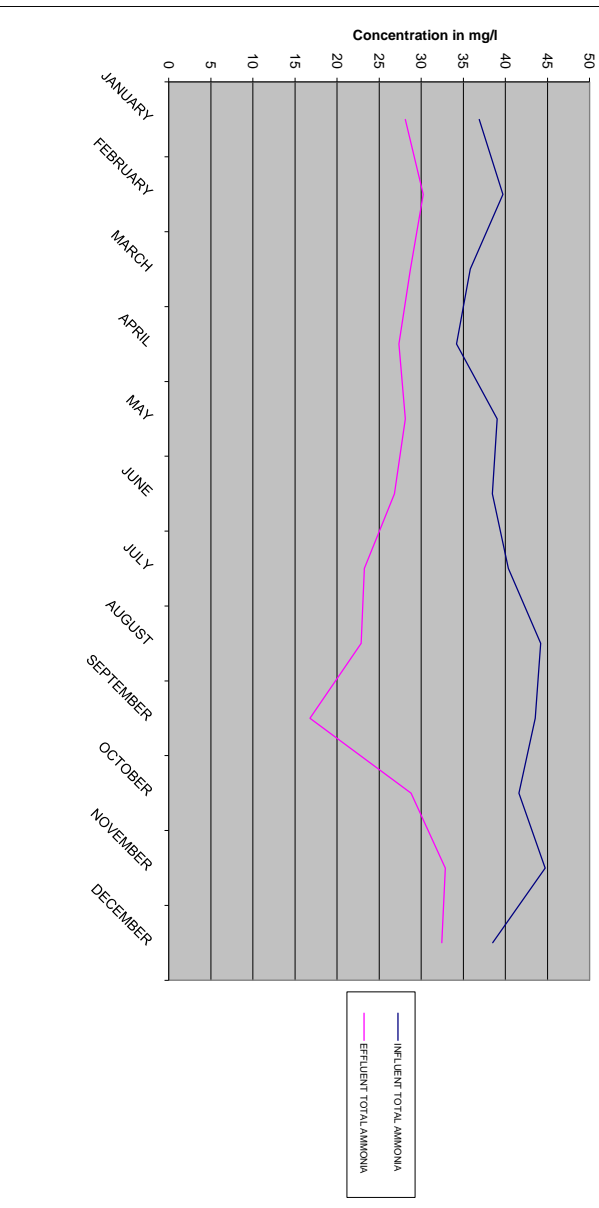
McKinleyville Community Services District
Wastewater Management Facility
2010 Influent, Terminal Pond, and Effluent BOD

MONTH		INFLUENT	EFFLUENT	POND 4	POND 5
		BOD	BOD	BOD	BOD
January	1/8/2010	300	37	25	
	1/15/2010	270	48	43	
	1/22/2010	300	45	53	
	1/29/2010	250	23		40
February	2/5/2010	320	23		44
	2/12/2010	200	17		36
	2/19/2010	260	21		46
	2/26/2010	240	32		47
March	3/5/2010	190	25		33
	3/12/2010	210	23		41
	3/19/2010	210	31		29
	3/26/2010	220	16		35
April	4/2/2010	180	24		37
	4/9/2010	250	22		40
	4/16/2010	210	20		36
	4/23/2010	170	15		41
May	4/30/2010	180	17		35
	5/7/2010	200	22		30
	5/14/2010	200	17		29
	5/21/2010	240	19		29
June	5/28/2010	190	6.2		40
	6/4/2010	180	16		41
	6/11/2010	210	23		44
	6/18/2010	230	25		68
July	6/25/2010	250	32		120
	7/2/2010	240	32		130
	7/9/2010	240	37		100
	7/16/2010	270	40		230
August	7/23/2010	230	23		86
	8/6/2010	360	27		84
	8/13/2010	280	26		110
	8/20/2010	340	32		110
September	8/27/2010	230	43		110
	9/3/2010	250	27		100
	9/10/2010	260	43		93
	9/17/2010	290	42		110
October	9/24/2010	220	41		64
	10/1/2010	260	48		100
	10/8/2010	260	30		120
	10/15/2010	250	25		77
November	10/22/2010	240	19		610
	10/28/2010	220	19		18
	11/5/2010	190	21		27
	11/12/2010	240	25		39
December	11/19/2010	190	19		30
	11/24/2010	210	24		36
	12/3/2010	210	32		49
	12/10/2010	160	29		37
Minimum	12/17/2010	220	30		38
	12/22/2010	200	32		42
	12/30/2010	140	20		32
Average		233	27	40	73
Maximum		360	48	53	610
Minimum		140	6.2	25	18

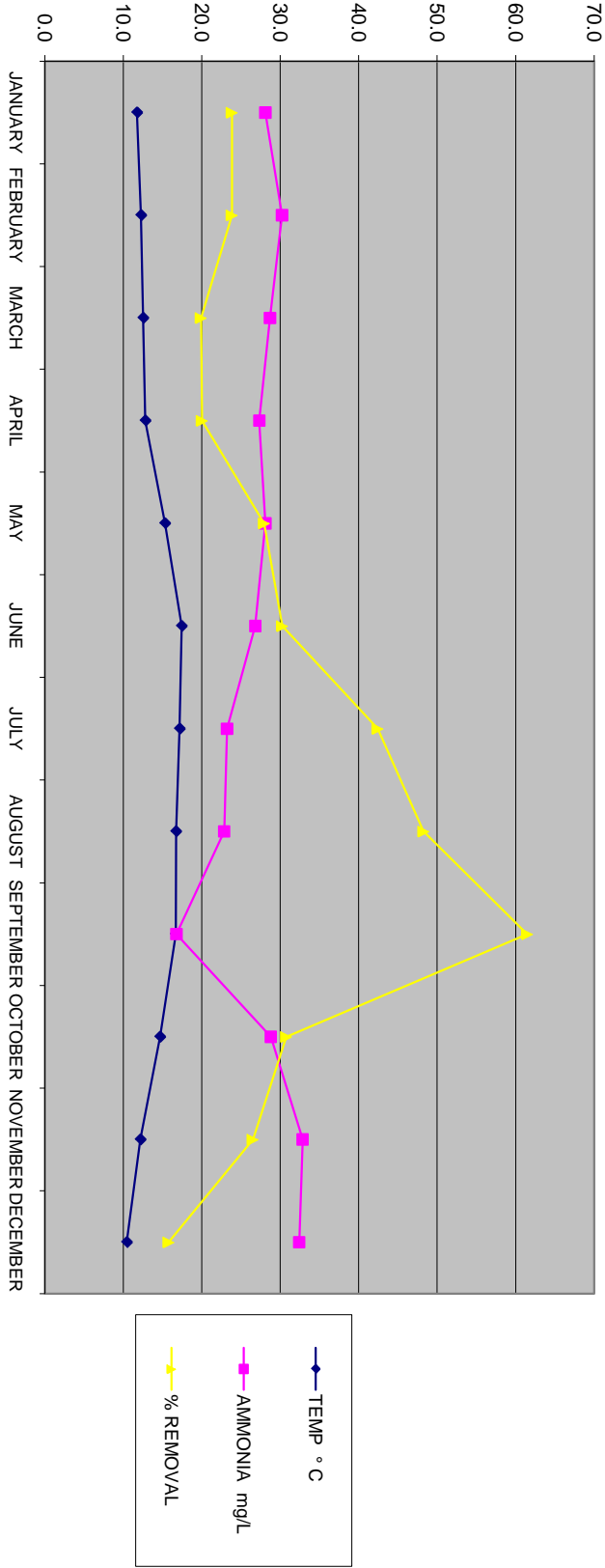
**MCKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITIES INFLUENT & EFFLUENT
AVERAGE AMMONIA, TEMPERATURE, pH, CALCULATED UN-IONIZED NH₃**

ANNUAL MONTHLY AVERAGE 2010											
DATE	PH	TEMP ° C	INFLUENT		UN-IONIZED NH ₃ (mg/L)	PH	TEMP ° C	EFFLUENT		UN-IONIZED NH ₃ (mg/L)	% REMOVAL
			TOTAL AMMONIA	mg/L				TOTAL AMMONIA	mg/L		
JANUARY	7.8	15.6	37		0.967	6.9	11.7	28		0.070	24
FEBRUARY	7.8	15.4	40		1.082	6.9	12.3	30		0.077	24
MARCH	7.6	15.0	36		0.718	6.7	12.5	29		0.047	20
APRIL	7.7	15.2	34		0.633	6.7	12.8	27		0.046	20
MAY	7.8	16.4	39		0.935	6.8	15.3	28		0.071	28
JUNE	7.6	17.2	38		0.802	6.7	17.4	27		0.064	30
JULY	7.6	18.2	40		0.886	6.6	17.2	23		0.041	42
AUGUST	7.8	19.0	44		1.449	6.6	16.7	23		0.035	48
SEPTEMBER	7.8	19.3	44		1.362	6.6	16.7	17		0.033	61
OCTOBER	7.8	18.7	42		1.420	6.9	14.7	29		0.090	31
NOVEMBER	8.0	17.4	45		1.900	7.0	12.2	33		0.092	27
DECEMBER	7.8	15.7	39		1.139	6.8	10.4	32		0.059	16
AVERAGE	7.8	16.9	39.7		1.108	6.8	14.2	27.2		0.060	31
MAXIMUM	8.0	19.3	44.7		1.900	7.0	17.4	32.9		0.092	61
MINIMUM	7.6	15.0	34.2		0.633	6.6	10.4	16.8		0.033	16

Average Total Ammonia



Relationship Between Temperature and Removal



McKinleyville Community Services District
River Monitoring 2010

Upstream R-001											
Month	Date	Time	CFS	Temp	pH	D.O.	NTU	Conductivity	Ammonia	Hardness	TDS
January	1/7/2010	09:20	4179	11.5	7.3	11	10.7	86.6	ND	57	80
February	2/8/2010	10:10	1342	9.3	8.2	12	44.1	61.5	ND	48	61
March	3/8/2010	11:10	1570	9.4	6.5	14.6	12.7	77.3	ND	50	73
April	4/14/2010	14:20	13735	11.9	8.9	10.6	30.1	63.6	ND	44	74
May	5/5/2010	10:45	735	12.2	8.4	11.6	15.4	78.5	ND	47	74
June	6/8/2010	14:30	N/A	15.9	7.7	10.5	9.3	87.1	ND	N/A	71
July	7/20/2010	11:10	N/A	18.5	8.3	8.9	0.57	159.4	ND	N/A	140
August	8/3/2010	10:40	N/A	16.9	6.7	7.8	179	178	ND	N/A	130
September	9/2/2010	11:10	N/A	21.1	8	9.4	0.67	171.3	ND	N/A	120
October	10/1/2010	10:40	N/A	18.1	8.3	6.5	0.81	223	ND	N/A	120
November	11/3/2010	13:25	N/A	15.7	7.9	12.2	3.64	120.4	ND	74	100
December	12/16/2010	11:00	3510	9.7	6.6	11.4	53.8	62	ND	52	83
Average				14.18	7.73	10.54	30.07	114.06	ND	53.14	93.83
Maximum				21.1	8.9	14.6	179.0	223.0	ND	74.0	140.00
Minimum				9.3	6.5	6.5	0.6	61.5	ND	44.0	61.00

Downstream R-002												
Month	Date	Time	CFS	Temp	pH	D.O.	NTU	Conductivity	Ammonia	Hardness	TDS	VISUAL IMPACT ON RIVER
January	1/7/2010	09:00	4179	11.5	7.2	10.5	13.1	110.8	0.9	60	96	No Visual Impact Observed
February	2/8/2010	10:25	1342	8.9	8.4	12	43.3	62.5	0.14	48	250	No Visual Impact Observed
March	3/8/2010	10:30	1570	9.4	6.3	14.8	13.3	80.4	1.2	50	70	No Visual Impact Observed
April	4/14/2010	14:30	13735	10.9	8.7	10.6	30.4	63.8	0.11	46	73	No Visual Impact Observed
May	5/5/2010	11:00	735	11.4	8.2	11.5	14.1	77.8	0.41	48	76	No Visual Impact Observed
June	6/8/2010	14:40	N/A	15.2	7.7	10.2	8.84	85.8	ND	N/A	73	N/A
July	7/20/2010	11:25	N/A	17.9	7.9	9.5	1.1	206	ND	N/A	160	N/A
August	8/3/2010	10:00	N/A	19.4	8.7	8.5	0.72	209	0.11	N/A	210	N/A
September	9/2/2010	10:55	N/A	20.5	7.6	9.1	0.75	208	N/D	N/A	104	N/A
October	10/1/2010	10:20	N/A	18.1	8	8.1	1.14	273	ND	N/A	180	N/A
November	11/3/2010	13:35	N/A	14.5	7.7	11.8	3.4	221	ND	81	180	N/A
December	12/16/2010	11:25	3510	9.5	6.6	11.6	50.1	68.3	0.14	50	86	No Visual Impact Observed
Average				13.93	7.75	10.68	15.02	138.87	0.43	54.71	129.83	
Maximum				20.5	8.7	14.8	50.1	273.0	1.2	81.0	250.00	
Minimum				8.9	6.3	8.1	0.7	62.5	0.1	46.0	70.00	

WWMF M-001											
Month	Date	Time	CFS	Temp	pH	D.O.	NTU	Conductivity	Ammonia	Hardness	TDS
January	01/07/10	09:40	4179	11.6	7.1	4.3	68.1	422.0	28	N/A	260
February	02/08/10	10:55	1342	10.9	7	2.5	68.3	457	25	N/A	93
March	03/08/10	11:30	1570	12.6	6.8	4.1	80.6	353	28	N/A	240
April	04/14/10	14:45	13735	13.2	7	2.4	54.9	345	20	N/A	250
May	05/05/10	11:30	735	14.4	6.8	4.4	61.8	353	16	N/A	220
June	06/08/10	15:10	N/A	17.4	6.9	5.6	109	400	22	N/A	260
July	07/20/10	11:40	N/A	17.2	6.5	5.7	144	381	17	N/A	160
August	08/03/10	10:55	N/A	17.6	8.2	8.6	2.16	414	18	N/A	300
September	09/02/10	11:20	N/A	18.2	6.7	2.7	168	370	7.6	N/A	300
October	10/01/10	11:10	N/A	17.6	7.0	4.1	182	489	18	N/A	320
November	11/03/10	14:25	N/A	15.1	7.3	4.6	140	458	25	N/A	280
December	12/16/10	11:40	3510	10.9	6.9	4.5	82.4	442	26	N/A	250
Average				14.73	7.02	4.46	96.77	407.00	20.88	#DIV/0!	244.42
Maximum				18.2	8.2	8.6	182.0	489.0	28.0	0.0	320.00
Minimum				10.9	6.5	2.4	2.2	345.0	7.6	0.0	93.00

McKinleyville Community Services District
R-003 Fischer Ranch Backswamp 2010

Upstream of gate										
Month	Date	Time	Temp	pH	D.O.	Conductivity	TDS	Ammonia	Nitrate	Boron
January	1/6/2010	14:50	14.3	6.4	3.2	199.2	1500	0.04	ND	ND
February	2/23/2010	11:00	11	8.2	4.1	340	400	0.86	ND	120
March	3/3/2010	14:05	14.4	8.2	11.8	170.2	190	0.76	ND	ND
April	4/14/2010	9:30	12.7	8.6	3.7	197.4	190	0.36	ND	ND
May	5/10/2010	9:40	12	9.1	11.6	104.7	29	0.12	0.26	ND
June	DRY									
July	DRY									
August	DRY									
September	DRY									
October	DRY									
November	11/24/2010	10:30	10.4	6	6.9	557	410	0.1	0.9	160
December	12/9/2010	9:55	12	6.6	2.6	217	230	0.45	ND	ND
Average			12.4	7.6	6.3	255.1	421.3	0.4	0.0	140.0
Maximum			14.4	9.1	11.8	557.0	1500.0	0.9	0.9	160.0
Minimum			10.4	6.0	2.6	104.7	29.0	0.0	0.3	120.0

Fischer Road										
Month	Date	Time	Temp	pH	D.O.	Conductivity	TDS	Ammonia	Nitrate	Boron
January	1/6/2010	14:40	13.6	6.2	10.3	15	13	ND	ND	ND
February	2/23/2010	10:45	11.5	9.5	10.6	61.9	94	0.62	0.54	ND
March	3/2/2010	13:55	15.6	8.7	14.3	92.2	130	0.28	ND	ND
April	4/14/2010	9:20	12.9	8.7	2.8	157.4	170	0.27	ND	ND
May	5/7/2010	11:00	18.1	7.1	3.9	314	300	0.83	ND	110
June	6/10/2010	9:30	15.3	7	5.6	261	270	0.45	ND	140
July	DRY									
August	DRY									
September	DRY									
October	DRY									
November	11/24/2010	10:45	10.3	5.8	7.8	148	110	0.42	ND	ND
December	12/9/2010	9:40	12.1	6.7	6.7	92.4	110	0.17	0.14	ND
Average			13.7	7.5	7.8	142.7	149.6	0.4	0.3	125.0
Maximum			18.1	9.5	14.3	314.0	300.0	0.8	0.5	140.0
Minimum			10.3	5.8	2.8	15.0	13.0	0.2	0.1	110.0

McKinleyville Community Services District
Hiller Marsh 2010

Upstream R-004

Month	Date	Time	Temp	pH	D.O.	NTU	Ammonia	Nitrate	Conductivity	TDS	Boron
January	1/6/2010	15:25	13.5	6	9.8	15	ND	0.11	40.5	40	ND
February	2/9/2010	10:00	10.5	7.5	10.3	8.26	ND	1.00	94.2	84	ND
March	3/3/2010	11:40	9.7	7.8	10.9	9.66	ND	0.52	88.3	60	ND
April	4/14/2010	10:00	11.8	8.8	10.2	2.4	ND	0.66	71.3	64	ND
May	5/3/2010	10:15	13	8.5	9.4	2.53	ND	1.00	104.2	84	ND
June	6/7/2010	11:30	17.2	7.5	8.9	18.2	ND	0.72	95.7	84	ND
July	DRY										
August	DRY										
September	DRY										
October	10/25/2010	11:05	14.6	7.7	7.4	6.61	ND	0.20	71.1	76	ND
November	11/8/2010	10:40	11.9	7.9	8.1	3.19	ND	0.12	185.2	57	ND
December	12/9/2010	10:20	12.8	6.6	9.5	2.32	ND	0.47	88.5	76	ND
Average			12.78	7.59	9.39	7.57	0.00	0.53	93.22	69.44	0.00
Maximum			17.2	8.8	10.9	18.2	0.0	1.0	185.2	84.0	0.0
Minimum			9.7	6.0	7.4	2.3	0.0	0.1	40.5	40.0	0.0

Upstream R-005

Month	Date	Time	Temp	pH	D.O.	NTU	Ammonia	Nitrate	Conductivity	TDS	Boron
January	1/6/2010	15:20	12.7	60	8.9	9.1	ND	ND	27.9	19	ND
February	2/9/2010	10:05	10.3	7.4	5.5	0.78	ND	0.65	61.3	81	ND
March	3/3/2010	11:45	9.6	7.7	11.5	1.22	0.4	0.13	66.2	40	ND
April	4/14/2010	10:05	12	9	6.7	0.99	ND	ND	50.4	56	ND
May	5/3/2010	10:30	14.2	8.7	4.3	1.57	ND	ND	50.4	44	ND
June	6/7/2010	11:30	17	7.5	4.7	1.9	ND	ND	49	50	ND
July	DRY										
August	DRY										
September	DRY										
October	10/25/2010	11:00	13.9	8.2	6.1	3.15	ND	0.17	73.3	69	ND
November	11/4/2010	10:30	12.4	7.9	7.9	0.97	ND	ND	56.2	63	ND
December	12/9/2010	10:25	11.8	6.8	5.7	1.95	0.11	0.16	49.2	44	ND
Average			12.66	13.69	6.81	2.40	0.00	0.28	53.77	51.78	0.00
Maximum			17.0	60.0	11.5	9.1	0.4	0.7	73.3	81.0	0.0
Minimum			9.6	6.8	4.3	0.8	0.1	0.1	27.9	19.0	0.0

Downstream M-008

Date	Time	TSS	BOD	Boron	Nitrate	Ammonia
11/4/2010	10:30	2.4	2.7	ND	ND	ND

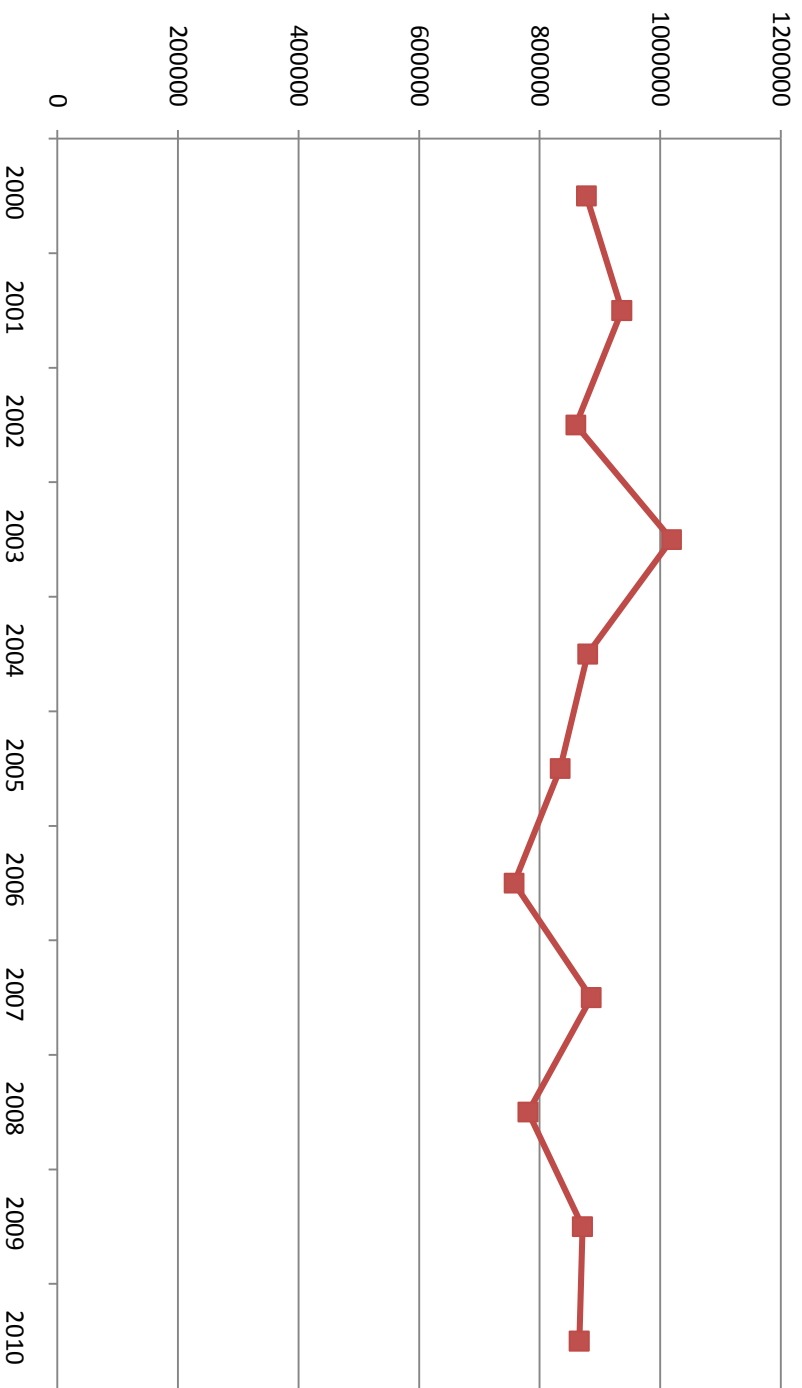
**McKINLEYVILLE COMMUNITY SERVICES DISTRICT
MONITORING WELL DATA 2010**

Location	W-001		W-002		W-006		W-007		W-008		W-009		W-014		W-015		W-016	
	Nitrate	TDS	Nitrate	TDS	Nitrate	TDS	Nitrate	TDS	Nitrate	TDS	Nitrate	TDS	Nitrate	TDS	Nitrate	TDS	Nitrate	TDS
Quarter																		
January	14	210	3.4	110	21	290	27	280	19	270	17	220	1.6	110	ND	820	ND	6000
April	8.7	180	2.6	100	18	260	25	300	8.8	160	8.6	140	2.2	89	3.7	360	ND	6200
July	14	240	3	84	17	250	14	170	9.2	150	22	240	3.1	80	0.11	950	ND	6400
October	12	220	4.5	120	19	120	17	220	15	250	18	220	1.9	87	ND	850	ND	4900
AVERAGE	12.2	212.5	3.4	103.5	18.8	230.0	20.8	242.5	13.0	207.5	16.4	205.0	2.2	91.5	1.9	745.0	ND	5875.0
MAXIMUM	14.0	240.0	4.5	120.0	21.0	290.0	27.0	300.0	19.0	270.0	22.0	240.0	3.1	110.0	3.7	950.0	ND	6400.0
MINIMUM	8.7	180.0	2.6	84.0	17.0	120.0	14.0	170.0	8.8	150.0	8.6	140.0	1.6	80.0	0.1	360.0	0.0	4900.0

FEBRUARY 2010

POND 1 A				POND 1 B		
	CENTER	SOUTH	NORTH	CENTER	SOUTH	NORTH
1	12.4	13.5	11.6	11.5	14.6	12.6
2	12.4	23.8	13.7	12.5	17.7	14.6
3	11.3	18.5	11.5	13.6	17.6	13.5
4	10.3	12.4	13.5	13.6	13.6	16.7
5	10.4	12.4	14.6	12.5	11.5	14.6
6	13.4	14.6	16.6	11.5	12.4	10.4
7	13.5	14.6	12.5	12.6	14.5	12.5
8	13.5	12.4	18.6	10.5	14.4	10.6
9	12.5	10.4	17.6	13.6	12.4	13.6
10	12.5	12.4	18.9	12.5	12.5	12.4
11	12.5	13.5	18.6	10.5	11.4	14.6
12	14.5	12.4	12.6	13.6	11.4	12.5
13	13.4	14.6	13.5	12.6	10.4	14.5
14	10.4	13.5	14.6	11.5	11.5	13.6
15	14.5	15.6	20.8	13.6	11.6	13.5
16	14.4	20.8	19.7	11.5	10.5	16.6
17	11.4	25.1	12.4	13.5	10.4	18.6
18	11.5	23.1	14.6	10.4	10.5	15.5
19	12.4	18.6	14.7	12.6	10.4	18.6
20	14.4	24.1	13.6	12.4	11.5	16.8
21	11.3	32.1	11.4	16.6	11.4	14.6
22	12.3	35.1	12.5	14.5	13.3	10.5
23	20.7	23.1	14.5	16.6	13.5	14.5
24	17.6	12.5	7.2	14.4	12.3	8.3
AVERAGE	13	18	15	13	13	14
MAXIMUM	21	35	21	17	18	19
MINIMUM	10	10	7	10	10	8
ALL				POND A POND B		
AVERAGE	ALL	14		AVERAGE	15	13
MAXIMUM	ALL	35		MAXIMUM	26	18
MINIMUM	ALL	7		MINIMUM	9	10
POND 1A	160,434	CUFT	AVERAGE POND 1A =		1.3	Ft. DEPTH
POND 1B	109,550	CUFT	AVERAGE POND 1B =		1.1	Ft. DEPTH
TOTAL 269,984 CUFT						
CAPACITY	POND A = 634,415 CUFT POND B = 501,225 CUFT					
REMAINING	POND A = 473,981 CUFT POND B = 391,675 CUFT					
TOTAL SLUDGE CAPACITY 1,135,640 CUFT						
TOTAL REMAINING SLUDGE CAPACITY 865,656 CUFT						

Remaining Sludge Capacity



Remaining Sludge Capacity

McKinleyville Community Services District
Wastewater Management Facility
Pond Ammonia Levels in mg/L
Annual Averages 2010

Date		Pond A	Pond B	Pond 2	Pond 3	Pond 4	Pond 5
January		31	30	32	31	30	32
February		29	28	29	31	30	32
March		28	26	28	27	29	29
April		25	25	25	26	27	28
May		25	25	27	27	28	30
June		27	28	29	29	29	29
July		26	28	25	23	22	23
August		30	30	25	24	23	24
September		29	27	23	19	16	17
October		27	30	30	29	28	28
November		32	33	32	30	31	34
December		30	30	30	29	30	32
Average		28	28	28	27	27	28
Minimum		25	25	23	19	16	17
Maximum		32	33	32	31	31	34

McKinleyville Community Services District
Wastewater Management Facility
Pond Temperatures in C
Annual Averages 2010

								Average
Date		Pond A	Pond B	Pond 2	Pond 3	Pond 4	Pond 5	Pond Temp.
January		12.5	12.4	12.2	11.8	11.4	10.9	11.9
February		13.0	13.1	12.9	12.6	12.3	11.7	12.6
March		13.4	13.5	13.5	13.2	12.8	12.1	13.1
April		14.2	14.2	14.3	14.1	13.8	12.8	13.9
May		15.8	16.7	16.9	16.8	16.5	14.6	16.4
June		18.6	18.4	19.0	18.9	18.9	16.9	18.5
July		18.6	18.8	19.2	19.0	18.6	17.2	20.0
August		18.6	18.7	19.0	19.0	18.2	17.2	18.5
September		18.6	18.7	18.9	18.8	18.0	16.9	18.3
October		16.4	16.4	16.3	16.2	15.7	15.0	16.0
November		13.7	13.7	13.7	13.5	13.2	12.8	13.4
December		11.7	11.8	11.4	11.3	11.0	10.9	11.4
Average		15.4	15.5	15.6	15.4	15.0	14.1	
Minimum		11.7	11.8	11.4	11.3	11.0	10.9	
Maximum		18.6	18.8	19.2	19.0	18.9	17.2	

McKinleyville Community Services District
Wastewater Management Facility
Pond pH
Annual Averages 2010

								Average
Date		Pond A	Pond B	Pond 2	Pond 3	Pond 4	Pond 5	Pond pH
January		7.3	7.3	7.3	7.2	7.1	6.9	7.2
February		7.1	7.2	7.2	7.1	7.0	6.7	7.1
March		7.1	7.2	7.3	7.2	7.1	6.9	7.1
April		7.3	7.3	7.4	7.3	7.2	6.9	7.2
May		7.5	7.4	7.4	7.3	7.1	6.8	7.2
June		7.4	7.5	7.5	7.5	7.2	6.8	7.3
July		7.5	7.5	7.5	7.5	7.2	6.8	7.7
August		7.4	7.4	7.5	7.4	7.2	6.9	7.3
September		7.3	7.3	7.4	7.3	7.2	7.0	7.2
October		7.4	7.3	7.4	7.5	7.4	7.2	7.3
November		7.3	7.2	7.3	7.4	7.3	7.2	7.3
December		7.2	7.1	7.1	7.1	7.1	7.1	7.1
Average		7.3	7.3	7.4	7.3	7.2	6.9	
Minimum		7.1	7.1	7.1	7.1	7.0	6.7	
Maximum		7.5	7.5	7.5	7.5	7.4	7.2	

McKinleyville Community Services District
Wastewater Management Facility
Pond Dissolved Oxygen in mg/L
Annual Averages 2010

								Average
Date		Pond A	Pond B	Pond 2	Pond 3	Pond 4	Pond 5	Pond D.O.
January		2.9	3.0	4.0	3.9	3.0	1.9	3.1
February		3.1	3.4	4.9	4.3	3.4	1.9	3.5
March		4.7	4.5	6.4	4.3	3.8	2.0	4.3
April		6.0	6.1	6.3	5.2	4.2	2.1	5.0
May		5.6	5.8	4.6	5.5	3.7	1.8	4.5
June		4.7	5.5	6.0	7.6	5.6	1.9	5.2
July		4.9	5.5	6.4	5.4	5.6	2.0	5.0
August		4.6	4.1	6.2	6.0	5.8	2.4	4.8
September		2.4	1.9	5.6	6.1	5.5	2.0	3.9
October		4.2	2.8	3.5	4.5	4.1	2.1	3.5
November		3.9	2.7	4.6	4.3	3.7	2.1	3.6
December		3.5	3.0	3.3	3.4	3.1	2.3	3.0
Average		4.2	4.0	5.1	5.0	4.3	2.0	
Minimum		2.4	1.9	3.3	3.4	3.0	1.8	
Maximum		6.0	6.1	6.4	7.6	5.8	2.4	

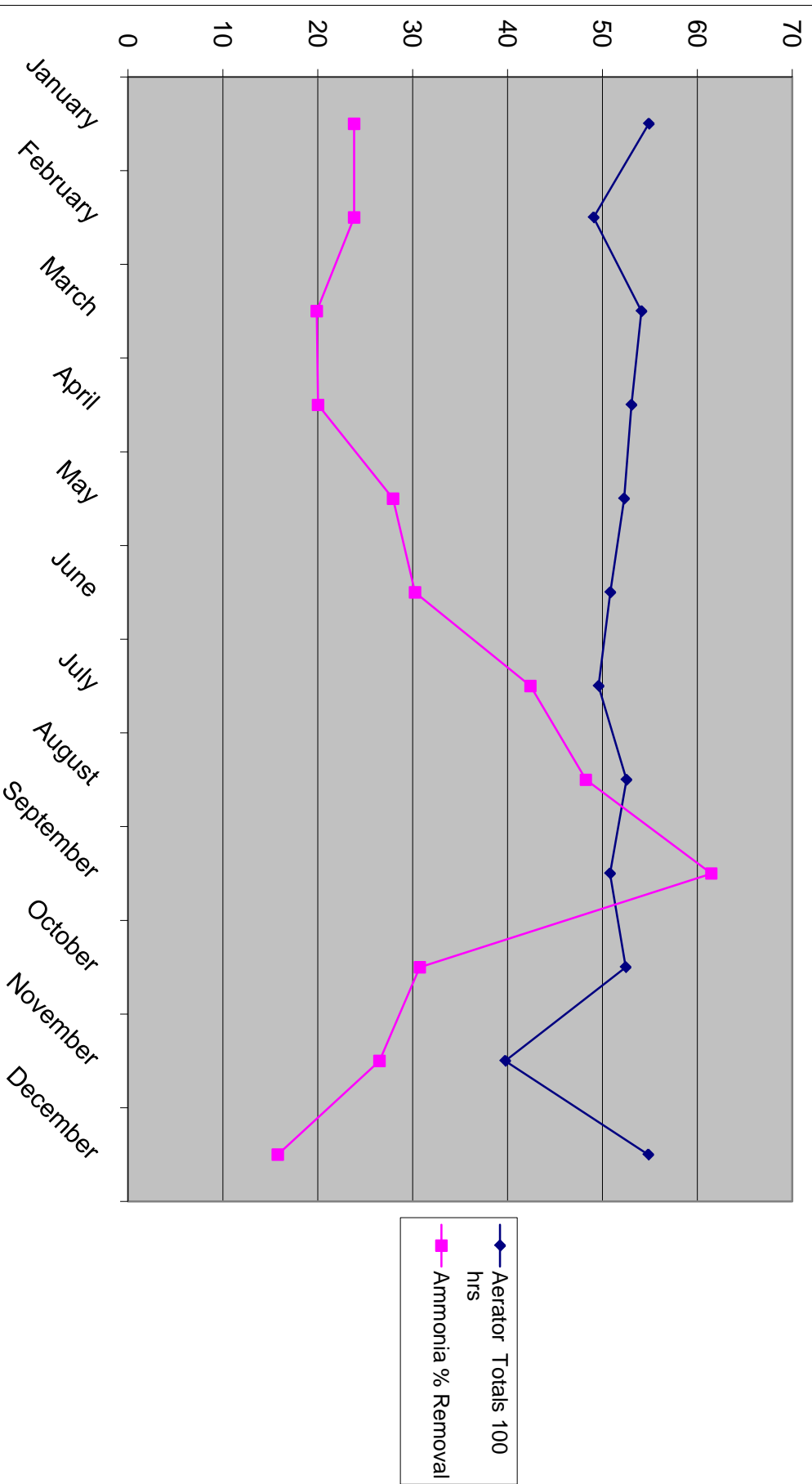
McKinleyville Community Services District
Wastewater Management Facility
Pond Depths, Elevation in Feet Above Sea Level
Annual Averages 2010

Annual Averages 2010								Average
Date		Pond A	Pond B	Pond 2	Pond 3	Pond 4	Pond 5	Pond Depth
January		63.1	63.1	62.3	61.6	61.1	60.7	62.0
February		63.1	63.1	62.1	61.4	61.0	60.7	61.9
March		63.0	63.0	62.1	61.4	61.0	60.7	61.8
April		63.0	63.0	62.2	61.7	61.2	61.0	62.0
May		62.8	62.8	62.2	61.8	60.4	60.1	61.7
June		62.9	62.9	62.1	61.8	60.4	59.9	61.7
July		62.0	62.0	61.5	61.2	57.5	59.9	61.4
August		62.3	62.3	61.8	61.6	60.5	60.3	61.5
September		62.5	62.5	61.9	61.6	60.5	60.0	61.5
October		62.2	62.2	61.6	61.3	60.6	60.2	61.4
November		62.5	62.5	61.9	61.5	60.9	60.5	61.6
December		62.6	62.6	61.8	61.3	61.1	60.7	61.7
Average		62.7	62.7	62.0	61.5	60.5	60.4	
Minimum		62.0	62.0	61.5	61.2	57.5	59.9	
Maximum		63.1	63.1	62.3	61.8	61.2	61.0	

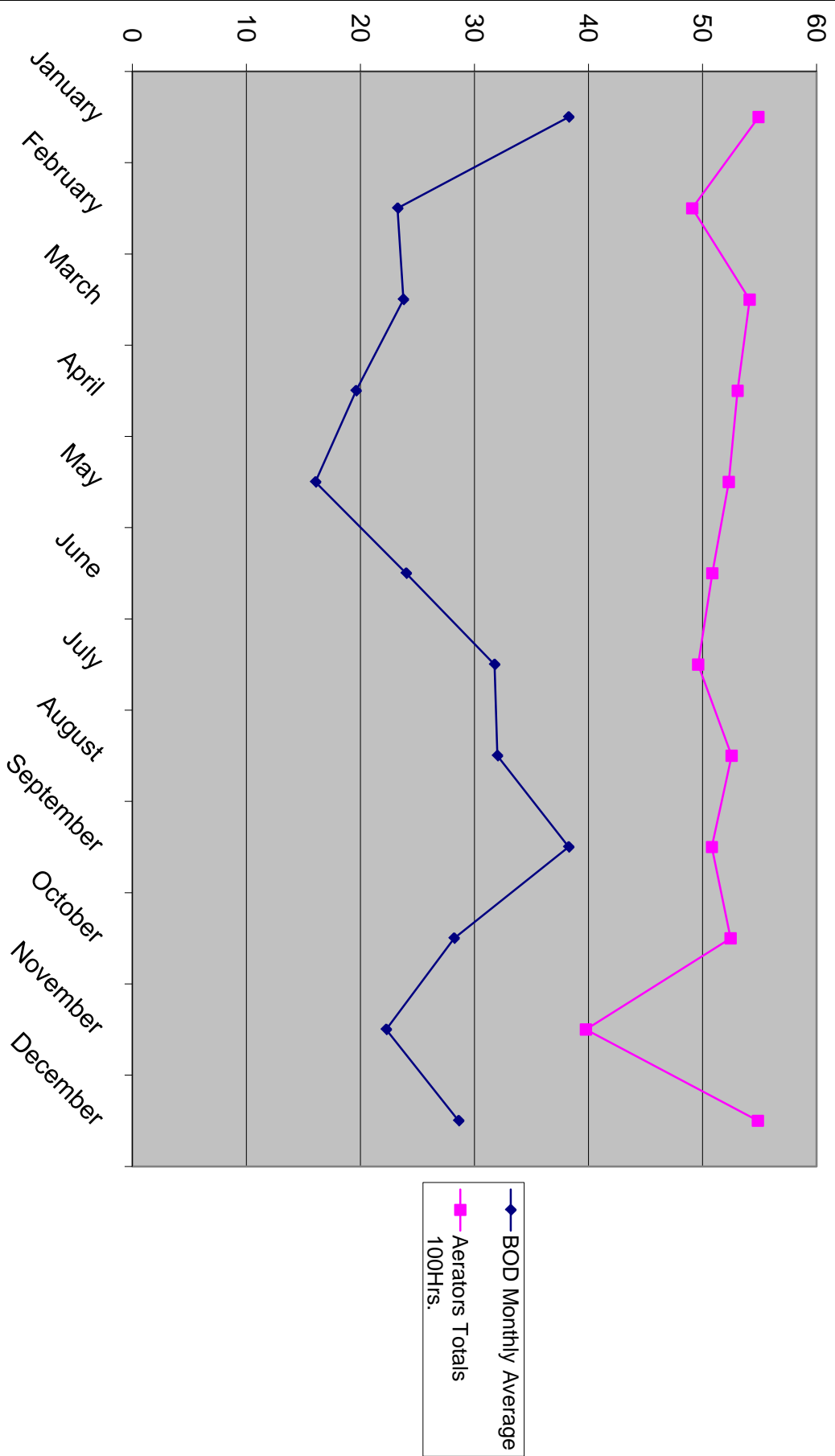
MCKINLEYVILLE COMMUNITY SERVICES DISTRICT
 WASTEWATER MANAGEMENT FACILITY
 ANNUAL TOTAL AERATOR HOURS 2010

DATE	Pond A				Pond B				Pond				TOTALS
	1A	2A	3A	4A	5A	1B	2B	3B	4B	5B	2-A	2-B	
January	147.1	255	729.9	154.8	737.7	140.9	244.7	727.9	148.6	734.7	734.5	734.4	5490.2
February	132.6	237.3	651.4	137.8	654.4	121.5	214.8	636.6	129.3	655.6	668.6	668.4	4908.3
March	146.9	275.3	727.2	148.6	721.1	136.2	234.8	729.9	137.9	718.3	718.2	718.2	5412.6
April	144.7	247.9	701.8	144.6	716	131.6	240	700.5	140.9	712.8	713.4	712.6	5306.8
May	114.8	202	731.6	115.3	741.2	104.7	186.5	729.4	113.8	740.6	740.8	708.4	5229.1
June	108.9	198.1	707.4	112.6	716.9	96.7	180.3	707.4	105.8	716.7	716.8	716.7	5084.3
July	102.4	185.8	704.3	111.1	696.7	97.6	168.7	700.3	104.2	696.4	696.8	696.4	4960.7
August	114.3	201.1	733.2	117	740.7	100.4	184.3	732.2	109	740.4	740.8	740.5	5253.9
September	110.7	188.6	709.9	111.8	717	102.4	175.2	709	106.6	716.6	716.8	716.6	5081.2
October	112.4	197.5	732.1	121.7	740.6	107.5	176.8	730	105	740.6	740.7	740.5	5245.4
November	201.6	110.5	385.2	97.8	486.1	193.9	156.1	382.8	88.4	485.9	713.9	674.3	3976.5
December	232.3	317.9	733.6	37.3	735.4	213	313.7	729.9	36.2	736	735.9	663.5	5484.7
TOTAL	1668.7	2617.0	8247.6	1410.4	8403.8	1546.4	2475.9	8215.9	1325.7	8394.6	8637.2	8490.5	61433.7
AVERAGE	139.1	218.1	687.3	117.5	700.3	128.9	206.3	684.7	110.5	699.5	719.8	707.5	5119.5
MAXIMUM	232.3	317.9	733.6	154.8	741.2	213.0	313.7	732.2	148.6	740.6	740.8	740.5	5490.2
MINIMUM	102.4	110.5	385.2	37.3	486.1	96.7	156.1	382.8	36.2	485.9	668.6	663.5	3976.5

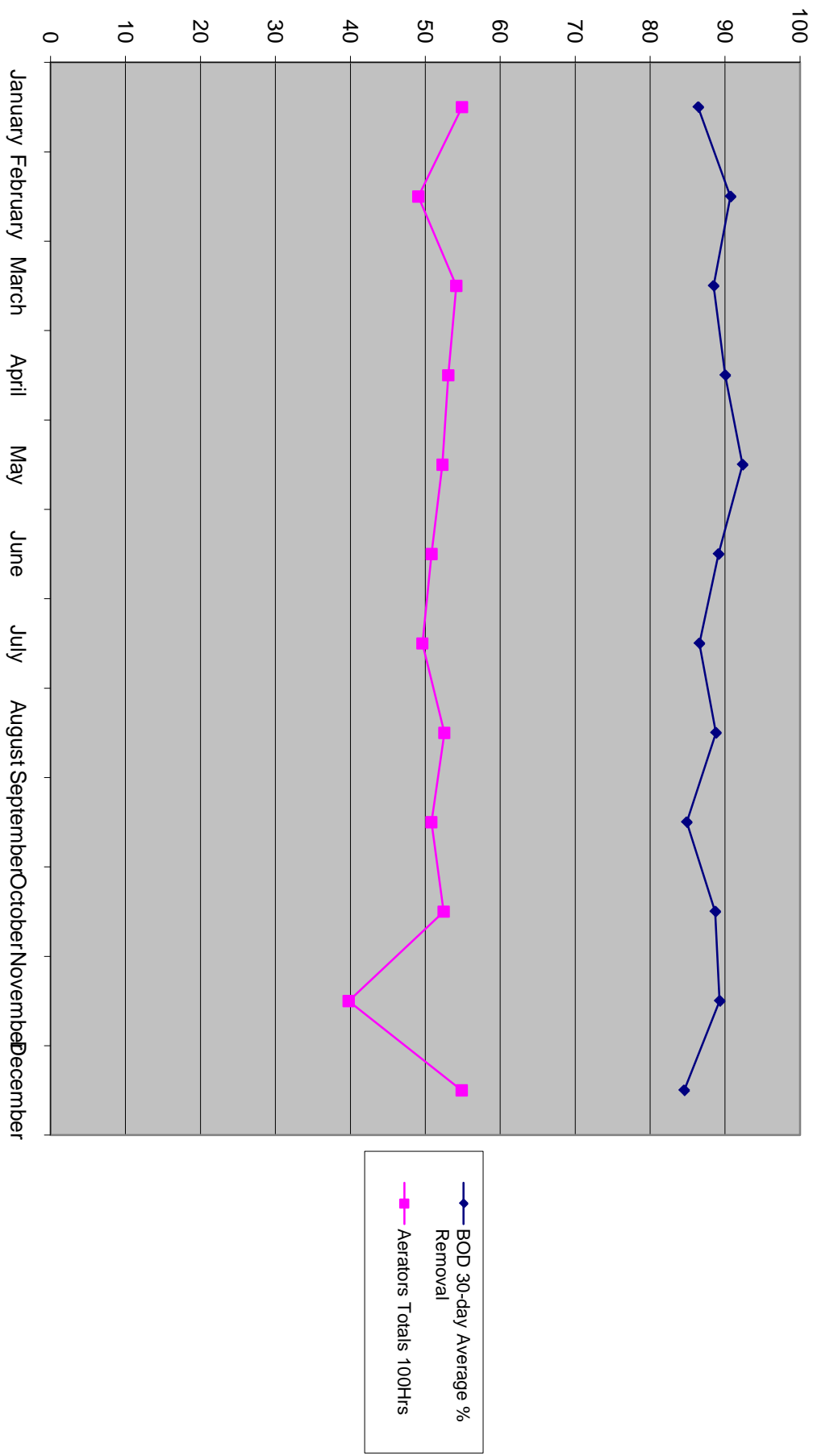
Aerator Hours Versus Ammonia Percent Removal



Aerator Hours Versus Effluent BOD



Aerator Hours Versus BOD 30-day Average % Removal



MCKINLEYVILLE COMMUNITY SERVICES DISTRICT
WASTEWATER MANAGEMENT FACILITY
ELECTRIC, CL₂, SO₂, WATER and RAIN DATA
ANNUAL 2010

DATE	PG&E kw Hours	CL ₂ USAGE lbs.	SO2 USAGE lbs.	RAIN inches
JANUARY	23520	2956	2	11.49
FEBRUARY	23280	4368	981	5.37
MARCH	25600	5420	1041	7.28
APRIL	25360	4666	1053	8.5
MAY	29120	4339	501	3.31
JUNE	31280	3139	56	3.34
JULY	28400	2836	37	0
AUGUST	29760	2105	29	0.06
SEPTEMBER	29680	3234	0	1.68
OCTOBER	28480	1994	0	4.96
NOVEMBER	26080	2960	29	5.86
DECEMBER	26000	4469	1036	11.27

TOTAL	326560	42486	4765	63.12
AVERAGE	27213	3541	397	5.26
MAXIMUM	31280	5420	1053	11.49
MINIMUM	23280	1994	0	0.00

WWMF WATER METER			
DATE	LOW	HIGH	CU.FT.
START	22493	34298	
END	24817	37460	5486

SPECIAL TESTING

DATE	INFLUENT			EFFLUENT		
	TKN	ALKALINITY	NITRATE	TKN	ALKALINITY	NITRATE
1/8/2010	58	230	ND	41	190	ND
1/15/2010	62	230	ND	36	190	ND
1/22/2010	70	220	ND	47	190	ND
1/29/2010	66	210	ND	41	160	ND
2/5/2010	81	210	ND	38	170	ND
2/12/2010	72	190	ND	40	170	ND
2/19/2010	73	260	ND	38	170	ND
2/26/2010	62	200	ND	38	170	ND
3/5/2010	63	220	ND	40	160	ND
3/12/2010	55	220	ND	29	170	ND
3/19/2010	56	250	ND	25	160	ND
3/26/2010	38	170	ND	33	160	ND
4/2/2010	51	190	ND	38	150	ND
4/9/2010	45	200	ND	29	160	ND
4/16/2010	81	240	ND	36	150	ND
4/23/2010	60	230	ND	33	160	ND
4/30/2010	51	210	ND	29	140	ND
5/7/2010	52	220	ND	30	150	ND
5/14/2010	56	220	ND	33	160	ND
5/21/2010	57	220	ND	35	170	ND
5/28/2010	63	240	ND	34	180	ND
6/4/2010	43	170	ND	35	160	ND
6/11/2010	62	210	ND	37	160	ND
6/18/2010	59	220	ND	41	160	ND
6/25/2010	44	190	ND	32	150	ND
7/9/2010	45	180	ND	32	140	ND
7/16/2010	74	300	ND	28	150	ND
7/23/2010	58	270	ND	31	170	ND
7/30/2010	87	300	ND	29	180	ND
8/6/2010	49	290	ND	31	180	ND
8/13/2010	45	310	ND	31	180	ND
8/20/2010	57	200	ND	33	170	ND
8/27/2010	54	260	ND	23	160	ND
9/3/2010	69	250	ND	25	130	ND
9/10/2010	85	280	ND	28	150	ND
9/17/2010	49	240	ND	27	160	ND
9/24/2010	73	240	ND	27	160	ND
10/1/2010	72	280	ND	39	200	ND
10/8/2010	85	270	ND	36	210	ND
10/15/2010	79	270	ND	47	230	ND
10/22/2010	74	260	ND	46	240	ND
10/29/2010	50	220	ND	37	220	ND
11/5/2010	84	280	ND	46	220	ND
11/12/2010	67	260	ND	32	220	ND
11/19/2010	98	280	ND	39	210	ND
11/24/2010	64	230	ND	41	200	ND
12/3/2010	62	230	ND	43	200	ND
12/10/2010	54	200	0.22	34	190	0.19
12/17/2010	85	220	0.2	41	200	0.19
12/22/2010	59	190	ND	38	180	ND
12/30/2010	47	190	ND	31	180	ND