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March 20, 2007

Dane Mathis
California Regional Water Quality Control Board
Central Valley Region
1685 E. Street,
Fresno CA 93706

Subject: Preliminary Comments on the draft Tentative Order (R5-2007-XXXX) for NPDES No. CA0078174, Sanger Sand and Gravel Plant, Sanger, Fresno County

Dear Mr. Mathis:

Thank you for the opportunity to provide preliminary comments on the initial draft Tentative Order for the NPDES permit for the Sanger mine facility, which you have indicated was withdrawn and shortly will be replaced by a new Tentative Order. We look forward to the opportunity to discuss these comments with you before you issue a new draft permit and to providing other information you may need.

Minor changes

1. Page 2, F. Technology based effluent limitations, 2nd line, delete California between 40 and Code of Federal Regulations.
2. The requirement (page E-9 X.D.2. a & b) for the names of all employees at the facility is inappropriate for this operation (it may be appropriate for a POTW).
3. On page E-12 (Attachment E X.C.2) change "submit SMRs to" to "Submit DMRs to".
4. Page 18, Constituent Study - Please change the sentence to read as follows: "Discharger has sampled the effluent and receiving water for all priority pollutants but asbestos."
5. Please send us, and with the Fact sheet please include, copies of spreadsheet calculations used to derive WQBELs.



Substantive Comments:

1. Removal of Effluent limits for Aluminum (Al).

Item VI.C.1, Table 6, of the draft WDRs contained effluent limitations for aluminum. We understand that you intend not to include the effluent limits for aluminum, but to request a study in the new permit. We agree that there is no reasonable potential on which to base an aluminum limit, as it has not been shown that the discharge has caused or contributed to a receiving water exceedance for aluminum, or has such potential.

2. Request for Manganese (Mn) Effluent Limit Averaging Period to be Revised

Section IV.A.1.c of the Tentative Permit contains an effluent limit for manganese, without referring to an averaging period. The Tentative Permit indicates that the limit is based on the secondary drinking water standard (secondary MCL) for manganese.

The last two years of testing upstream and downstream in the Kings River clearly shows that the discharge is not causing or contributing to an exceedance in the River, and the discharge is not negatively affecting the River's ability to achieve the drinking water standard for Manganese. The secondary drinking water standard on which the limit is based is a standard to protect the taste, odor and other aesthetic characteristics of drinking water at the tap, after any necessary treatment of the water supply. Vulcan accepts the proposed approach of doing the study and retaining an effluent limit during the next permit cycle until any implications of the study are incorporated via a reopener. However, according to guidance for the development of effluent limitations based on drinking water standards, the appropriate averaging period is not less than 30 days. Thus, we request that the effluent limit in the permit be expressed as a 30 day average limit.

3. Selection of monitoring wells before permit issuance in lieu of monitoring installation workplan.

Item VI.C.2.e (page 19) requires a groundwater monitoring installation workplan, which is to include one or more background monitoring wells and a sufficient number of designated monitoring wells to evaluate the extent to which, if any, the settling and storage ponds may or do release waste constituents to groundwater. The workplan may propose the use of existing monitoring wells for this purpose. We wish to discuss with you simply selecting the monitoring wells and designating them in the permit, which would save agency and discharger time and effort. However, if a workplan is retained, we request that the timelines be revised to add reasonable additional time to each of task "a" and task "b". Thus, the initial workplan should not be required sooner than 90 days following adoption of the order, and the implementation not less than 120 days following completion and approval of the workplan. It would also be clearer to count the second task simply from approval of the workplan.

4. The Requirement for annual whole effluent chronic toxicity testing is inappropriate.

Provision V.B of the Monitoring and Reporting Program (p. E-5) and Provision VI.C.2.e (p. 16) of the proposed WDR require annual effluent chronic toxicity testing. The Basin Plan calls for whole effluent toxicity testing where appropriate..." In the case of this particular facility, such testing is not appropriate. The main activity in the quarry operations is washing sands and gravels. The main pollutants associated with gravel washing are suspended solids and settleable solids. The source water is groundwater and river water; both are clean, and no chemicals are added to this water, and no toxic pollutant effluent limits are included or needed. Given there is no reasonable potential for



chronic toxicity the requirements for chronic toxicity testing should be removed from the Order. Requiring monitoring for whole effluent chronic toxicity would pose an unreasonable burden and unreasonable costs without benefit.

Not only have whole effluent acute toxicity tests been consistently passed at this facility, but whole effluent testing for chronic toxicity has been performed with favorable results. Specifically, the test results indicate 100% survival for each species that was tested, including *Ceriodaphnia dubia*, *Pimephales promelas*, and *Selenastrum capricornutum*. A copy of the report of this testing is included as Attachment A. This confirms that ongoing chronic toxicity testing is inappropriate at this facility.

5. Item V.A. Surface Water Limitations

The draft permit lists all the receiving water quality objectives stated in the Basin Plan and does not take into account whether the permitted discharge has a reasonable potential of containing these pollutants. We propose that there is no reasonable potential for the discharge to contain the following pollutants and that the receiving water limitations for these pollutants should be removed.

- Limit 1. Un-ionized Ammonia. This pollutant is generally associated with sewage that contains large amounts of organic substances with nitrogen. Effluent from gravel washing does not contain such pollutants.
- Limit 2. Bacteria. Unlike effluent from wastewater treatment plants, the effluent from quarry operations does not add any bacteria into their discharge water. Thus the effluent discharged from outfall of this facility does not add any extra bacteria into receiving water. We believe this limit should be removed. If samples were collected from the river by a third party, and if these samples showed bacteria counts above the limit, then a third party could claim our plant responsible even if bacteria in the receiving water came from unidentified sources.
- Limit 3. Biostimulatory substances. Gravel wash water does not contain biostimulatory substances.
- Limit 5. Color. No colored compounds are created in the washing process.
- Limit 10. Pesticide. These are not used in the wash water.
- Limit 11. Radioactivity. We do not use radioactive substances in our wash water.
- Limit 12. Salinity. We only use fresh water at the quarry site, and monitoring data has not indicated reasonable potential to cause exceedances of salinity objectives.
- Limit 16. Taste and Odors. Gravel washing does not add taste- or odor-producing substances.
- Limit 18. Toxicity. See Comment 4 above.



6. Standard mineral monitoring is unnecessary.

Table E-7 of the Self-Monitoring Program requires analyzing standard minerals (boron, calcium, chloride, iron, magnesium, potassium, sulfate, sodium, manganese, phosphorus, total alkalinity and hardness). There is no reason to believe that all these constituents exist in the discharge at levels that threaten maintenance of water quality standards in the River. We request that monitoring requirements for these constituents be removed except for manganese, alkalinity and hardness.

7. Changes to the Self Monitoring Program

a. Attachment E-SMP item IV. A. Table E-2 Discharge Monitoring

Since the Al limits are being removed, we also ask that monitoring requirements for Al be removed.

b. Attachment E-SMP item VIII A. Table E-5 Receiving Surface Water Monitoring Requirements

Since the Al limits are being removed, we also ask that receiving water monitoring requirements for Al be removed.

c. Attachment E-SMP item VIII. B. Table E-6 Receiving Groundwater Water Monitoring Requirements

There is no reason to believe that these constituents exist in the discharge at levels that threaten maintenance of water quality standards that apply to groundwater. For example, aquatic toxicity objectives for aluminum would not apply to groundwater. We ask that the groundwater monitoring requirements for Al be removed.

8. Special Studies

On page 17, Special Provisions VI.C.2. b, Discharge Point and Receiving Water Monitoring Evaluation, requires completion of two studies. We anticipate that implementation of any modifications called for by either of these studies will require involvement with, and concurrence by, other government agencies such as the Department of Fish and Game, Army Corps of Engineers, and any other agencies with jurisdiction over levees. Vulcan would have no control over the response time of these agencies and may not be able to establish a firm schedule for any described work in a report submitted within the specified time period. Therefore any schedule Vulcan would propose would have to be subject to these potential delays, and we ask that this be recognized in the permit language by inserting at the end of each of VI.C.2.(i) and VI.C.2.b(ii): "Any schedule proposed for physical modifications may be specified as subject to delays in processing approvals by agencies whose approvals are needed for the work or modifications."

On the issue of the measurement of flow, we note that federal regulations do not require actual precision in the monitoring of actual flow, but instead they require monitoring that is representative of the monitored activity. We request revision of the language of VI.C.2(i) to reflect this, to allow those performing the study to achieve the appropriate goal. Specifically, we request that the first sentence of VI.C.2(i) be modified to replace the phrase "accuracy and precision of" in the initial sentence with the phrase "representative nature of." In addition, in the second sentence please make two changes, so that it reads as follows: "If the flow cannot be monitored to provide information representative of the monitored activity, the report must propose a time schedule for the installation of a flow-metering device (or other acceptable method) to provide information on flow at Discharge Point 001 that is representative of the monitored activity."



Dane Mathis
California Regional Water Quality Control Board
March 20, 2007
Page 5

9. Comments on Compliance Summary in the Fact Sheet (pp. F-5 to F-6)

Manganese Effluent Limit: Table F-3 includes the unusual notation "1(27)" under daily maximum violations for manganese. A footnote to this item indicates that the number in parentheses denotes the number of times a discharge appeared to cause the downstream manganese concentration to be greater than upstream. However, there was no effluent limit making it a violation for downstream levels to exceed upstream levels if the discharge did not cause the River to exceed 50 µg/l, so any such events would not be violations on that basis, and should not be listed. Furthermore, monitoring did not show 27 events where there were increases between upstream to downstream receiving measurements. It has also not been established that the discharge caused any increases. We therefore request that the "(27)" and footnote should simply be deleted.

TPH-d Effluent Limit: Table F-3 shows 3 monthly average and maximum daily violations for TPH-d, and has a footnote acknowledging that these violations occurred prior to the termination of the discharge from the groundwater extraction and treatment system. Since issuance of the last permit we find only 2 events exceeding the TPH-d limit. While the rest of the monitoring did not detect TPH-d at all, detections exceeding the effluent limits were reported for July 2003 and May 2004. We therefore request that "3" be replaced with "2." We note that the groundwater extraction system discharges ceased completely more than two years ago, in December 2004 and the remediation project has been given closure by the Regional Board.

Receiving Water Limits: We request that reference to the Dissolved Oxygen (DO) receiving water limit be removed from Table F-4 and the last paragraph of Section F. Review of the receiving water monitoring results since January 2005, for example, reveals that upstream and downstream DO was basically identical. The decreased variability in DO measurements after January 2005 also coincides with replacement of the meter used for such measurements, which may help explain the previous variability. Even before 2005, there was no pattern showing a tendency of measured DO to be lower downstream than upstream, no reason to think the discharge should cause decreased dissolved oxygen, and no proof that it did so. Therefore, we request that reference to the DO receiving water limit in the Compliance Summary be deleted.

Thank you for the opportunity to communicate our preliminary comments on the Provisions and other statements in this draft Tentative Order. We look forward to speaking with you regarding these comments and to your revision of the Tentative Order.

Sincerely,
ENV America Incorporated

A handwritten signature in black ink, appearing to read "Wojciech Bajzarowicz", is written over a printed name and title.

Voytek Bajzarowicz
Principal

Attachment



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH
January 26, 2007

Ms. Stacey Burner
BSK Analytical Laboratories
1414 Stanislaus St.
Fresno, CA 93706

Dear Ms. Burner:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013* Results were as follows:

CLIENT: BSK Analytical Laboratories
SAMPLE I.D.: #2007010148 **M-100 Receiving Water**
DATE RECEIVED: 16 January - 07
ABC LAB. NO.: BSK0107.148B

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

SURVIVAL NOEC = 100.00 %
TUc = 1.00
IC25 = >100.00 %
IC50 = >100.00 %

REPRODUCTION NOEC = <100.00 %
TUc = >1.00
IC25 = >100.00 %
IC50 = >100.00 %

Yours very truly,



Thomas (Tim) Mikel
Laboratory Director

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date: 1/16/2007	Test ID: BSK107148B	Sample ID: CA000000
End Date: 1/23/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 1/15/2007	Protocol: EPAF 91-EPA Freshwater	Test Species: CD-Ceriodaphnia dubia
Comments: BSK Project # 2007010148 M-100 Receiving Water		

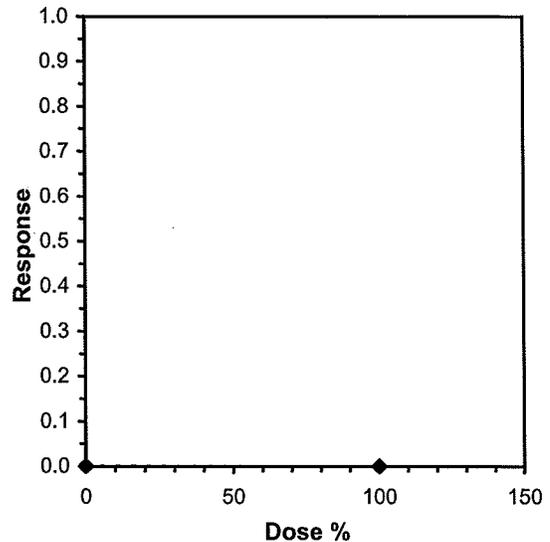
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N Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's 1-Tailed		Isotonic	
							Exact P	Critical	Mean	N-Mean
N Control	1.0000	1.0000	1.0472	0	10	10			1.0000	1.0000
100	1.0000	1.0000	1.0472	0	10	10	1.0000	0.0500	1.0000	1.0000

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	100	>100		1
Treatments vs N Control				

Linear Interpolation (200 Resamples)

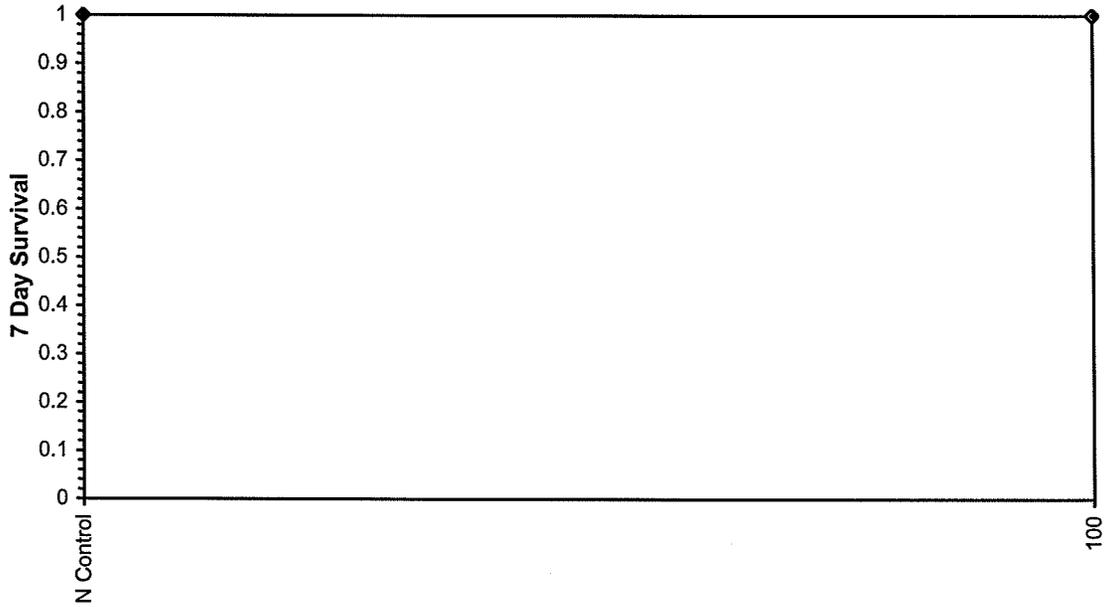
Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date: 1/16/2007	Test ID: BSK107148B	Sample ID: CA000000
End Date: 1/23/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 1/15/2007	Protocol: EPAF 91-EPA Freshwater	Test Species: CD-Ceriodaphnia dubia
Comments: BSK Project # 2007010148	M-100 Receiving Water	

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 1/16/2007	Test ID: BSK107148B	Sample ID: CA000000
End Date: 1/23/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 1/15/2007	Protocol: EPAF 91-EPA Freshwater	Test Species: CD-Ceriodaphnia dubia
Comments: BSK Project # 2007010148 M-100 Receiving Water		

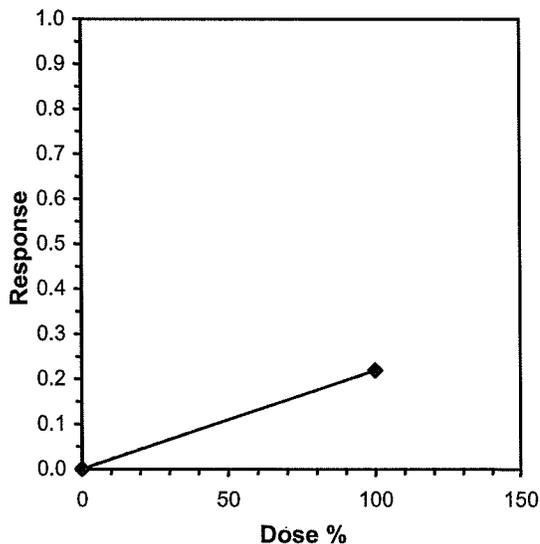
Conc-%	1	2	3	4	5	6	7	8	9	10
N Control	25.000	16.000	27.000	25.000	23.000	34.000	31.000	23.000	17.000	21.000
100	20.000	22.000	16.000	18.000	23.000	16.000	23.000	16.000	20.000	15.000

Conc-%	Mean	N-Mean	Transform: Untransformed					N	1-Tailed			Isotonic	
			Mean	Min	Max	CV%	t-Stat		Critical	MSD	Mean	N-Mean	
N Control	24.200	1.0000	24.200	16.000	34.000	23.196	10					24.200	1.0000
*100	18.900	0.7810	18.900	15.000	23.000	16.441	10	2.612	1.734	3.518		18.900	0.7810

Auxiliary Tests	Statistic	Critical	Skew	Kurt		
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.97842	0.868	0.24098	0.23117		
F-Test indicates equal variances (p = 0.09)	3.26352	6.54109				
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates significant differences Treatments vs N Control	3.51834	0.14539	140.45	20.5833	0.01764	1, 18

Linear Interpolation (200 Resamples)				
Point	%	SD	95% CL	Skew
IC05*	22.830			
IC10*	45.660			
IC15*	68.491			
IC20*	91.321			
IC25	>100			
IC40	>100			
IC50	>100			

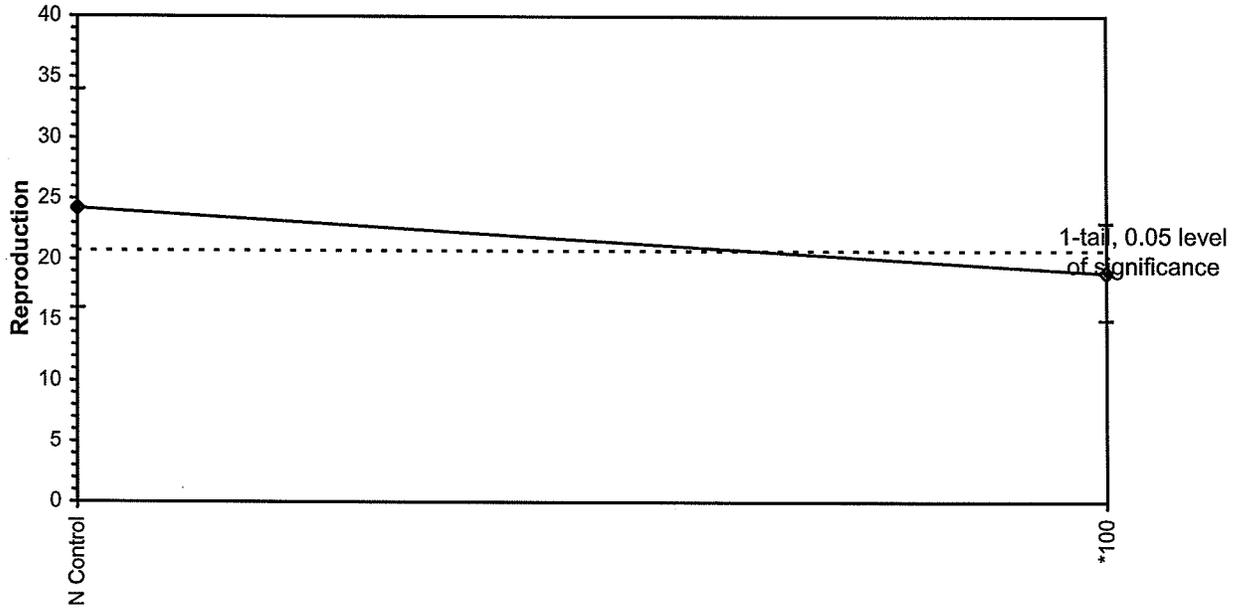
* indicates IC estimate less than the lowest concentration



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 1/16/2007 Test ID: BSK107148B Sample ID: CA000000
End Date: 1/23/2007 Lab ID: CAABC Sample Type: EFF1-POTW
Sample Date: 1/15/2007 Protocol: EPAF 91-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
Comments: BSK Project # 2007010148 **M-100 Receiving Water**

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 1/16/2007	Test ID: BSK107148B	Sample ID: CA000000
End Date: 1/23/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 1/15/2007	Protocol: EPAF 91-EPA Freshwater	Test Species: CD-Ceriodaphnia dubia
Comments: BSK Project # 2007010148 M-100 Receiving Water		

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.39	24.00	25.10	0.45	2.76	8
100		24.41	24.00	25.90	0.64	3.27	8
N Control	pH	8.16	7.90	8.30	0.14	4.60	8
100		8.24	8.00	8.50	0.16	4.85	8
N Control	Dissolved Oxygen	7.20	6.40	7.70	0.55	10.28	8
100		6.99	6.50	7.50	0.29	7.64	8
N Control	Hardness mg/l	91.75	85.00	95.00	4.37	2.28	8
100		34.00	34.00	34.00	0.00	0.00	8
N Control	Alkalinity mg/l	64.63	60.00	68.00	3.85	3.04	8
100		27.00	27.00	27.00	0.00	0.00	8
N Control	Conductivity	345.00	334.00	355.00	6.97	0.77	8
100		105.38	80.00	128.00	16.72	3.88	8

BSK Analytical Laboratories

Sub-contracting Chain of Custody

Print Date : 01/15/2007

Sub-Contracted to:

Report and Invoice to:

Aquatic Bioassay Laboratory
29 N. Olive Street
Ventura, CA 93001
Attention: Mike Machuzak

BSK Analytical Laboratories
Attention: Stacey Burner
1414 Stanislaus St.
Fresno, CA 93706
(559) 497-2888

S-15

BSK Project # 2007010148



Turnaround (Days): 2 5 10 Other
State Forms: Yes No
QC Deliverables: Std II III IV

Sample ID Matrix Sample Description
805790 Liquid M-001

Sample Date/Time: 01/03/2007 @ 1030
Sampled by: David B OConnor
Employed by: ENV American Inc

Tests Requested Method

Bioassay Liquid (External)
Chronic 3 Species Biosassay (External) EPA 600/4-91/0

Bottle Sent: 2 Bioassay
Bottle Sent: [Signature]

	Name	Signature	Company	Date/Time
1. Relinquished by:		[Signature]		01/15/07 11:55
1. Received by:	E. MATYJAK	[Signature]	ABC LABS	1-16-07 0823
2. Relinquished by:				
2. Received by:				

TEMP. @ RECEIPT = 1.7

RUN ONLY CHRONIC TEST
PER STACEY BURNER
ON 1-16-07

SAMPLE DATE = 1-15-07
PER STACEY BURNER
ON 1-24-07



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

January 17, 2007

Ms. Stacey Burmer
BSK Analytical Laboratories
1414 Stanislaus St.
Fresno, CA 93706

Dear Mr. Burmer:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013* Results were as follows:

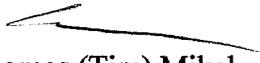
CLIENT: BSK Analytical Laboratories
SAMPLE I.D.: #805790 M-001
DATE RECEIVED: 04 Jan - 07
ABC LAB. NO.: BSK0107.011

CHRONIC SELENASTRUM ALGAE GROWTH BIOASSAY

NOEC = 100.00 %
TU_c = 1.00

IC₂₅ = >100.00 %
IC₅₀ = >100.00 %

Yours very truly,



Thomas (Tim) Mikel
Laboratory Director

Phytoplankton Test-Growth-Cell Density

Start Date: 1/4/2007	Test ID: BSK0107011	Sample ID: CA0000000
End Date: 1/8/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 1/3/2007	Protocol: EPAF 91-EPA Freshwater	Test Species: SC-Selenastrum capricornutum
Comments: 805790 M-001		

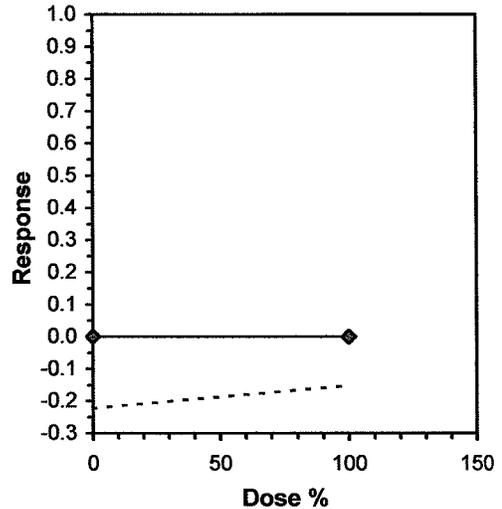
Conc-%	1	2	3	4
N Control	1124000	1111000	1134000	1126000
0	1408000	1327000	1395000	1362000
100	1303000	1318000	1236000	1317000

Conc-%	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	Mean					N-Mean	
N Control	1123750	1.0000	1123750	1111000	1134000	0.849	4				1263417	1.0000	
0	1373000	1.2218	1373000	1327000	1408000	2.641	4	-11.293	2.180	48113.2	1263417	1.0000	
100	1293500	1.1511	1293500	1236000	1318000	3.010	4	-7.691	2.180	48113.2	1263417	1.0000	

Auxiliary Tests		Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)		0.90278	0.805	-1.0069	0.3987						
Bartlett's Test indicates equal variances (p = 0.12)		4.2564	9.21035								
Hypothesis Test (1-tail, 0.05)		NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test		100	>100		1	48113.2	0.04281	6.5E+10	9.7E+08	4.0E-06	2, 9
Treatments vs N Control											

Linear Interpolation (200 Resamples)

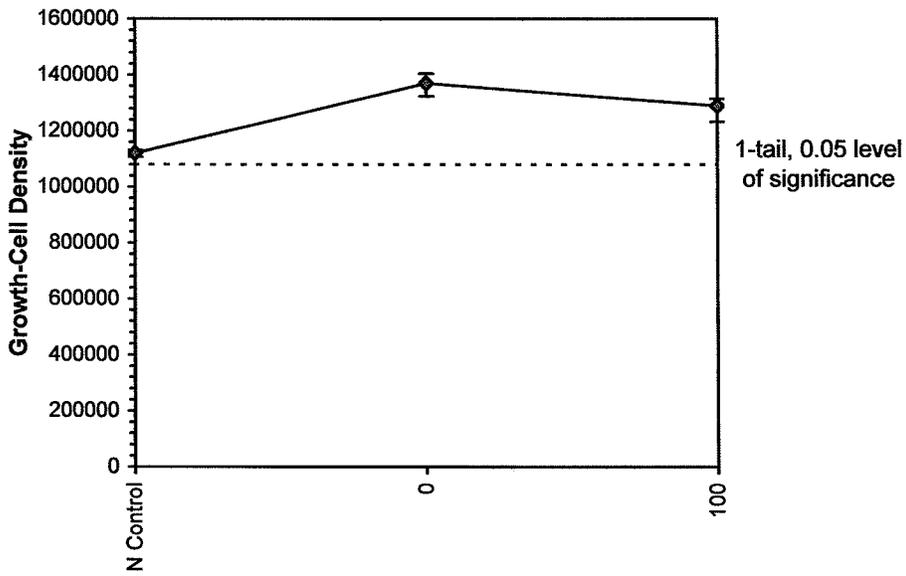
Point	%	SD	95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Phytoplankton Test-Growth-Cell Density

Start Date: 1/4/2007 Test ID: BSK0107011 Sample ID: CA0000000
End Date: 1/8/2007 Lab ID: CAABC Sample Type: EFF1-POTW
Sample Date: 1/3/2007 Protocol: EPAF 91-EPA Freshwater Test Species: SC-Selenastrum capricornutum
Comments: 805790 M-001

Dose-Response Plot



Phytoplankton Test-Growth-Cell Density

Start Date: 1/4/2007	Test ID: BSK0107011	Sample ID: CA0000000
End Date: 1/8/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 1/3/2007	Protocol: EPAF 91-EPA Freshwater	Test Species: SC-Selenastrum capricornutum
Comments: 805790 M-001		

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	25.50	25.50	25.50	0.00	0.00	3
0		25.50	25.50	25.50	0.00	0.00	3
100		25.50	25.50	25.50	0.00	0.00	3
N Control	pH	7.70	7.60	7.90	0.17	5.40	3
0		8.07	7.90	8.20	0.15	4.85	3
100		8.07	7.90	8.20	0.15	4.85	3
N Control	Hardness mg/l	97.00	97.00	97.00	0.00	0.00	3
0		47.00	47.00	47.00	0.00	0.00	3
100		93.00	93.00	93.00	0.00	0.00	3
N Control	Alkalinity mg/l	54.00	54.00	54.00	0.00	0.00	3
0		32.00	32.00	32.00	0.00	0.00	3
100		86.00	86.00	86.00	0.00	0.00	3
N Control	Conductivity	418.00	407.00	440.00	19.05	1.04	3
0		185.67	178.00	200.00	12.42	1.90	3
100		275.00	261.00	290.00	14.53	1.39	3



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH
January 17, 2007

Ms. Stacey Burmer
BSK Analytical Laboratories
1414 Stanislaus St.
Fresno, CA 93706

Dear Ms. Burmer:

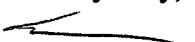
We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013* Results were as follows:

CLIENT: BSK Analytical Laboratories
SAMPLE I.D.: #805790 M-001
DATE RECEIVED: 04 Jan - 07
ABC LAB. NO.: BSK0107.011

CHRONIC FATHEAD LARVAE SURVIVAL & GROWTH BIOASSAY

SURVIVAL	NOEC =	100.00 %
	TU _c =	1.00
	IC25 =	>100.00 %
	IC50 =	>100.00 %
GROWTH	NOEC =	100.00 %
	TU _c =	1.00
	IC25 =	>100.00 %
	IC50 =	>100.00 %

Yours very truly,


Thomas (Tim) Mikel
Laboratory Director

Acute Fish Test-7 Day Survival

Start Date: 1/4/2007	Test ID: BSK0107011	Sample ID: CA0000000
End Date: 1/11/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 1/3/2007	Protocol: EPAA 85-EPA Acute	Test Species: PP-Pimephales promelas
Comments: 805790 M-001		

Conc-%	1	2	3	4
N Control	0.6000	1.0000	1.0000	1.0000
0	0.9333	0.9333	0.5333	0.9333
100	1.0000	0.9333	0.6000	0.9333

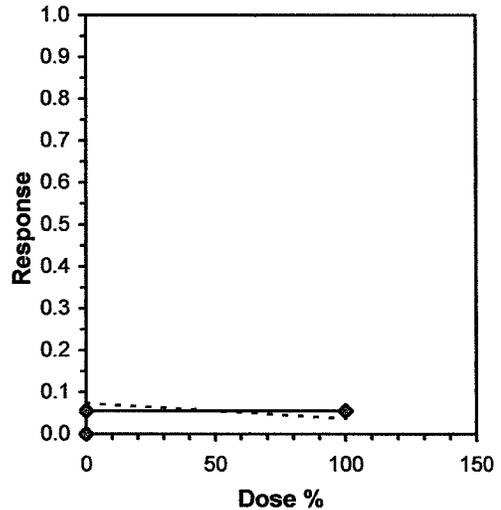
Conc-%	Mean	N-Mean	Transform: Arcsin Square Root					Rank Sum	1-Tailed Critical	Isotonic	
			Mean	Min	Max	CV%	N			Mean	N-Mean
N Control	0.9000	1.0000	1.3025	0.8861	1.4413	21.315	4			0.9000	1.0000
0	0.8333	0.9259	1.1869	0.8188	1.3096	20.679	4	13.00	11.00	0.8500	0.9444
100	0.8667	0.9630	1.2367	0.8861	1.4413	19.555	4	15.00	11.00	0.8500	0.9444

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.69408	0.805	-1.258	-0.3221
Bartlett's Test indicates equal variances (p = 0.97)	0.06157	9.21035		
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	100	>100		1
Treatments vs N Control				

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL(Exp)	Skew
IC05*	0.0000			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			

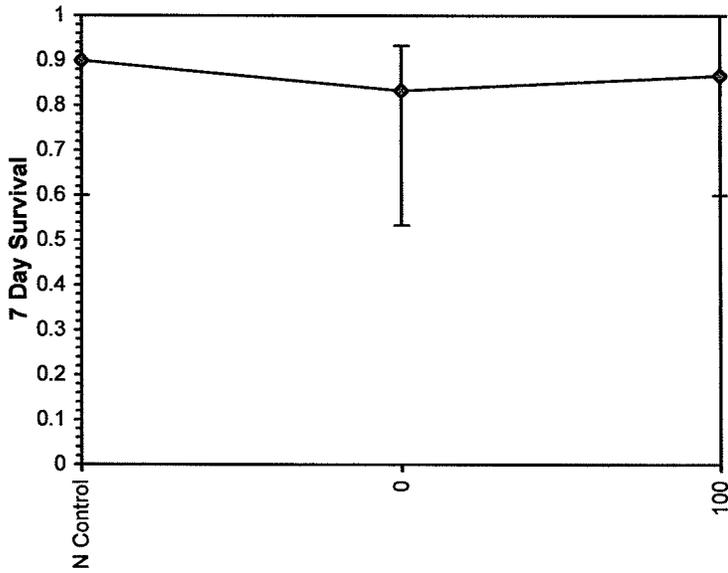
* indicates IC estimate less than the lowest concentration



Acute Fish Test-7 Day Survival

Start Date: 1/4/2007	Test ID: BSK0107011	Sample ID: CA0000000
End Date: 1/11/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 1/3/2007	Protocol: EPAA 85-EPA Acute	Test Species: PP-Pimephales promelas
Comments: 805790 M-001		

Dose-Response Plot



Acute Fish Test-7 Day Biomass

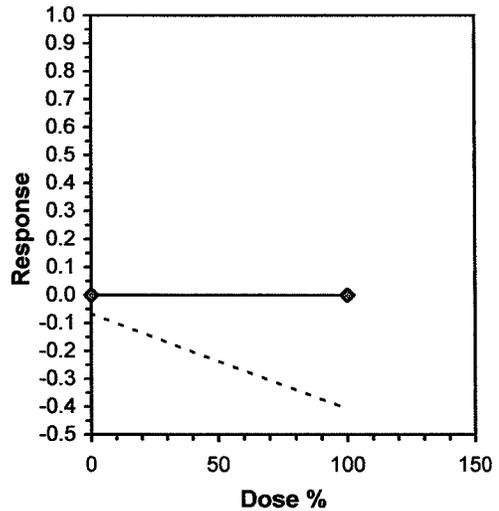
Start Date: 1/4/2007	Test ID: BSK0107011	Sample ID: CA0000000
End Date: 1/11/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 1/3/2007	Protocol: EPAA 85-EPA Acute	Test Species: PP-Pimephales promelas
Comments: 805790 M-001		

Conc-%	1	2	3	4
N Control	0.3327	0.4013	0.3553	0.4427
0	0.4367	0.3860	0.3013	0.5073
100	0.4940	0.6133	0.4633	0.5880

Conc-%	Mean	N-Mean	Transform: Untransformed				N	t-Stat	1-Tailed			Isotonic	
			Mean	Min	Max	CV%			Critical	MSD	Mean	N-Mean	
N Control	0.3830	1.0000	0.3830	0.3327	0.4427	12.787	4				0.4435	1.0000	
0	0.4078	1.0648	0.4078	0.3013	0.5073	21.259	4	-0.494	2.180	0.1095	0.4435	1.0000	
100	0.5397	1.4091	0.5397	0.4633	0.6133	13.394	4	-3.119	2.180	0.1095	0.4435	1.0000	

Auxiliary Tests		Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)		0.96918	0.805	-0.0686	-1.0705						
Bartlett's Test indicates equal variances (p = 0.67)		0.81219	9.21035								
Hypothesis Test (1-tail, 0.05)		NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test		100	>100		1	0.10951	0.28592	0.02836	0.00505	0.02607	2, 9

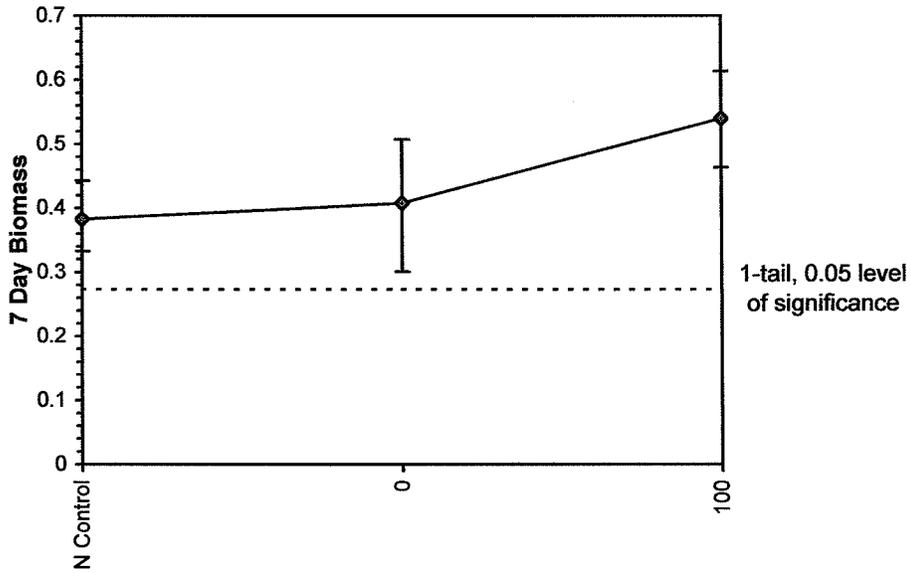
Linear Interpolation (200 Resamples)				
Point	%	SD	95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Acute Fish Test-7 Day Biomass

Start Date: 1/4/2007 Test ID: BSK0107011 Sample ID: CA0000000
End Date: 1/11/2007 Lab ID: CAABC Sample Type: EFF1-POTW
Sample Date: 1/3/2007 Protocol: EPAA 85-EPA Acute Test Species: PP-Pimephales promelas
Comments: 805790 M-001

Dose-Response Plot



Acute Fish Test-7 Day Biomass

Start Date: 1/4/2007	Test ID: BSK0107011	Sample ID: CA0000000
End Date: 1/11/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 1/3/2007	Protocol: EPAA 85-EPA Acute	Test Species: PP-Pimephales promelas
Comments: 805790 M-001		

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.34	24.00	25.90	0.63	3.27	8
0		24.23	24.00	24.40	0.13	1.48	8
100		24.25	24.00	24.50	0.18	1.74	8
N Control	pH	8.20	8.10	8.30	0.09	3.71	8
0		8.16	7.90	8.30	0.16	4.90	8
100		8.09	7.90	8.30	0.15	4.72	8
N Control	DO mg/L	7.16	6.20	7.80	0.51	10.00	8
0		6.89	5.90	7.60	0.62	11.43	8
100		6.65	4.70	7.60	1.02	15.18	8
N Control	Hardness mg/L	92.00	89.00	97.00	2.98	1.88	8
0		31.00	31.00	31.00	0.00	0.00	8
100		88.00	88.00	88.00	0.00	0.00	8
N Control	Cond umhos	341.50	333.00	365.00	10.31	0.94	8
0		104.50	83.00	122.00	15.57	3.78	8
100		218.63	183.00	315.00	55.16	3.40	8
N Control	Alkalinity mg/L	62.75	60.00	65.00	1.91	2.20	8
0		29.00	29.00	29.00	0.00	0.00	8
100		117.13	88.00	163.00	38.08	5.27	8