



City of Nevada City

October 17, 2008

Diana Messina, Senior Engineer
NPDES – Sacramento Watershed Unit
Central Valley Water Board
11620 Sun Center Drive, Suite 200
Rancho Cordova, CA 95648

RE: City of Nevada City Waste Water Treatment Plant
Application for NPDES Permit No. CA D079901 Renewal

Dear Ms. Messina,

The City of Nevada City is in receipt of your tentative waste discharge requirements for the waste water treatment plant. The City received the documents for review on September 24, 2008, with final review to the State by October 24, 2008. These dates become very cumbersome because of our small staff having to hire consultants and for getting new data from other agencies. Due to the shortage of time for response, please find preliminary comments from two different consultants; therefore the City would like to consider Sauer Engineering and Ecologic Engineering as our representatives.

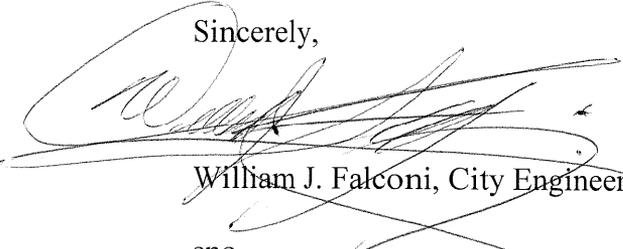
Water data available from others can verify the flow of water in Deer Creek as related to a potential dilution credit as well.

Inconsistence and errors in the tentative order make it hard to speak to the facts as we are not convinced that some of the data regarding our plant matches what you have on record at this time. These errors could be yours or ours; however, we have little time to verify.

In light of the fact that we are under such a short timetable and that the Board is scheduled to adopt new requirements for our plant by December 2008. It is very important that the newly adopted permit be flexible enough to be amended when new data is provided by the City prior to the scheduled full implementation in 2012. Your consideration of these matters would be greatly appreciated.

Enclosed please find comments from our consultants at Sauers Engineering and Ecologic Engineering.

Sincerely,



William J. Falconi, City Engineer

enc



Howard Schmitz, Chief Plant Operator

Sauers Engineering, Inc.

Civil & Environmental Engineers

October 17, 2008

Diana Messina, Senior Engineer
NPDES- Sacramento Watershed Unit
Central Valley Water Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

RE: CITY OF NEVADA CITY WASTEWATER TREATMENT PLANT
NPDES PERMIT NO. CA 0079901 RENEWAL
COMMENTS ON ADMINISTRATIVE DRAFT

Dear Ms. Messina:

The City of Nevada City is in receipt of the Tentative Waste Discharge Requirements for the City of Nevada City Wastewater Treatment Plant. We have reviewed the documents and offer the following comments:

1. **Schedule**

The City takes issue with the proposed schedule for the permitting process. After submitting the completed Report of Waste Discharge in March of 2007, the Regional Board took 18 months to assemble a tentative permit and gives the City less than 30 days to review the proposed waste discharge requirements and offer comments. Given the complexity of this document, with no Draft document prior to the Tentative Order, the City has had insufficient time to adequately assess their ability to comply with the Tentative Order.

2. **Public Hearing**

As consultants to the City of Nevada City for purposes of permit renewal we are hereby requesting status as a designated party for purposes of the public hearing for renewal of waste discharger requirements NPDES No. CA00799011

3. **Dilution**

No dilution credit was given for any of the effluent limitations contained in the proposed discharge requirements. The City is interested in pursuing the potential to receive credit for dilution in the receiving water because Deer Creek at the point of discharge is never an effluent dominated stream. Based on knowledge of annual discharges from Nevada Irrigation District through this section of Deer Creek, it is believed that the City can demonstrate minimum flows necessary for dilution credit.

It is requested that a Reopener Provision be added to allow recalculation of all effluent limitations once dilution factors have been established.

4. **BOD₅ and TSS Monitoring Requirements.** - Previous monitoring requirements were twice weekly. Proposed monitoring requirements are daily. Plant records (see attached) for BOD₅ and TSS indicate that the current plant does not have problems meeting these discharge requirements. Recent monitoring results for BOD and TSS are attached for reference.

Since the intent should be to establish a frequency of monitoring that will detect most events of noncompliance without requiring needless or burdensome monitoring, the current monitoring frequency of twice per week seems to have been adequate in the past. The City requests that the final order reflects continuation of the twice weekly monitoring for BOD₅ and TSS.

5. **Coliform Monitoring Requirements.**

Increased frequency of coliform testing is technically impossible for the City since the local laboratory is not open on weekends and the “hold time” for bacteria samples does not allow for holding the samples for more than 24 hours. Due to the limitation of an available laboratory, we suggest continuing to use the 3x per week requirement of the previous permit for coliform monitoring

6. **Ammonia Effluent Limit**

Section e. Ammonia Page F-11 states “The Discharger does not currently use nitrification to remove ammonia from the waste stream.” This statement is incorrect since the selector activated sludge basins allow for nitrification and denitrification and are operated accordingly.

The proposed new ammonia effluent limitation is based upon a maximum observed effluent pH of 8.2 with a maximum allowable pH of 8.5. Since, the treatment plant operators continually add caustic to raise the pH of the effluent prior to discharge, any effluent pH higher than 7.5 is an anomaly associated with maintenance activities that could easily be controlled if desired. Records indicate that monthly averages for pH over the last year have always been 7.0 or less. The City requests to have a lower effluent limit for pH that would translate to a higher effluent limit for Ammonia. The City proposes an effluent limit for pH of 7.5. Effluent limits for ammonia should subsequently be recalculated based upon a potential maximum pH of 7.5 with the same 30 day average maximum temperature of 22.8°C.

7. **Continuous DO Meter on the Effluent**

Table E-3 Effluent Monitoring requires a continuous measurement of dissolved oxygen at monitoring point M-001. It is understood that a lack of DO in the receiving water is an acute toxic parameter in a COLD freshwater aquatic habitat. The treatment plant’s

effluent receives significant aeration downstream from the last sampling point due to the cascading/aerating nature of the discharge. Measuring DO at the proposed location would not be representative of the DO of the effluent as it enters the receiving water. Since these are receiving water limitations, there is a weak correlation between the DO at the proposed monitoring location and receiving water limitations. The City requests that the requirement for continuous DO monitoring in Table E-3 be removed.

8. **Sludge Disposal Site**

Page F2, Section A indicates that sludge is hauled to the Redwood Landfill in Navato. Sludge is currently hauled to the Ostrom Road Landfill located at 5900 Ostrom Road in Wheatland, CA.

9. **Receiving Water Monitoring Requirements**

Monitoring location RSW-001 does not have a requirement for fecal coliform testing even though both RSW-002 and RSW-003 both include this requirement and this parameter was monitored at this site in the previous permit. The existing permit requires quarterly monitoring at all 3 sites.

Monitoring frequency for Electrical Conductivity at RSW-001 and RSW-003 are both 1/quarter yet RSW-002 is 1/week. The existing permit requires weekly monitoring at all 3 sites for EC and we anticipate that this requirement would be continued in the new permit.

10. **Cyanide**

The tentative permit states that the MEC for Cyanide was 13 µg/l based on 5 samples collected between April 2002 and April 2004. The City has no record of a laboratory result showing 13 µg/L. In fact, all test results within this time period are ND with the exception of one result at 2 µg/l which is below the CTR criterion quantitation limit of 5 µg/l for Cyanide. In other words, it is below the value that is reportable for CTR. Given the fact that cyanide has consistently tested below the CTR criterion, it should not be included as having a reasonable potential to cause or contribute to an in-stream excursion above the CTR standards for cyanide. Attached are the 5 CTR laboratory reports from Basic Laboratory showing cyanide test results during this testing period for your reference.

11. **Document Inconsistencies**

There are multiple inconsistencies in the tentative documents. The following are several examples of duplications, inconsistencies, and incorrect data contained in the tentative documents.

- a. Tentative Time Schedule Order, Page 2 requires the discharger to submit an infeasibility report within 30 days of the effective date of this order. This is consistent with page 4, but inconsistent with the Infeasibility Report Request. The Infeasibility Report Request required that an Infeasibility Report be submitted by

October 24, 2008 allowing for inclusion of time schedules in the Tentative Order. Yet, the Tentative Order has already been published with a proposed Time Schedule.

- b. In the Infeasibility Report Request, on the second page in fourth paragraph, it says that “The enclosed discharge permit summary proposes new effluent limitations for ammonia and selenium with which the discharger may be unable to immediately comply.” This paragraph appears to be evidence of cutting and pasting from another report and does not apply to Nevada City. The document also requests the City’s comments “preferably prior to the issuance of the Tentative Order”, yet this document was received the same day as the Tentative Order.
- c. Multiple pages of F1, F2 and F3 are included. These pages should be renumbered.
- d. On pages 4 and F2 the Description of Facilities refers to the existing facility as having sequencing batch reactors. The sequencing batch reactors were converted to selector activated sludge basins in the latest improvement project and this was made clear in the Report of Waste Discharge. The new plant configuration has been recognized in some sections of the tentative permit but missed in others. Secondary clarifiers were also added. The new permit should reflect the configuration of the existing facility.
- e. The last paragraph under *Salinity Effluent Limitations* on page F20 references historic electrical conductivity of the plant effluent. This paragraph is inconsistent with the last paragraph under Section r, ii Electrical Conductivity (EC) on page F21. The paragraph on F21 appears to reference erroneous data from another permit that is not applicable to the City’s effluent.
- f. Page 12, and Page F32 under Interim Effluent Limitations says “Not applicable”. This appears to be erroneous since the permit does establish interim effluent limitations.

With the numerous inconsistencies and errors, insufficient time was given to the City to respond with appropriate comments.

12. **Reopener Provisions**

The City requests that the final order include specific language in the Reopener Provisions allowing for recalculation of effluent limitations based upon information that may have not been available at the time of the Tentative Order.

The City would justify this request based upon two issues. First, the document contained inconsistencies that were difficult to reconcile with City information and in some cases did not reflect the City’s data. Second, due to the compressed time schedule the Regional

Board did not allow the City to review a draft document prior to the issuance of the Tentative Order.

13. **Hydroelectric Project**

The City is currently working on a small hydroelectric project that will generate electricity using the outfall from the treatment plant. This project allows the water from the treatment plant to be put to a beneficial use prior to discharge. The presence of the facility should be recognized in the Description of Facilities sections of the permit.

Downstream from monitoring point M-001, the proposed project will install a diversion structure on the existing 12" effluent pipe to divert the WWTP effluent to the new turbine. The discharge pipe from the turbine will be 12" diameter PVC and will discharge directly into Deer Creek. This project uses existing effluent flows and simply reroutes the flows to a parallel pipe that will discharge in the same permitted location in the Creek. The engineers designing the hydro-electric project indicate that there will be no change to the effluent quality or quantity as a result of this project.

If you have any questions regarding comments offered in this letter, please contact the office of Sauers Engineering, Inc. at 530-265-8021.

Sincerely,

Sauers Engineering, Inc.

A handwritten signature in black ink that reads "Dean Marsh". The signature is written in a cursive, flowing style.

Dean Marsh, P.E.

City of Nevada City Wastewater Treatment Plant
pH, BOD, and TSS Summary 07-08

	pH continuous avg.	BOD % Red.		BOD % Red.		TSS % Red.	
		Min.	Avg.	Min.	Avg.	Min.	Avg.
August-07	6.8	97.7%	98.6%	99.0%	99.5%		
September-07	6.9	94.6%	97.5%	96.2%	98.6%		
October-07	6.9	98.0%	98.7%	90.2%	98.7%		
November-07	6.8	98.2%	98.7%	97.8%	98.7%		
December-07	6.8	98.1%	98.7%	98.3%	99.2%		
January-08	6.9	97.4%	98.3%	98.2%	99.0%		
February-08	6.9	96.7%	98.4%	97.5%	98.9%		
March-08	7.0	97.6%	98.8%	97.6%	98.8%		
April-08	6.9	95.4%	98.2%	98.2%	99.0%		
May-08	7.0	98.3%	98.8%	96.7%	99.1%		
June-08	6.9	98.7%	99.0%	98.2%	99.2%		
July-08	7.0	98.5%	98.8%	95.7%	98.3%		
August-08	6.9	97.9%	99.1%	97.7%	98.3%		

Note October 07 TSS Reduction of 90.2% does seem to be an anomaly, our effluent TSS on the date in question showed 10 mg/L, and the next highest Effluent TSS test came in at 2 mg/L which leads me to believe the testing results may be questionable Our BOD effluent for the same day was 2 mg/L, and the avg. turbidity for the day was 0.76 NTU. For the entire year tested 96 out of 104 tests had results of 2mg/L or less TSS in the effluent.



basic
laboratory

www.basiclab.com

voice 530.243.7234 2218 Railroad Avenue
fax 530.243.7494 Redding, California 96001

Report To: NEVADA CITY
317 BROAD STREET
NEVADA CITY, CA 95959
Attention: RYAN LOVE
Project: CTR-PLUS
Description: EFFLUENT

Lab No: 4040874
Reported: 06/07/04
Phone: 265-8668
P.O. #

Lab ID: 4040874-02

Sampled: 04/29/04 09:15

Received: 04/29/04 16:04

General Chemistry

CTR #	Analyte	Units	Results	Qualifier	COL	MDL	RL	Method	Analyzed	Prepared	Batch
	Hardness	mg/l	57			1	3	SM 2340C	05/04/04	05/04/04	B4E0049
	pH	pH Units	6.79		0.1	0.01	0.01	SM 4500H+	04/29/04	04/29/04	B4D0586
	Specific Conductance	umhos/cm	395			2	10	SM 2510B	05/06/04	05/06/04	B4E0080
14	Cyanide - Total	ug/l	ND	DNQ	5	2	5	SM 4500CN E	05/11/04	05/11/04	B4E0199

Metals - Total

CTR #	Analyte	Units	Results	Qualifier	COL	MDL	RL	Method	Analyzed	Prepared	Batch
1	Antimony	ug/l	0.2	DNQ	5	0.1	0.5	EPA 200.8	05/10/04	05/07/04	B4E0119
2	Arsenic	"	1.6		1	0.1	0.5	"	"	"	"
3	Beryllium	"	ND		1	0.1	0.5	"	"	"	"
4	Cadmium	"	ND		0.25	0.05	0.25	"	"	"	"
5a	Chromium	"	0.2	DNQ	2	0.1	0.5	"	"	"	"
5b	Chromium, Hexavalent	"	ND		5	2	5	SM 3500-Cr	04/30/04	04/30/04	B4D0598
6	Copper	"	3.8		0.5	0.1	0.5	EPA 200.8	05/10/04	05/07/04	B4E0119
7	Lead	"	0.3	DNQ	0.5	0.1	0.5	"	"	"	"
8	Mercury	ng/l	6.07		0.5	0.20	0.50	EPA 1631	05/11/04	05/11/04	B4E0207
8	Mercury Field Blank	"	0.25	DNQ	0.5	0.20	0.50	"	"	"	"
9	Nickel	ug/l	1.4		5	0.2	1.0	EPA 200.8	05/10/04	05/07/04	B4E0119
10	Selenium	"	ND		5	0.4	2.0	"	"	"	"
11	Silver	"	ND		1	0.10	0.25	"	"	"	"
12	Thallium	"	ND		1	0.2	1.0	"	"	"	"
13	Zinc	"	33.5		10	0.4	2.0	"	"	"	"

Volatile Organic Compounds

CTR #	Analyte	Units	Results	Qualifier	COL	MDL	RL	Method	Analyzed	Prepared	Batch
17	Acrolein	ug/l	ND		5	2.0	2.0	EPA 8260	05/05/04	05/05/04	B4E0104
18	Acrylonitrile	"	ND		2	2.0	2.0	"	"	"	"
19	Benzene	"	ND		0.5	0.1	0.5	"	"	"	"
20	Bromodichloromethane	"	ND		0.5	0.1	0.5	"	"	"	"
27	Bromoform	"	ND		2	0.2	0.5	"	"	"	"
34	Bromomethane	"	ND		2	0.3	0.5	"	"	"	"
21	Carbon tetrachloride	"	ND		0.5	0.3	0.5	"	"	"	"
22	Chlorobenzene	"	ND		2	0.1	0.5	"	"	"	"
24	Chloroethane	"	ND		2	0.1	0.5	"	"	"	"
25	2-Chloroethylvinyl ether	"	ND		1	0.3	0.5	"	"	"	"
26	Chloroform	"	6.2		0.5	0.3	0.5	"	"	"	"
35	Chloromethane	"	ND		2	0.3	0.5	"	"	"	"
23	Dibromochloromethane	"	ND		0.5	0.1	0.5	"	"	"	"
75	1,2-Dichlorobenzene	"	ND		2	0.1	0.5	"	"	"	"
76	1,3-Dichlorobenzene	"	ND		2	0.1	0.5	"	"	"	"
77	1,4-Dichlorobenzene	"	0.4		2	0.1	0.5	"	"	"	"
28	1,1-Dichloroethane	"	ND		1	0.2	0.5	"	"	"	"
29	1,2-Dichloroethane	"	ND		0.5	0.1	0.5	"	"	"	"
30	1,1-Dichloroethene	"	ND		0.5	0.2	0.5	"	"	"	"

Approved By: 
Basic Laboratory, Inc.
California D.O.H.S. Cert #1677



BASIC LABORATORY, INC.

WATER CODE SECTION 13287 (CTR) - INORGANICS

Report To: NEVADA CITY
317 BROAD STREET
NEVADA CITY, CA 95959

Attention: JIM WOFFARD

Lab Number: 0204503-2
Date: 05/21/02
Phone: 265-8668
Date/Time Sampled: 04/16/02 1:45
Date Received: 04/17/02
P.O. #:
Page 2 of 2 - Inorganics

Description: EFFLUENT WATER

<u>CTR No.</u>	<u>Method</u>	<u>Test</u>	<u>Units</u>	<u>Results</u>	<u>Qualifier</u>	<u>CQL</u>	<u>MDL</u>	<u>RL</u>	<u>Date Analyzed</u>
	4500 F	Fluoride	mg/l	ND		0.1	0.05	0.16	04/22/02
	350.1	Ammonia @ N	mg/l	0.07	DNQ-Est.Conc.		0.05	0.15	04/18/02
	300.0	Chloride	mg/l	47.5			0.20	0.64	04/19/02
14	4500CN	Cyanide	ug/l	ND ←		5	2	5	04/29/02
	2340	Hardness	mg/l	75			1	3	04/17/02
	5540C	MBAS	mg/l	0.26			0.01	0.03	04/19/02
	353.2	Nitrate @ N	mg/l	3.80		2	0.05	0.16	04/19/02
	4500 NO2	Nitrite @ N	mg/l	ND		0.4	0.01	0.03	04/17/02
	4500-H+	pH	units	6.71			0.01	0.03	04/17/02
	4500 P	Total Phosphorus @ P	mg/l	0.80			0.02	0.05	04/19/02
	2510	Specific Conductance	umhos/cm	431			2	6	04/18/02
	300.0	Sulfate	mg/l	28.1		0.5	0.40	1.28	04/19/02
	4500 S	Sulfide @ S	ug/l	ND			20	60	04/18/02
	4500 SO3	Sulfite @ SO3	mg/l	3	DNQ - Est. Conc.		2	6	04/17/02
	2540	Total Dissolved Solids	mg/l	233			2	6	04/17/02

Comments: California D.O.H.S. Cert. #1677.
ND - Not detected. RL - Minimum Level of Quantitation.
MDL- Method Detection Limit. DNQ Est. Conc. - Detected, but not Quantified.
ug/l - Microgram/liter. CQL - Criterion Quantitation Limit.

Reported by:

BASIC LABORATORY, INC.

WATER CODE SECTION 13267 (CTR) - INORGANICS

Report To: NEVADA CITY
317 BROAD ST.
NEVADA CITY CA 95959

Attention: JIM WAFFORD

Lab Number: 0207532-2
Date: 09/05/02
Phone: 265-8668
Date/Time Sampled: 07/16/02/10:15
Date Received: 07/16/02
P.O. #:

Page 2 of 2 - Inorganics

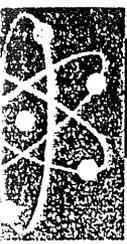
Description: EFFLUENT WATER

<u>CTR No.</u>	<u>Method</u>	<u>Test</u>	<u>Units</u>	<u>Results</u>	<u>Qualifier</u>	<u>CQL</u>	<u>MDL</u>	<u>RL</u>	<u>Date Analyzed</u>
	4500 F	Fluoride	mg/l	0.12		0.1	0.03	0.09	07/19/02
	350.1	Ammonia @ N	mg/l	0.10	DNQ - Est. Conc.		0.05	0.15	07/22/02
	300.0	Chloride	mg/l	42.8			0.20	0.64	07/22/02
14	4500CN	Cyanide	ug/l	ND ←		5	2	5	07/29/02
	2340	Hardness	mg/l	73			1	3	07/22/02
	5540C	MBAS	mg/l	0.04			0.01	0.03	07/23/02
	353.2	Nitrate @ N	mg/l	2.39		2	0.05	0.16	07/18/02
	4500 NO2	Nitrite @ N	mg/l	ND		0.4	0.01	0.03	07/18/02
	4500-H+	pH	units	6.69			0.01	0.03	07/16/02
	4500 P	Total Phosphorus @ P	mg/l	1.41			0.02	0.05	07/26/02
	2510	Specific Conductance	umhos/cm	395			2	6	07/19/02
	300.0	Sulfate	mg/l	23.2		0.5	0.40	1.28	07/22/02
	4500 S	Sulfide @ S	ug/l	ND			20	60	07/23/02
	4500 SO3	Sulfite @ SO3	mg/l	ND			2	6	07/17/02
	2540	Total Dissolved Solids	mg/l	206			2	6	07/18/02

Comments: California D.O.H.S. Cert. #1677.
ND - Not detected. RL - Minimum Level of Quantitation.
MDL- Method Detection Limit. DNQ Est. Conc. - Detected, but not Quantified.
ug/l - Microgram/liter. CQL - Criterion Quantitation Limit.

Reported by:

Bernice Kidd



BASIC LABORATORY, INC.

WATER CODE SECTION 13267 (CTR) - INORGANICS

Report To: NEVADA CITY
317 BROAD ST.
NEVADA CITY CA 95959

Lab Number: 0301605-2
Date: 02/21/03
Phone: 265-8668
Date/Time Sampled: 01/21/03/08:15
Date Received: 01/21/03
P.O. #:
Page 2 of 2 - Inorganics

Attention: JIM WOFFORD

AMENDED

Description: EFFLUENT WATER

<u>CTR No.</u>	<u>Method</u>	<u>Test</u>	<u>Units</u>	<u>Results</u>	<u>Qualifier</u>	<u>CQL</u>	<u>MDL</u>	<u>RL</u>	<u>Date Analyzed</u>
14	4500 F	Fluoride	mg/l	0.08	DNQ - Est. Conc.	0.1	0.03	0.09	01/24/03
	350.1	Ammonia @ N	mg/l	0.07	DNQ - Est. Conc.		0.05	0.15	01/22/03
	300.0	Chloride	mg/l	40.8			0.20	0.64	01/22/03
	4500CN	Cyanide	ug/l	ND ←		5	2	5	01/24/03
	2340	Hardness	mg/l	68			1	3	01/24/03
	5540C	MBAS	mg/l	0.19			0.01	0.03	01/24/03
	353.2	Nitrate @ N	mg/l	1.12		2	0.05	0.16	01/21/03
	353.2	Nitrite @ N	mg/l	0.01	DNQ - Est. Conc.	0.4	0.01	0.03	01/21/03
	4500-H+	pH	units	6.88			0.01	0.03	01/21/03
	4500 P	Total Phosphorus @ P	mg/l	0.26			0.02	0.05	01/27/03
	2510	Specific Conductance	umhos/cm	422			2	6	01/24/03
	300.0	Sulfate	mg/l	34.6		0.5	0.40	1.28	01/22/03
	4500 S	Sulfide @ S	ug/l	ND			20	60	01/22/03
	4500 SO3	Sulfite @ SO3	mg/l	8			2	6	01/21/03
2540	Total Dissolved Solids	mg/l	231			2	6	01/23/03	

Comments: California D.O.H.S. Cert. #1677.
ND - Not detected. RL - Minimum Level of Quantitation.
MDL - Method Detection Limit. DNQ Est. Conc. - Detected, but not Quantified.
ug/l - Microgram/liter. CQL - Criterion Quantitation Limit.
Amended on 3/3/03 to show correct lab number and correct Date/Time Sampled.

Reported by: 



530.243.7234 2218 Railroad Avenue
 530.243.7494 Redding, California 96001

WATER CODE SECTION 13267 (CTR) - INORGANICS

Report To: NEVADA CITY
 317 BROAD ST.
 NEVADA CITY CA 95959

Lab Number: 0210541-2
 Date: 11/12/02
 Phone: 265-8668
 Date/Time Sampled: 10/15/02 1:00

Attention: JIM WAFFORD

Amended**

Date Received: 10/15/02
 P.O. #:

Page 2 of 2 - Inorganics

Description: EFFLUENT WATER

CTR No.	Method	Test	Units	Results	Qualifier	CQL	MDL	RL	Date Analyzed
	4500 F	Fluoride	mg/l	0.16		0.1	0.03	0.09	10/23/02
	350.1	Ammonia @ N	mg/l	0.46			0.05	0.15	10/25/02
	300.0	Chloride	mg/l	38.9			0.20	0.64	10/22/02
14	4500CN	Cyanide	ug/l	2 ←	DNQ - Est. Conc.	5	2	5	10/18/02
	2340	Hardness	mg/l	96			1	3	10/16/02
	5540C	MBAS	mg/l	0.15			0.01	0.03	10/24/02
	353.2	Nitrate @ N	mg/l	3.68		2	0.05	0.16	10/17/02
	353.2	Nitrite @ N	mg/l	0.01	DNQ - Est. Conc.	0.4	0.01	0.03	10/17/02
	4500-H+	pH	units	6.99			0.01	0.03	10/16/02
	4500 P	Total Phosphorus @ P	mg/l	0.69			0.02	0.05	10/24/02
	2510	Specific Conductance	umhos/cm	429			2	6	10/16/02
	300.0	Sulfate	mg/l	23.9		0.5	0.40	1.28	10/22/02
	4500 S	Sulfide @ S	ug/l	20	DNQ - Est. Conc.		20	60	10/21/02
	4500 SO3	Sulfite @ SO3	mg/l	5	DNQ - Est. Conc.		2	6	10/16/02
	2540	Total Dissolved Solids	mg/l	251			2	6	10/23/02

Comments: California D.O.H.S. Cert. #1677.

ND - Not detected. RL - Minimum Level of Quantitation.

MDL - Method Detection Limit. DNQ Est. Conc. - Detected, but not Quantified.

ug/l - Microgram/liter. CQL - Criterion Quantitation Limit.

**Amended on 12/19/03 to correct the cyanide result. The original result was miscalculated by the laboratory.

Reported by:

BASIC LABORATORY, INC.

WATER CODE SECTION 13267 (CTR) - INORGANICS

Report To: NEVADA CITY
317 BROAD ST.
NEVADA CITY CA 95959

Lab Number: 0210539-2
Date: 02/21/03
Phone: 265-8668
Date/Time Sampled: 10/15/02 08:15
Date Received: 01/21/03
P.O. #:
Page 2 of 2 - Inorganics

Attention: JIM WOFFORD

Description: EFFLUENT WATER

<u>CTR No.</u>	<u>Method</u>	<u>Test</u>	<u>Units</u>	<u>Results</u>	<u>Qualifier</u>	<u>CQL</u>	<u>MDL</u>	<u>RL</u>	<u>Date Analyzed</u>
	4500 F	Fluoride	mg/l	0.08	DNQ - Est. Conc.	0.1	0.03	0.09	01/24/03
	350.1	Ammonia @ N	mg/l	0.07	DNQ - Est. Conc.		0.05	0.15	01/22/03
	300.0	Chloride	mg/l	40.8			0.20	0.64	01/22/03
14	4500CN	Cyanide	ug/l	ND ←		5	2	5	01/24/03
	2340	Hardness	mg/l	68			1	3	01/24/03
	5540C	MBAS	mg/l	0.19			0.01	0.03	01/24/03
	353.2	Nitrate @ N	mg/l	1.12		2	0.05	0.16	01/21/03
	353.2	Nitrite @ N	mg/l	0.01	DNQ - Est. Conc.	0.4	0.01	0.03	01/21/03
	4500-H+	pH	units	6.88			0.01	0.03	01/21/03
	4500 P	Total Phosphorus @ P	mg/l	0.26			0.02	0.05	01/27/03
	2510	Specific Conductance	umhos/cm	422			2	6	01/24/03
	300.0	Sulfate	mg/l	34.6		0.5	0.40	1.28	01/22/03
	4500 S	Sulfide @ S	ug/l	ND			20	60	01/22/03
	4500 SO3	Sulfite @ SO3	mg/l	8			2	6	01/21/03
	2540	Total Dissolved Solids	mg/l	231			2	6	01/23/03

Comments: California D.O.H.S. Cert. #1677.
ND - Not detected. RL - Minimum Level of Quantitation.
MDL- Method Detection Limit. DNQ Est. Conc. - Detected, but not Quantified.
ug/l - Microgram/liter. CQL - Criterion Quantitation Limit.

Reported by:



Suggested Additional Revisions to the City of Nevada City Tentative Order

Location in Tentative Order	Suggested Revision
Table 2	Delete the “-“ in front of the longitude.
II.B.	The treatment system description is incorrect. The current treatment system description is screening, grit removal, lime addition for pH control, biological treatment using nitrification/denitrification activated sludge, secondary clarification, filtration (cloth disc filters and sand filters in parallel operation), chlorination for pathogen reduction, and dechlorination to prevent chlorine toxicity in the receiving water. The Attachment C - Flow Schematic needs to be modified to show “lime addition” at the end of the grit channels. The Facility Description in the Fact Sheet also needs to be modified to reflect the foregoing.
Table 5	Delete footnotes 3 and 4 because these species are not present in Deer Creek at Discharge Point 001 as a result of a downstream dam (Lake Wildwood).
II.M.	This Order does not include effluent limitations on turbidity, pathogens, or trihalomethanes (chloroform); therefore, reference to these pollutants in the 3 rd sentence of this section should be deleted. Additionally, settleable solids should be deleted if the Regional Water Board agrees with the City’s request to drop this effluent limitation based on recent Regional Water Board policy for treatment processes having effluent filters. The deletion of settleable solids should also be reflected in Table 6. Total coliform organisms and total residual chlorine should be added to the list for completeness. The seventh sentence reference to turbidity should be deleted. In the seventh sentence, reference to “pathogens” should be replaced with “pathogen indicators”.
IV.A.1	In the 1 st paragraph, Monitoring Location “M-001” should be changed to “EFF-001” to be consistent with the attached MRP. This change should be made globally throughout the Tentative Order.
Table 6	All effluent limitations should be rounded to 2-place accuracy per SIP. Settleable solids effluent limitations should be deleted based on the use of effluent filtration. From the Fact Sheet, it appears that the intent is to have a nitrite (as N) effluent limitation of 1 mg/L, which is not shown in Table 6. Suggested revisions to water-quality based effluent limitations on copper, zinc, and ammonia are presented at the end of this document based on new information. Based on these analyses, there is no reasonable potential for copper and zinc; and therefore these constituents should be deleted from Table 6 and related references throughout the Order. The effluent limitation on instantaneous maximum pH should be reduced to 8.0 as discussed in the attached sheets. MDEL and AMEL for ammonia should be changed to 5.8 mg/L and 2.0 mg/L, respectively, as documented in the attached sheets.
IV.A.1.d	The electrical conductivity limit of 415 μ mhos/cm is different from the 416 μ mhos/cm limitation established in the Fact Sheet. In either case, the value should be rounded to 2-place accuracy (i.e., 420 μ mhos/cm) per SIP. Potential problems with the 420 μ mhos/cm limit are that 1) it is based on a limited dataset (only four complete annual averages: 2003, 2004, 2005, and 2006) that does not include the potential salt concentrating effects of droughts, and 2) it discourages water conservation by the City and its residents. More appropriate limitations are: <ul style="list-style-type: none"> ▪ 700 μmhos/cm so that City residents can maximize water conservation to the extent possible without compromising water quality in Deer Creek and downstream waters. ▪ Potable water supply EC plus 500 μmhos/cm so that City effluent salinity compliance is not at the whim of NID, the water purveyor, and how it wheels and treats the surface water that becomes the City’s water supply. This limitation would also allow more water conservation.
V.A.7	The City requests a one month averaging period for determining compliance with the 0.5 limitation on the change in pH in the receiving water. This averaging period is described in the Fact Sheet (Section F.V.A.1.i), but was not carried forward into the main body of the Order.
V.A.15	The City’s treatment process does not have a coagulation step prior to filtration; therefore the parenthetical reference to coagulation should be deleted.

Location in Tentative Order	Suggested Revision
VI.C.1	<p>The City requests addition of a subsection “g.” to this section disclosing that the Order may be reopened if the City demonstrates via a Mixing Zone and Dilution Study that dilution credits “D” may be available. The City requests permit language similar to, or equivalent to, that included in the City of Angels Order:</p> <p style="padding-left: 40px;">g. <i>Mixing Zone Study. Section 1.4.2.2 of the SIP requires the Discharger to submit receiving water mixing zone studies prior to allowing dilution credits for certain pollutants. Therefore, the Discharger may elect, as a means of compliance, to conduct a mixing zone study to evaluate any available assimilative capacity in Deer Creek. When requested, the Regional Water Board will review such studies and if warranted, may reopen this permit to make appropriate changes to the effluent limitations.</i></p>
VI.C.1.c	<p>The following language needs to be deleted from the 1st and 2nd sentences because this Order does not include an interim mass effluent limitation on mercury:</p> <ul style="list-style-type: none"> ▪ Delete from 1st sentence: “the interim mass effluent limitation modified (higher or lower) or” ▪ Delete from 2nd sentence: “the interim mercury mass loading limitation(s) and”
VI.C.2.a	<p>The subsections under this section are mis-labeled i, i, ii, and iii. These should be re-labeled i, ii, iii, and iv. Also under ii (current labeling) or iii (proposed re-labeling), the numeric toxicity monitoring trigger of >1Tuc is not in concert with the inherent variability in the chronic bioassay test. The City is of the opinion that a Tuc greater than 1 will occur randomly from time-to-time as a result of random differences in the health of the individual organisms assigned to the control test versus the effluent test. When there is no statistical difference in organism health between the control test and effluent test, there is no problem. This is the usual case. When the control test organisms are of slightly poorer health than the effluent test organisms, there is no problem because an NOEC of 100% can be calculated from such a dataset. However, when the effluent test organisms are of slightly poorer health than the control test organisms, an NOEC of 100% may not be calculated from the dataset even if there is no toxicity in the effluent. This occasional random problem with the chronic bioassay test will trigger accelerated chronic bioassay monitoring based on the proposed >1Tuc trigger. Accelerated monitoring is expensive because it is custom bioassay work, and involves more duplicates and controls to minimize the chances of a second “random” NOEC result of less than 100% causing a TRE which is very expensive, when there is no toxicity in the effluent. A less sensitive trigger is needed when interpreting results from a very sensitive test, such as the chronic bioassay test. The City suggests a chronic bioassay accelerated monitoring trigger somewhat similar to the acute bioassay effluent limitation which allows a minor amount of toxicity to be present (specifically a median of no less than 90% survival, with a minimum of 70% survival in any test). Similar language allowing a minor amount of toxicity (real or statistical) to be present in chronic bioassay results from time-to-time without triggering the defacto “fine” of performing accelerated chronic bioassay monitoring may read something like the following:</p> <ul style="list-style-type: none"> ▪ An LOEC of less than 100% for any result from a single chronic bioassay test shall trigger accelerated monitoring. ▪ A median NOEC of less than 100% for any result from any three consecutive chronic bioassay tests shall trigger accelerated monitoring.
VI.C.2.a.iv	<p>Footnote 2 closing this subsection has a formatting error (two 2’s) in the actual footnote at the bottom of the page.</p>
VI.C.5.e.i	<p>The value “2” is missing for the daily average turbidity requirement.</p>

Location in Tentative Order	Suggested Revision
VI.C.6.a	<p>This section needs to be revised to read as follows:</p> <p align="center"><i>“Wastewater shall be oxidized, filtered, and disinfected to achieve the effluent turbidity and total coliform requirements specified in DPH reclamation criteria, California Code of Regulations, Title 22, Division 4, Chapter 3, for disinfected tertiary recycled water.”</i></p> <p>This change is necessary because the City’s treatment process does not have a coagulation step, and the chlorination system does not have a modal contact time of at least 90 minutes under peak dry weather design flow. The treatment process also does not have all of the monitoring, alarm, and redundancy features required in Title 22.</p>
VII	<p>“Compliance Determination” may need a subsection E “Receiving Water Limitations” if two downstream monitoring locations (RSW-002 and RSW-003) are to continue in operation. The City requests that RSW-003 be eliminated as no longer being necessary (as will be discussed under “Table E-1”). If this request is granted, then compliance determination for the receiving water limitations is self-evident, and therefore a discussion of how to determine compliance is unnecessary. However, if this request to eliminate RSW-003 is denied such that there continues to be two downstream receiving water monitoring locations, then there needs to be a discussion of how compliance is determined. As an example, is the temperature difference between RSW-001 and RSW-002 or between RSW-001 and RSW-003 used to determine compliance with the receiving water limitation on temperature change? If both are used, does this constitute “double jeopardy”? If both are used, and the RSW-001/RSW-002 data are compliant, but the RSW-001/RSW-003 data are not, what mechanism explains how the effluent can be responsible for the temperature increase between RSW-002 and RSW-003 that caused a non-compliant change in creek temperature between RSW-001 and RSW-003?</p>
IX.A.1.b	<p>There are no sludge ponds; therefore, this subsection should be deleted, and the remaining subsections re-labeled for format consistency.</p>
Attachment C	<p>As noted previously, “Lime Addition” should be added to the flow schematic just downstream of the grit chambers. In addition, the arrow showing effluent flowing around the filters should be eliminated because it implies the City bypasses some effluent around the filters. This does not occur, except in response to some emergency which would be reported to the Regional Water Board as an emergency bypass per the Standard Provisions.</p>
Attachment E	<p>References to the “Department of Health Services” should be changed to the “Department of Public Health” as appropriate, and references to “DHS” should be changed to “DPH” as appropriate.</p>
Table E-1	<p>The City requests that RSW-003 be eliminated based on the City treatment process having nitrification/denitrification activated sludge and effluent filters. Effluent BOD and NOD (nitrogenous oxygen demand) are now sufficiently low to not warrant the time and expense of a second downstream monitoring location developed originally to detect a dissolved oxygen sag resulting from effluent BOD and NOD. The more real concerns today are 1) direct effluent impacts on the receiving water (as would be most evident at RSW-002, not RSW-003), and 2) secondary effluent impacts on receiving water DO and pH as a result of effluent biostimulation in the creek. Effluent biostimulation effects should also be most evident in the immediate vicinity of the effluent discharge (i.e., at RSW-002, not RSW-003) in a turbulent stream such as Deer Creek. The City is aware of no reason warranting the time and expense of monitoring two receiving water locations downstream from the discharge of an equivalent tertiary effluent to a turbulent foothill/mountain stream.</p>
Table E-1 (informational)	<p>As an informational item only, the City may be proposing to change the location(s) of the receiving water monitoring stations so that the sampling locations have more similar hydraulic and environmental settings. A request to change this aspect of the MRP may be submitted to the Regional Water Board once the City’s on-going field study of this matter is completed.</p>
Table E-2	<p>Monitoring influent BOD, pH, and TSS at a frequency of “1/day” (i.e., every day of year) is excessive and a financial burden for a minor discharger such as the City. This monitoring frequency should be no more than 1/week based on both technical need and precedent from other recent Orders.</p>

Location in Tentative Order	Suggested Revision
Table E-3	The frequency of effluent monitoring for this minor discharge seems excessive for many constituents. Effluent BOD, TSS, and coliform monitoring should be no more than 2/week, and probably 1/week based on the type and stability of the treatment process being used, including the filters and flow equalization facilities. Nitrate and nitrite monitoring should be reduced to 1/month based on the pH data (1/day) and ammonia data (1/week) being adequate surrogate indicators of whether the denitrification aspect of the process is operating correctly.
Table E-3	Under "Flow", mgd should be changed to MGD to be consistent with the rest of the Order.
E.V.B.7	Reference to Table "E-5" needs to be changed to "E-4". The 2 nd sentence in this section needs to be followed by an additional sentence (as shown below) to clarify how and when accelerated chronic toxicity monitoring is triggered. <i>If toxicity is found in any effluent test, the Discharger must immediately retest using the dilution series identified in Table E-4, below. The results from this dilution series chronic toxicity test will be used to determine if the numeric toxicity monitoring trigger has been exceeded such that accelerated chronic toxicity testing is necessary.</i>
E.V.B.8.b	The reference to "VI.C.2.a.ii" should read "VI.C.2.a.iii".
Table E-4	"% Receiving Water" should have a footnote reading, "If the receiving water is not toxic, otherwise use laboratory water in place of receiving water for effluent dilution purposes."
E.VIII.C, and Table E-5c	These need to be deleted if RSW-003 is eliminated as requested by the City.
Fact Sheet	In the Tentative Order, the page numbers read F-1, F-2, F-3, F-1, F-2, F-1, F-2, F-3, F-4, etc. This early repeating of page numbers needs to be cleaned up.
F.II	In the last sentence of the 1 st paragraph, "experience" needs to read "experienced".
F.II.A	As noted previously, the Facility Description needs to be updated to reflect the current process.
F.II.B.2	The word "Latitude" should be changed to "latitude".
F.II.E	In the 2 nd sentence "effluent the" needs to change to "the effluent", and "adjustments" should change to "adjustment".
F.III.C.1	In the 4 th paragraph, 3 rd sentence, "State regulated" needs to change to "State be regulated".
F.III.C.2	In the last sentence, "Resolution 68-16" should change to "Resolution No. 68-16" to be consistent throughout the Order.
F.IV.C.2.b	Since the treatment process has been converted from SBRs to conventional nitrification/denitrification activated sludge, and the associated lime-based pH control system has been adjusted accordingly, the lowest recorded effluent hardness has been 41 mg/L, not 21 mg/L. The typical effluent hardness range for the current treatment process is 50 to 80 mg/L. The City requests that a minimum effluent hardness of 41 mg/L be used in the calculation of effluent limitations for the new treatment process based on this new information. An effluent hardness of 41 mg/L is used in the effluent limitation calculations at the end of this document for copper and zinc.
F.IV.C.2.b	The "Assimilative Capacity/Mixing Zone" subsection should be "F.IV.C.2.c", not "F.IV.C.2.b".
F.IV.C.3.b	In the last sentence, "Table F-5" should be changed to "Table F-4".

Location in Tentative Order	Suggested Revision
F.IV.C.3.e	The 4 th sentence should be changed to read “The Discharger currently uses nitrification to remove ammonia from the waste stream”. Additionally, this section needs to be revised to reflect the City’s requested change in effluent pH limitations (see the “Table 6” comments) and the other new information reflected in the ammonia effluent limitation calculations provided at the end of this document. As an example, when calculating the 30-day CCC for ammonia, the City believes the maximum observed rolling 30-day average temperature of the effluent should be used along with the 30-day average pH of the effluent during the high temperature event (not the instantaneous maximum pH that occurred during the 30-day high temperature event as reported in the Fact Sheet). The Fact Sheet reports the high temperature event occurred in July 2006. These effluent data and resulting ammonia effluent limitation calculations are provided at the end of this document. Tables 6, F-5, F-11, and the “Summary” table (on page F-31) need to reflect these changes.
F.IV.C.3.i	This section should be revised to reflect a minimum effluent hardness of 41 mg/L since the operational and treatment process changes. The resulting copper effluent limitation calculations are provided at the end of this document. Tables 6, F-6, F-11, and the “Summary” table (on page F-31) need to reflect these changes.
F.IV.C.3.l	“Subsection p. Salinity” should be changed to “Subsection r. Salinity Effluent Limitations”.
F.IV.C.3.m	The minimum effluent hardness should be changed from 20.6 mg/L to 41 mg/L, and the CCC and CMC changed accordingly for accuracy and completeness.
F.IV.C.3.p	In the 2 nd paragraph, 3 rd sentence “currently treats effluent to Title 22 treatment requirements” needs to be changed to “currently treats effluent to equivalent tertiary treatment requirements for turbidity and total coliform”.
F.IV.C.3.r	The last paragraph of this section prior to subsection “l” will need to be revised if the EC limitation is revised as requested to allow improved water conservation by City residents.
F.IV.C.3.r.ii	In the 2 nd sentence, “nota” needs to be changed to “not”.
F.IV.C.3.t	This section should be revised to reflect a minimum effluent hardness of 41 mg/L since the operational and treatment process changes. The resulting zinc effluent limitation calculations are provided at the end of this document. Tables 6, F-7, F-11 and the “Summary” table (on page F-31) need to reflect these changes.
F.IV.C.4.c	The B for carcinogens is not equal to the maximum receiving water concentration based on SIP protocol. Please make the needed correction.
Table F-5	Needs to be revised per the attached effluent limitation calculation for ammonia.
Table F-6	Needs to be revised per the attached effluent limitation calculation for copper.
Table F-7	Needs to be revised per the attached effluent limitation calculation for zinc.
Table F-11	Needs to be revised to reflect revised ammonia, copper, and zinc effluent limitations.
F.IV.D.2	This section needs to be revised to reflect that there is no effluent limitation for turbidity.
“Summary” table on page F-31	This table needs to be revised to reflect: <ul style="list-style-type: none"> ▪ 2-place accuracy per SIP ▪ No settleable solids limitations, copper, and zinc (based on the attaché calculations). ▪ Revised effluent limitations on pH, ammonia, and possibly EC if the Regional Water Board wishes to encourage water conservation.
F.V.A.1	In the 5 th sentence, the listing of Surface Water Limitations purportedly in this Order is not consistent with the actual listing of Surface Water Limitations in the Order. This discrepancy should be corrected.
F.VI.C.1 and 2	These sections of the Fact Sheet have the frequency of toxicity monitoring reversed. Acute toxicity testing is conducted quarterly (see section E.V.A.1), and chronic toxicity testing is conducted semi-annually (see section E.V.B.1).

Suggested Additional Revisions to the Tentative Order for the City of Nevada City

Location in Tentative Order	Suggested Revision
F.VIII.B.1.a	This Order does not include pollution prevention plans, therefore this subsection should be deleted, and the following subsections relabeled for format consistency.
F.VIII.B.2.a	The "Monitoring Trigger" section would need to be revised if the Regional Water Board accepts the City's proposal to include alternative monitoring trigger language and numeric triggers.
F.VIII.B.3.a	The phrase "to the unnamed tributary to Deer Creek" should be changed to "to Deer Creek".
F.VIII.B.4.i	"2" has to be added in front of "NTU".

See attached sheets for calculation of effluent limitations for ammonia, copper, and zinc.

Ammonia Effluent Limitation Calculations (and Associated Data)

In July 2006, the monthly average effluent temperature was 22.8°C (per Fact Sheet, and confirmed with the chief operator). The average effluent pH during this same period was 6.8. The instantaneous maximum pH was 8.3 related to NaOH use in cleaning the chlorine contact basin. The Tentative Order uses a maximum pH of 8.2 in calculating the 30-day CCC. This appears to be an error based on Federal guidance. Using a pH of 6.8 rather than 8.2 for a temperature of 22.8°C increases the 30-day ammonia (as N) CCC from about 1.05 mg/L (Fact Sheet) to about 3.69 mg/L (interpolation from Table 3 of Federal ammonia guidance). Based on using a chronic ECA multiplier of 0.56 (per the Fact Sheet) the LTA (chronic) would be 2.07 rather than 0.59 (shown in Table F-5.)

The treatment process adds lime to maintain a wastewater pH in the 6.5 to 7.0 range to facilitate effective nitrification and denitrification. The average effluent pH is in the 6.8 to 7.0 range. Excursions above a pH of 8.0 are rare, and are a result typically of NaOH cleaning of the chlorine contact basin. Based on an instantaneous effluent pH limit of 8.5, the operators have allowed “first effluent” through a freshly cleaned basin to be discharged, thus causing brief spikes in effluent pH up to around 8.3. Based on this practice necessitating a very low effluent limitation on ammonia, the operations staff is now prepared to divert this “first effluent” back to the headworks for retreatment such that the instantaneous maximum effluent will not exceed 8.0. Based on this maximum pH, the acute ammonia criterion is 5.62 mg/L (as N). Using an acute ECA multiplier of 0.15 (per the Fact Sheet), the LTA (acute) would be 0.843 rather than 0.32 as shown in Table F-5.

The lower of the two recalculated LTAs is 0.843. Multiplying this LTA by 2.38 (per the Fact Sheet) results in an AMEL of 2.0 mg/L. Multiplying this LTA by 6.86 (per the Fact Sheet) results in an MDEL of 5.8 mg/L.

The City requests that Table 6 and the Fact Sheet (text and Tables F-5, F-11, and Summary) be revised to reflect this new information.

Copper Effluent Limitation Calculations

1. Basis for calculation: Minimum effluent hardness of 41 mg/L over the past three years since improvement to the treatment process and operations. CV = 0.6 per Fact Sheet. n = 4.
2. Total hardness dataset considered:

(Date) Eff. Hardness	(Date) Eff. Hardness	(Date) Eff. Hardness
Chief operator reports a minimum effluent hardness of 41 mg/L over the past 3 years, with the typical effluent hardness being in the 50 to 80 mg/L range. The actual dataset will be made available upon request.		

3. WQO for copper based on a hardness of 41 mg/L:
 - Chronic criterion = 4.4 µg/L (total)
 - Acute criterion = 6.0 µg/L (total)
4. MEC for total copper = 4.1 µg/L (per Fact Sheet)
5. Reasonable potential: **NO** because chronic criterion > MEC; therefore, there should be no effluent limitation on copper based on this new information.
6. WQBEL calculation if there had been reasonable potential:

Parameter	Acute	Chronic
Criteria, total (µg/L)	6.0	4.4
Dilution credit	0	0
Background conc. (µg/L)	N/A	N/A
CV	0.6	0.6
n	4	4
ECA, total recoverable	6.0	4.4
ECA multiplier	0.321	0.527
LTA	1.9	2.3
AMEL multiplier (95%)	1.55	---
AMEL (µg/L)	3.0	---
MDEL multiplier (99%)	3.11	---
MDEL (µg/L)	6.0	---

Zinc Effluent Limitation Calculations

1. Basis for calculation: Minimum hardness = 41 mg/L (see copper calculations). CV = 0.6 per Fact Sheet. n = 4.
2. WQO for zinc based on a hardness of 41 mg/L:
 - Chronic criterion = 56 µg/L (total)
 - Acute criterion = 56 µg/L (total)
3. MEC for total zinc = 41 µg/L (per Fact Sheet)
4. Reasonable potential: **NO** because chronic criterion > MEC; therefore, there should be no effluent limitation on zinc based on this new information.
5. WQBEL calculation if there had been reasonable potential:

Parameter	Acute	Chronic
Criteria, total (µg/L)	56	56
Dilution credit	0	0
Background conc. (µg/L)	N/A	N/A
CV	0.6	0.6
n	4	4
ECA, total recoverable	56	56
ECA multiplier	0.321	0.527
LTA	18	30
AMEL multiplier (95%)	1.55	---
AMEL (µg/L)	28	---
MDEL multiplier (99%)	3.11	
MDEL (µg/L)	56	

