Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3169~~ 3169 / 3196	Test Start: 7/6/99

Sample / Repl.	Response	64	65	66	67	68	69	70	71	72	73	74
10446 A	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
10446 B	# Males emerged		1									
	# Females emerged		1									
	Cumulative number emerged											
	Male Time to Mortality (days)		5 days (9/15)									
	Females Time to Mortality (days)		5 days (9/15)									
	Pairings #		1									
	Egg Case # / /No. Eggs / Time to hatch / # hatched			1 968	70 case							
				9/12 10 unhatched (9/23)								
10446 C	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	9/9	9/10 JG	9/11 JG	9/12 JG	9/13	9/14	9/15	9/16	9/17	9/18	9/19

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: _____ Date:

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3186~~ / 3189 / 3196	Test Start: 7/7/99

Sample / Repl.	Response	20	21	22	23	24	25	26	27	28	29	30
1 10448 A 9♂	# Males emerged							1				
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)							5 days (8/7)				
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10448 B 9♂	# Males emerged			3 (8/2)					1			
	# Females emerged				1	1 (paired w/ [illegible])						
	Cumulative number emerged			3	[illegible]	5						
	Male Time to Mortality (days)			5d (8/2)					4d (8/6)			
	Females Time to Mortality (days)				3 (8/2)	5 days (8/6)						
	Pairings #				1 [illegible]	1						
	Egg Case # / No. Eggs / Time to hatch / # hatched						Est. 1,295	100% hatch				
							Est. 1,355.2	0% hatch (8/3)				
10448 C 9♂	# Males emerged										1	
	# Females emerged									1		
	Cumulative number emerged											
	Male Time to Mortality (days)									(8/2) [illegible]	5d (8/10)	
	Females Time to Mortality (days)								4 days 8/9			
	Pairings #									1		
	Egg Case # / No. Eggs / Time to hatch / # hatched										1 case est. [illegible] 100% 8/10	
	Init./Date (1999)	7/27	7/28	7/29 SJS	7/30	7/31 JJG	8/1 JJG	8/2 JJG	8/3 JJG	8/4	8/5 SMS	8/6

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

① Sample # correction

Review: [illegible] Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3186~~ / 3189 / 3196	Test Start: 7/7/99

Sample / Repl.	Response	20	21	22	23	24	25	26	27	28	29	30
10448 D ♀ ♂	# Males emerged			1		2			1			
	# Females emerged											
	Cumulative number emerged			1		3						
	Male Time to Mortality (days)			5d (8/3)		4 days (8/4) 5 days (8/5)			3d (8/6)			
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
10448 E ♀ ♂	# Males emerged					1						
	# Females emerged											1 dead
	Cumulative number emerged					1						
	Male Time to Mortality (days)					4 days (8/4)						
	Females Time to Mortality (days)								2 days (8/6)			
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
10448 F ♀ ♂	# Males emerged		1								1	
	# Females emerged					1					1	
	Cumulative number emerged		1			2						
	Male Time to Mortality (days)		5d (8/3)								2 days (8/7)	
	Females Time to Mortality (days)					5 days (8/5)					3 days (8/8)	
	Pairings #					1 w/ 4 egg masses						
	Egg Case # / /No. Eggs / Time to hatch / # hatched						1,355 2 2nd case					1st case 2,000
							100% hatch 8/10/99					100% 8/15
	Init./Date (1999)	7/27	7/28 JJG	7/29 JJG	7/30	7/31 JJG	8/1 JJG	8/2 JJG	8/3 JJG	8/4	8/5 JT	8/6 JT JG

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3156~~ / 3189 / 3196	Test Start: 7/7/99

Sample / Repl.	Response	20	21	22	23	24	25	26	27	28	29	30
10448 G 9 ♂	# Males emerged								1			1
	# Females emerged										1	
	Cumulative number emerged											
	Male Time to Mortality (days)								4 days (8/7)			
	Females Time to Mortality (days)										5d correction (8/10)	
	Pairings #										1W 4/4C	
	Egg Case # / /No. Eggs / Time to hatch / # hatched											1 case on 8/2 250 eggs
											100% 8/10	+ 2" case on 8/8
10448 H 9 ♂	# Males emerged				2							
	# Females emerged									1		
	Cumulative number emerged				2							
	Male Time to Mortality (days)				1d (8/3)							
	Females Time to Mortality (days)									5d (8/4)		
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											1" case EST 400
	Init./Date (1999)	7/27	7/28	7/29	7/30 JJG	7/31	8/1	8/2	8/3 JJG	8/4	8/5	8/6 JJG

recorded on next page ♂

No hatch 8/11 (days/2)c ♂

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Comments:

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Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3169~~ 3189 / 3196	Test Start: 7/6/99

Sample / Repl.	Response	31	32	33	34	35	36	37	38	39	40	41
10448 A ♀ ♂	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
10448 B ♀ ♂	# Males emerged			X 8/9		1 (dead)						
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)					0 days						
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
10448 C ♀ ♂	# Males emerged	2			X 8/9		X	X				
	# Females emerged				1 (squished)							
	Cumulative number emerged											
	Male Time to Mortality (days)	(8/5d) (8/4d)	(8/7) (8/13)									
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	8/7	8/8	8/9 JG	8/10 JG	8/11	8/12 JG	8/13	8/14	8/15	8/16	8/17

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3169~~ 3189/3196	Test Start: 7/6/99

Sample / Repl.	Response	31	~~32~~ 31	~~33~~ 32	~~34~~ 33	~~35~~ 34	~~36~~ 35	~~37~~ 36	~~38~~ 37	~~39~~ 38	~~40~~ 39	~~41~~ 40 (1) 41
10448 D ♀ ♂	# Males emerged	(1)										
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
10448 E ♀ ♂	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
10448 F ♀ ♂	# Males emerged				1							X
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)				7d (all)							
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	8/6	8/7	8/8	8/9 JG	8/10	8/11	8/12	8/13	8/14	8/15	8/16 JG

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

(1) Date / Day correction on

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3189~~ 3189/3196	Test Start: 7/6/99

Sample / Rept.	Response	31/30	32/31	33/32	34/33	35/34	36/35	37/36	38/37	39/38	40/39	41/40
10448 G ♀ ♂	# Males emerged	1									1	
	# Females emerged		1		1				1			
	Cumulative number emerged											
	Male Time to Mortality (days)	3d (8/4)									5d (8/20) correction	
	Females Time to Mortality (days)		5d (8/12)		5d (8/14)				5d (8/18)			
	Pairings #		1		1 w/ 1 ♂					1 w/ 1 ♀		3 w/ 4 ♀ (8/15)
	Egg Case # / No. Eggs / Time to hatch / # hatched			1 / 1472 / 995 / 12° (30d) / 100% 8/17		1 / 1,400 / 39 unhatched 8/16						2 (1,496 / 1,920) 9 unhatched 8/2
10448 H ♀ ♂	# Males emerged	1										
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	8/6	8/7	8/8	8/9	8/10	8/11	8/12	8/13	8/14	8/15	8/16

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Comments: (1) Date / Day correction

Review: _____ Date: 12/15/99

Laboratory: Aqualec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3189~~ 3189/3196	Test Start: 7/6/99

Sample / Repl.	Response	42	43	44	45	46	47	48	49	50	51	52
10449 A	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
						0 larval 0 pupae						
10449 B	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
						0 larval 0 pupal						
10449 C	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
						0 larval 0 pupal						
	Init./Date (1999)	8/18	8/19	8/20	8/21	8/22	8/23	8/24	8/25	8/26	8/27	8/28

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3169~~ 3189/3196	Test Start: 7/6/99

Sample / Repl.	Response	42	43	44	45	46	47	48	49	50	51	52
10449 D	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
						Observed 0 pupae						
10449 E	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
						Observed 0 pupae						
10449 F	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
						Observed 0 pupae						
	Init./Date (1999)	8/18	8/19	8/20	8/21	8/22 SK	8/23	8/24	8/25	8/26	8/27	8/28

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3169~~ 3189/3196	Test Start: 7/6/99

Sample / Repl.	Response	42	43	44	45	46	47	48	49	50	51	52
10449 G	# Males emerged			X								
	# Females emerged	8/13										
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
						0 larvae 0 pupae						
10449 H	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
						0 larvae 0 pupae						
	Init./Date (1999)	8/18	8/19	8/20	8/21	8/22	8/23	8/24	8/25	8/26	8/27	8/28

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Comments: Date of first emergence 8/15/99 SMT
All emerged by 8/22/99

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: 3156 / ~~3189~~ 3196	Test Start: 7/7/99

Sample / Rept.	Response	20	21	22	23	24	25	26	27	28	29	30
10472 A	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10472 B	# Males emerged					1						
	# Females emerged											1
	Cumulative number emerged					1						
	Male Time to Mortality (days)					4 days (8/4)						
	Females Time to Mortality (days)											6d (8/2)
	Pairings #											1 (4 72C male)
	Egg Case # / No. Eggs / Time to hatch / # hatched											(No eggs 8/2) 0 0 8/8
10472 C	# Males emerged								1d			1
	# Females emerged						1dead		1			
	Cumulative number emerged											
	Male Time to Mortality (days)											1 day (8/7)
	Females Time to Mortality (days)								1 day (8/4)			
	Pairings #								1			
	Egg Case # / No. Eggs / Time to hatch / # hatched									No egg case		
	Init./Date (1999)	7/27	7/28	7/29	7/30	7/31 JG	8/1 JG	8/2	8/3	8/4 J	8/5 JG	8/6 JG

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: J Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: 3156 / ~~3189~~ 3196	Test Start: 7/7/99

Sample / Repl.	Response	20	21	22	23	24	25	26	27	28	29	30
10472 D	# Males emerged						1		1		1	
	# Females emerged									1		2
	Cumulative number emerged											
	Male Time to Mortality (days)						3 days (8/4)		2d. (8/6)		2d (8/10)	
	Females Time to Mortality (days)									1 day (8/5)		1 days
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10472 E	# Males emerged			1							1d	1
	# Females emerged											
	Cumulative number emerged			1								
	Male Time to Mortality (days)			8/4 (6th days)								
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10472 F	# Males emerged						1dead					
	# Females emerged									1		
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)									2d (8/6)		
	Pairings #									1		
	Egg Case # / No. Eggs / Time to hatch / # hatched										EST. 344 8/12	eggcase not normal shape
	Init./Date (1999)	7/27	7/28	7/29	7/30	7/31	8/1	8/2	8/3	8/4	8/5	8/6

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: 3156 / ~~3189~~ 7196	Test Start: 7/7/99

Sample / Rept.	Response	20	21	22	23	24	25	26	27	28	29	30
10472 G	# Males emerged									2		
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)								4 days (8/8)	1 day		
	Females Time to Mortality (days)									5 d (8/6)	1 d (8/6)	
	Pairings #									1 F/CM	1 w/ 472D	
	Egg Case # / No. Eggs / Time to hatch / # hatched											
								Day 26				
10472 H	# Males emerged						1	1				
	# Females emerged						2	2				
	Cumulative number emerged											
	Male Time to Mortality (days)							6 days (8/8)				
	Females Time to Mortality (days)							3 days (8/5)				
	Pairings #						1 w/ 472H					
	Egg Case # / No. Eggs / Time to hatch / # hatched								1 56 2	No egg case		
									50 unhatched (8/4) = 97%			
	Init./Date (1999)	7/27	7/28	7/29	7/30	7/31	8/1	8/2 JJG	8/3 JJG	8/4	8/5	8/6

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Comments:

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3150~~ 3189/3196	Test Start: 7/6/99

Sample / Rept.	Response	31	32	33	34	35	36	37	38	39	40	41
10472 A	# Males emerged	2										
	# Females emerged	0										
	Cumulative number emerged											
	Male Time to Mortality (days)	3d (8/12)	(8/12)	3d (8/12)								
	Females Time to Mortality (days)						3d		2d (8/14)			
	Pairings #						1 w/ 8/12		w/ 4720 Alive			
	Egg Case # / No. Eggs / Time to hatch / # hatched							1,394 100% 8/21		1,558 0% hatch (disintegrated)		
10472 B	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)			2 days (8/11)		7d (8/18)					1d (8/12)	
	Pairings #	1 w/ 4720		w/ 4720		1					w/ 4720 Alive 8/12	
	Egg Case # / No. Eggs / Time to hatch / # hatched		1840 8995 100% 8/17	2,200	1,795 100% 8/12		no egg case		1,955 0% hatch 8/23	amorphous		
10472 C	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	8/7	8/8	8/9	8/10	8/11	8/12	8/13	8/14	8/15	8/16	8/17

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3169~~ 3189/3196	Test Start: 7/6/99

Sample / Repl.	Response	~~31~~	~~32~~ 31	~~33~~ 32	~~34~~ 33	~~35~~ 34	~~36~~ 35	~~37~~ 36	~~38~~ 37	~~39~~ 38	~~40~~ 39	~~41~~ 40
10472 D	# Males emerged					~~1~~ 5						
	# Females emerged	(1)										
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched		1 from one egg (D) 780 eggs 10 90									
10472 E	# Males emerged			2				1c 1d				
	# Females emerged						1					
	Cumulative number emerged											
	Male Time to Mortality (days)			3d (8/11) 4d (8/12)								
	Females Time to Mortality (days)						4d (8/10)					
	Pairings #						1 w/ 3d					
	Egg Case # / /No. Eggs / Time to hatch / # hatched							2,160 99%				
10472 F	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	8/6	8/7	8/8	8/9	8/10	8/11 DMV	8/12	8/13	8/14	8/15	8/16

(1) 41

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

(1) Date / Day correction

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3469~~ 3189/3196	Test Start: 7/6/99

Sample / Repl.	Response	31	32 / 31	33 / 32	34 / 33	35 / 34	36 / 35	37 / 36	38 / 37	39 / 38	40 / 39	41 / 40
10472 G	# Males emerged	(1)	2 (1 each)								X	
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)		1 25 0 days									
	Females Time to Mortality (days)		8d (8/15)									
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10472 H	# Males emerged		1 (Pairing 1 of 2 8/7)			1		X			X	
	# Females emerged				X 9/2							
	Cumulative number emerged											
	Male Time to Mortality (days)		5d (8/12)			5d (8/15)						
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	8/6	8/7	8/8	8/9 JG	8/10 JG	8/11	8/12 JG	8/13	8/14	8/15 JG	8/16

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Comments: (1) Date / Day correction. CT

Review: CT Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3169~~ 3187/3196	Test Start: 7/6/99

Sample / Repl.	Response	42	43	44	45	46	47	48	49	50	51	52
10472 A	# Males emerged					1						
	# Females emerged		1	1 squished								
	Cumulative number emerged											
	Male Time to Mortality (days)					3d (8/18)						
	Females Time to Mortality (days)		3d (8/18)									
	Pairings #		w/4P	w/4P								
	Egg Case # / #No. Eggs / Time to hatch / # hatched											
10472 B	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / #No. Eggs / Time to hatch / # hatched											
10472 C	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / #No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	8/18	8/19	8/20	8/21	8/22	8/23	8/24	8/25	8/26	8/27	8/28

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3168~~ 3189/3196	Test Start: 7/6/99

Sample / Repl.	Response	42	43	44	45	46	47	48	49	50	51	52
10472 D	# Males emerged			1								X
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)			8d (5/13)								
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10472 E	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10472 F	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	8/18	8/19	8/20 JG	8/21	8/22	8/23	8/24	8/25	8/26	8/27	8/28 JG

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3188~~ 3189/3196	Test Start: 7/6/99

Sample / Repl.	Response	42	43	44	45	46	47	48	49	50	51	52
10472 G	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
10472 H	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	8/18	8/19	8/20	8/21	8/22	8/23	8/24	8/25	8/26	8/27	8/28

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Comments:

DATE of Last Emergence 8/22/99
ALL Reps ended 8/29/99
No larvae or pupae found 8/29/99 JJG
(DAY 23)

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: 3156 / ~~3189~~ 3196	Test Start: 7/7/99

Sample / Repl.	Response	20	21	22	23	24	25	26	27	28	29	30
10473 A	# Males emerged					1				1		
	# Females emerged											
	Cumulative number emerged					1						
	Male Time to Mortality (days)					3d (8/3)				7 days (8/11)		
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10473 B	# Males emerged						1 dead					1
	# Females emerged						2 dead 1 alive					
	Cumulative number emerged											
	Male Time to Mortality (days)											1 day (8/7)
	Females Time to Mortality (days)						6 days (8/7)					
	Pairings #								1			
	Egg Case # / No. Eggs / Time to hatch / # hatched									1 1830 eggs 100% 8/12		
10473 C	# Males emerged										id	
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	7/27	7/28	7/29	7/30	7/31 JG	8/1 JG	8/2	8/3 JG	8/4	8/5	8/6 JG

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: [signature] Date: 12/15/99

Laboratory: Aquatic Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: 3156 / ~~3189~~	Test Start: 7/7/99

Sample / Repl.	Response	20	21	22	23	24	25	26	27	28	29	30
10473 D	# Males emerged											
	# Females emerged				1		1	1				
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)				3 (8/2)			9 days (8/8)				
	Pairings #					1 (8/3 male)						
	Egg Case # / #No. Eggs / Time to hatch / # hatched						est. 390 8/4 - no hatching 8/7 No hatch			1 2160 2998 (very long time)	3° 4 unhatched 8995	8/11 — 99.8%
10473 E	# Males emerged								*			
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / #No. Eggs / Time to hatch / # hatched											
10473 F	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / #No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	7/27	7/28	7/29	7/30 JJG	7/31 JJG	8/1 JJG	8/2 JJG	8/3	8/4	8/5	8/6

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: 3156 / ~~3189~~ 3196	Test Start: 7/7/99

Sample / Rept.	Response	20	21	22	23	24	25	26	27	28	29	30
10473 G	# Males emerged				1 dead				1			
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)				0				9 days (8/11)			
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10473 H	# Males emerged								1 (8/11)		X	1 (see next page)
	# Females emerged										1 (8/14)	1
	Cumulative number emerged											
	Male Time to Mortality (days)								2 days (8/15)		5 days (8/18)	
	Females Time to Mortality (days)										0 days	
	Pairings #											1 → small Amount case 8/7 120 eggs
	Egg Case # / No. Eggs / Time to hatch / # hatched											0% hatch
	Init./Date (1999)	7/27	7/28	7/29	7/30 JG	7/31	8/1	8/2	8/3	8/4	8/5	8/6 JG

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Comments:

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3189~~ 3189 / ~~2195~~ 2196	Test Start: 7/6/99

Sample / Repl.	Response	31	32	33	34	35	36	37	38	39	40	41
10473 A	# Males emerged	1						X				
	# Females emerged			1	1			X				
	Cumulative number emerged											
	Male Time to Mortality (days)	1d (8/13)										
	Females Time to Mortality (days)			4d (8/13)	6d (8/14)							
	Pairings #			1 w/ 1 w/ 1 w/		1 w/ 1 w/ 8/14						
	Egg Case # / /No. Eggs / Time to hatch / # hatched				1 (1) 1 w/ 1 w/ 100% 8/18		no case 2° case				emphysema 989 0% hatch 8/23	
10473 B	# Males emerged										1	X
	# Females emerged							1		X		
	Cumulative number emerged											
	Male Time to Mortality (days)										1d (8/17)	
	Females Time to Mortality (days)							2d (8/15)				
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
10473 C	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	8/7	8/8	8/9 JG	8/10	8/11	8/12 JG	8/13	8/14	8/15	8/16 JG	8/17

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3169~~ 7189/7196	Test Start: 7/6/99

Sample / Repl.	Response	D 31	32 31	33 32	34 33	35 34	36 35	37 36	38 37	39 38	40 39	41 40
10473 D	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
10473 E	# Males emerged											1
	# Females emerged				1	X						
	Cumulative number emerged											
	Male Time to Mortality (days)				1d (8/10)							5d (8/12)
	Females Time to Mortality (days)											
	Pairings #				1/473A 05M							
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
10473 F	# Males emerged								1d			
	# Females emerged								1d			
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / /No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	8/6	8/7	8/8	8/9	8/10	8/11	8/12	8/13	8/14	8/15	8/16

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

(1) Date / Day correction

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: 3199 3199/3196	Test Start: 7/6/99

Sample / Repl.	Response	31	32/31	33/32	34/33	35/34	36/35	37/36	38/37	39/38	40/39	41/40
10473 G	# Males emerged	①										
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10473 H	# Males emerged	1										
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)	1 (8/12)										
	Females Time to Mortality (days)											
	Pairings #	1										
	Egg Case # / No. Eggs / Time to hatch / # hatched	Egg case period data sheet	1 sample 2nd phase 120 eggs		1 2,322		1 1900					
	Init./Date (1999)	8/6	8/7	8/8	8/9	8/10	8/11	8/12	8/13	8/14	8/15	8/16

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Comments: ① Date / Day correction
② Correction

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3169~~ 3189/3196	Test Start: 7/6/99

Sample / Repl.	Response	42	43	44	45	46	47	48	49	50	51	52
10473 A	# Males emerged			1					K			
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)			Bd (8/20)								
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10473 B	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10473 C	# Males emerged											
	# Females emerged			1				K				
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)			Ud (8/20)								
	Pairings #			1								
	Egg Case # / No. Eggs / Time to hatch / # hatched				1,190		2° Case					
					100%							
	Init./Date (1999)	8/18	8/19	8/20 JC	8/21 JC	8/22	8/23	8/24	8/25	8/26	8/27	8/28

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3189~~ 3189/3190	Test Start: 7/6/99

Sample / Repl.	Response	42	43	44	45	46	47	48	49	50	51	52
10473 D	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10473 E	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)				11d (8/15)							
	Females Time to Mortality (days)				2d (8/23)							
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched					1/260 8/25						
10473 F	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)		11d (8/13)									
	Females Time to Mortality (days)		2d (8/12)				2d (8/25)					
	Pairings #						1473E 8/25					
	Egg Case # / No. Eggs / Time to hatch / # hatched			1/391 8/15								
	Init./Date (1999)	8/18	8/19 JG	8/20 JG	8/21 JG	8/22 JG	8/23 JG	8/24	8/25 JG	8/26	8/27	8/28

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Midge (*Chironomus tentans*) Chronic Toxicity Test Biological Monitoring

Project: 99026 M-C Industriplex	BTR: ~~3169~~ 3189/3196	Test Start: 7/6/99

Sample / Repl.	Response	42	43	44	45	46	47	48	49	50	51	52
10473 G	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
10473 H	# Males emerged											
	# Females emerged											
	Cumulative number emerged											
	Male Time to Mortality (days)											
	Females Time to Mortality (days)											
	Pairings #											
	Egg Case # / No. Eggs / Time to hatch / # hatched											
	Init./Date (1999)	8/18	8/19	8/20	8/21	8/22	8/23	8/24	8/25	8/26	8/27	8/28

Emergence scoring: Record the # completely emerged (#C) and the number partially emerged (#P). Also record any pupae which die (D) before emergence. D = dead for flies which emerge but are not surviving.

Comments: Date of Last Emergence = 8/23/99
All Reps ended 8/30
No larvae or pupae found 8/30 JJG

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

Posted from M-C 7/7 chronic RIT start (period - 6 reps)

Chironomus tentans Culture and Pre-test Environmental Conditions Data

Egg Deposit Date: 7/4	Larval Hatch Date: 7/7	Culture ID: 7/7
Culture Source (flies): Aquatec	No. Egg Cases:	

Instructions: Isolate egg cases in petri dish with sediment recon. water. Hold in petri dish up to two days or until larval hatching begins. Add mono-layer of *Selenastrum* prior to hatching. Transfer egg cases with hatching larvae to culture box with mono-layer of fine sand, water, and *Selenastrum*. Feed daily increasing amounts of Cerophyll/Tetrafin slurry to match consumption rates (food should not accumulate). Measure water chemistry / change 80% of water weekly. Measure temperature daily in one representative culture. Split cultures if needed to accomodate larval growth. When emergence occurs, remove flies daily to mating flask or disposal flask. Remove discarded body casies.

Date	Day	Temp	pH	DO	Cond	Fed	WC	Observations	Init.
7/8	0								
7/9						✓			
7/10									
7/11									
7/12	4					✓ 1 dig		tiny tubes	JJG
7/13	5					✓	D		JJG
7/14	6					✓			JJG
7/15	7								
7/16	8							used for SRT	JJG

Culture terminated 7/16/97

EC I supplemental for MC Chronic

6 Reps

Chironomus tentans Culture and Pre-test Environmental Conditions Data

Egg Deposit Date:	Larval Hatch Date:	Culture ID: 7/8
Culture Source (flies): Aquatec FCI	No. Egg Cases:	

Instructions: Isolate egg cases in petri dish with sediment recon. water. Hold in petri dish up to two days or until larval hatching begins. Add mono-layer of *Selenastrum* prior to hatching. Transfer egg cases with hatching larvae to culture box with mono-layer of fine sand, water, and *Selenastrum*. Feed daily increasing amounts of Cerophyll/Tetrafin slurry to match consumption rates (food should not accumulate). Measure water chemistry / change 80% of water weekly. Measure temperature daily in one representative culture. Split cultures if needed to accomodate larval growth. When emergence occurs, remove flies daily to mating flask or disposal flask. Remove discarded body casies.

Date	Day	Temp	pH	DO	Cond	Fed	WC	Observations	Init.
7/8	0								
7/9	1					✓TCF			JT
7/10									
7/11									
7/12	4					✓TC hig		tiny tubes	JJG
7/13	5					✓	0		JJG
7/14	6					✓			JJG
7/15	7								
7/16	8							used for SRT	JJG

Cultures terminated 7/16/99

Environmental Consulting & Testing
1423 N. 8th St. Suite 118 • Superior, WI 54880

SHIPPING DATE: 07-07-99

FROM: ECT SUPERIOR, WI.

TO: AQUATEC
75 GREEN MT. DR.
SOUTH BURLINGTON, VT 05403
802-860-1638

SPECIES: MIDGE (C. tentan)

DATE OF DEPOSITION: 07-05-99

NUMBER: 3 + EGG MASSES

TEMP. AT SHIPPING: 22.8 C

P.O.#: 617 VERBAL: J. WILLIAMS

SHIPPED BY: Fed. Ex. 1706-1491-7

WATER CHEMISTRY RECORDS

TEMPERATURE	22 to 24	AS Co
CONDUCTIVITY	100 to 200	AS UMHOS/CM
T.HARDNESS	60 to 90	AS CACO3
T.ALKALINITY	40 to 60	AS CACO3
pH	7.3 to 7.8	

Rec. 7/8/99
Used hatching large
on 7/8/99 to start
remaining MC replicates

000188

Midge (*Chironomus tentans*) Overlying Water Environmental Monitoring: Chronic Toxicity Tests

Project: Menzie-Cura & Associates	Project: 99026 Industriplex	BTR: 3196/3189 Test Starts 7/7/99

Sample	Parameter	Day of Analysis 0	1	2	3	4	5	6	7	8	9	10
10446	T (°C)	21.8	22.9	22.7	23.6	21.5	22.3	23.0	22.2	23.2	23.1	23.4
	pH	7.4	7.2	7.3	7.4	7.6	~~7.6~~ 7.5	7.5	7.5	7.6	7.6	7.6
	DO (mg/L)	7.7	6.5	7.3	6.4	7.5	~~6.4~~ 7.7	6.8	6.7	7.8	6.9	6.8
	Conductivity	36 330 ~~220~~ (1)	X	X	X	X	X	X	X	X	X	340
	Ammonia, alk/hardness Sulfide	✓	X	X	X	X	X	X	X	X	X	X
10449	T (°C)	21.8	22.7	22.8	21.2	21.7	22.0	23.2	22.4	22.8	23.2	23.0
	pH	7.7	7.5	7.7	7.5	7.6	7.6	7.6	7.7	7.7	7.6	7.7
	DO (mg/L)	8.9	7.6	8.0	6.7	7.2	7.1	7.2	7.1	7.3	7.1	6.8
	Conductivity	36 460 ~~220~~ (1)	X	X	X	X	X	X	X	X	X	400
	Ammonia, alk/hardness Sulfide	✓	X	X	X	X	X	X	X	X	X	X
10472 JJG	T (°C)	21.4	22.4	22.8	24.1	21.4	22.7	23.1	22.1	23.0	22.1	23.4
	pH	7.4	7.4	7.5	7.5	7.6	7.6	7.5	7.7	7.7	7.6	7.6
	DO (mg/L)	7.4	6.6	6.7	5.7	7.3	6.4	6.4	6.5	6.8	6.5	6.4
	Conductivity	36 380 ~~220~~ (1)	X	X	X	X	X	X	X	X	X	360
	Ammonia, alk/hardness Sulfide	✓	X	X	X	X	X	X	X	X	X	X
	Init./Date (1999):	7/7	7/8 JG	7/9	7/10	7/11 CC	7/12 CC	7/13 JG/KC	7/14	7/15 JG/KC	7/16 CC	7/17 JJG

Comments: (1) Conductivities different from H.a. chronics - Sed. Recon. H_2O (H.a chronics OLW is 111 Lake/Sed Recon H_2O)
7/8/99 JJG

7/17/99 11:30 JJG - o.t. larvae added to aux. beakers for aux. male test reps. (M,N,O,+P)
Source: eggcases (Aquatec)

Review: [signature] Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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000139

Midge (*Chironomus tentans*) Overlying Water Environmental Monitoring: Chronic Toxicity Tests

Project: Menzie-Cura & Associates	Project: 99026 Industriplex	BTR: 3186/3189 Test Starts 7/7/99

Sample	Parameter	Day of Analysis 0	1	2	3	4	5	6	7	8	9	10
10473	T (°C)	21.4	22.4	22.7	24.0	21.7	22.2	22.9	22.7	23.6	22.8	22.9
	pH	7.2	7.3	7.6	7.6	7.8	7.6	7.5	7.4	7.6	7.5	7.6
	DO (mg/L)	6.8	6.6	7.4	7.0	7.4	6.6	6.6	6.7	6.8	6.4	6.1
	Conductivity	320	X	X	X	X	X	X	X	X	X	350
	Ammonia, alk/hardness Sulfide	✓	X	X	X	X	X	X	X	X	X	X
	T (°C)											
	pH											
	DO (mg/L)											
	Conductivity		X	X	X	X	X	X	X	X	X	
	Ammonia, alk/hardness Sulfide		X	X	X	X	X	X	X	X	X	X
	T (°C)											
	pH											
	DO (mg/L)											
	Conductivity		X	X	X	X	X	X	X	X	X	
	Ammonia, alk/hardness Sulfide		X	X	X	X	X	X	X	X	X	X
	Init./Date (1999):	7/7 JG	7/8 JG	7/9 JG	7/10 JG	7/11 CC	7/12 CC	7/13 JG	7/14 JG	7/15 JG/CC	7/16 CC	7/17 JG

Comments: Test starts 7/7/99, However there was insufficient hatching larvae to start all reps. The following replicates were started on 7/7/99 with aquatic source larvae: (7/7 Hatch)

10446 Reps D E F G H L
10449 Reps A C F H I L
10472 Reps E F G H K L
10473 Reps A C D J K L

On 7/8/99 the following replicates were started using larvae from EC4:

10446 Reps A, B, C, K, L J
10449 Reps B, D, E, G, J, K
10472 Reps A, B, C, D, I, J
10473 Reps [illegible]

Review: [illegible] Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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000190

Midge (*Chironomus tentans*) Overlying Water Environmental Monitoring: Chronic Toxicity Tests

Project: Menzie-Cura & Associates	Project: 99026 Industriplex	BTR: 3186/3189 Test Starts 7/7/99

Sample	Parameter	Day of Analysis 11	12	13	14	15	16	17	18	19	20	21
10446	T (°C)	23.0	21.5	22.8	22.2	23.1	23.7	23.1	22.9	23.0	22.9	22.2
	pH	7.7	7.5	7.6	7.6	7.4	7.5	7.6	7.4	7.5	7.4	7.5
	DO (mg/L)	7.2	6.8	6.3	5.9	5.0	6.3	6.7	5.4	6.4	6.0	6.1
	Conductivity	X	X	X	X	X	X	X	X	X	X	310
	Ammonia, alk/hardness Sulfide	X	X	X	X	X	X	X	X	X	X	X
10449	T (°C)	23.2	21.5	22.9	21.7	23.2	23.4	23.1	22.9	23.0	22.5	22.4
	pH	7.8	7.6	7.7	7.6	7.5	7.6	7.7	7.5	7.6	7.6	7.7
	DO (mg/L)	7.1	6.4	7.0	5.6	5.0	5.7	6.7	5.0	6.2	5.9	6.3
	Conductivity	X	X	X	X	X	X	X	X	X	X	350
	Ammonia, alk/hardness Sulfide	X	X	X	X	X	X	X	X	X	X	X
10472	T (°C)	23.2	21.5	22.8	22.1	23.2	23.7	23.0	22.9	23.2	23.1	22.9
	pH	7.6	7.5	7.5	7.5	7.3	7.4	7.4	7.3	7.5	7.4	7.5
	DO (mg/L)	6.8	6.1	6.3	5.3	4.0	5.1	6.0	4.5	5.9	5.7	5.8
	Conductivity	X	X	X	X	X	X	X	X	X	X	330
	Ammonia, alk/hardness Sulfide	X	X	X	X	X	X	X	X	X	X	X
	Init./Date (1999):	7/18	7/19 CC	7/20	7/21 CC	7/22 JJG	7/23	7/24 JJG	7/25 JJG	7/26 JJG	7/27	7/28 JJG

Comments: Emergence traps installed 7/27/99

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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000131

Midge (*Chironomus tentans*) Overlying Water Environmental Monitoring: Chronic Toxicity Tests

Project: Menzie-Cura & Associates	Project: 99026 Industriplex	BTR: 3186/3189 (96) Test Starts 7/7/99

		Day of Analysis 0										
Sample	Parameter	11	12	13	14	15	16	17	18	19	20	21
10473	T (°C)	23.2	21.4	22.5	22.2	22.7	23.2	22.9	22.7	23.0	23.1	22.9
	pH	7.6	7.5	7.4	7.4	7.2	7.2	7.2	7.2	7.3	7.3	7.4
	DO (mg/L)	6.4	6.1	5.9	5.7	4.3	5.0	5.5	4.4	5.5	5.9	6.0
	Conductivity	X	X	X	X	X	X	X	X	X	X	310
	Ammonia, alk/hardness Sulfide	X	X	X	X	X	X	X	X	X	X	X
	T (°C)											
	pH											
	DO (mg/L)											
	Conductivity	X	X	X	X	X	X	X	X	X	X	
	Ammonia, alk/hardness Sulfide	X	X	X	X	X	X	X	X	X	X	X
	T (°C)											
	pH											
	DO (mg/L)											
	Conductivity	X	X	X	X	X	X	X	X	X	X	
	Ammonia, alk/hardness Sulfide	X	X	X	X	X	X	X	X	X	X	X
	Init./Date (1999):	7/18	7/19 CC	7/20 CC	7/21 CC	7/22 JJG	7/23 JJG	7/24 JJG	7/25 JJG	7/26 JJG	7/27 JJG	7/28 JJG

Comments:

Review: _____ Date: 12/15/99

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000139

Midge (*Chironomus tentans*) Overlying Water Environmental Monitoring: Chronic Toxicity Tests

Project: Menzie-Cura & Associates	Project: 99026 Industriplex	BTR: 3186 / 3189 Test Starts 7/7/99

		Day of Analysis										
Sample	Parameter	22	23	24	25	26	27	28	29	30	31	32
10446	T (°C)	22.7	22.3	22.3	22.8	21.7	22.5	20.9	22.7	22.9	21.0	22.7
	pH	7.5	7.5	7.4	7.4	7.4	7.3	7.4		7.4	/	/
	DO (mg/L)	6.4	6.3	5.3	5.7	6.0	4.9	5.6		5.1	/	/
	Conductivity	X	X	X	X	X	X	X	X	X	X	/
	Ammonia, alk/hardness	X	X	X	X	X	X	X	X	X	X	/
10449	T (°C)	22.7	22.4	22.4	23.1	21.5	21.8	21.1	22.5	22.7	20.8	22.7
	pH	7.8	7.7	7.6	7.6	7.7	7.5	7.5		7.5	/	/
	DO (mg/L)	6.8	6.5	5.8	5.8	6.5	5.5	5.6		5.5	/	/
	Conductivity	X	X	X	X	X	X	X	X	X	X	/
	Ammonia, alk/hardness	X	X	X	X	X	X	X	X	X	X	
10472	T (°C)	22.6	21.4	22.6	23.0	21.4	21.8	21.0	22.5	22.5	20.6	22.7
	pH	7.5	7.5	7.3	7.4	7.4	7.4	7.4		7.4	/	
	DO (mg/L)	6.2	5.9	4.6	5.0	5.5	4.7	4.8		4.8	/	/
	Conductivity	X	X	X	X	X	X	X	X	X	X	/
	Ammonia, alk/hardness	X	X	X	X	X	X	X	X	X	X	/
	Init./Date (1999):	7/29	7/30	7/31	8/1	8/2	8/3	8/4	8/5	8/6	8/7	8/8

Comments:

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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000103

Midge (*Chironomus tentans*) Overlying Water Environmental Monitoring: Chronic Toxicity Tests

Project: Menzie-Cura & Associates	Project: 99026 Industriplex	BTR: 3186 / 3189 Test Starts 7/7/99

96

		Day of Analysis										
Sample	Parameter	22	23	24	25	26	27	28	29	30	31	32
10473	T (°C)	22.5	22.4	22.3	22.4	21.4	21.2	21.0	22.5	22.6	20.6	22.7
	pH	7.4	7.4	7.3	7.4	7.3	7.2	7.2		7.2		
	DO (mg/L)	6.1	5.3	4.6	5.2	5.5	4.4	4.3		4.2		
	Conductivity	X	X	X	X	X	X	X	X	X	X	
	Ammonia, alk/hardness	X	X	X	X	X	X	X	X	X	X	
	T (°C)											
	pH											
	DO (mg/L)											
	Conductivity	X	X	X	X	X	X	X	X	X	X	
	Ammonia, alk/hardness	X	X	X	X	X	X	X	X	X	X	
	T (°C)											
	pH											
	DO (mg/L)											
	Conductivity	X	X	X	X	X	X	X	X	X	X	
	Ammonia, alk/hardness	X	X	X	X	X	X	X	X	X	X	
	Init./Date (1999):	7/29	7/30 JG	7/31 JG	8/1 JG	8/2 JG	8/3 JG	8/4 JG	8/5 SM	8/6 JG	8/7	8/8

Comments:

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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000130

Midge (*Chironomus tentans*) Overlying Water Environmental Monitoring: Chronic Toxicity Tests

Project: Menzie-Cura & Associates	Project: 99026 Industriplex	BTR: 3186 / 3189 Test Starts 7/7/99

Sample	Parameter	Day of Analysis										
		33	34	35	36	37	38	39	40	41	42	43
10446	T (°C)	22.7	20.9	23.1	22.9	~~23.4~~ 23.5	~~22.5~~ 22.4	21.3	21.8	23.4	22.9	21.5
	pH	7.3	X	7.4	X	7.3	X	X	7.3	X	8.0	X
	DO (mg/L)	4.9	X	5.9	X	5.2	X	X	4.7	X	4.9	X
	Conductivity	X	X	340	X	X	X	X	X	X	X	X
	Ammonia, alk/hardness	X	X	✓	X	X	X	X	X	X	X	X
10449	T (°C)	22.6	20.9	23.2	23.0	~~22.6~~ 22.5	22.1	21.4	21.7	23.8	23.1	21.3
	pH	7.5	X	7.6	X	7.4	X	X	7.5	X	8.0	X
	DO (mg/L)	5.5	X	6.6	X	5.2	X	X	5.2	X	5.4	X
	Conductivity	X	X	370	X	X	X	X	X	X	X	X
	Ammonia, alk/hardness	X	X	✓	X	X	X	X	X	X	X	X
10472	T (°C)	22.5	20.8	23.3	23.0	22.4	22.4	21.4	21.7	23.8	23.1	21.6
	pH	7.4	X	7.4	X	7.4	X	X	7.4	X	8.0	X
	DO (mg/L)	4.5	X	5.8	X	5.3	X	X	4.7	X	4.6	X
	Conductivity	X	X	360	X	X	X	X	X	X	X	X
	Ammonia, alk/hardness	X	X	✓	X	X	X	X	X	X	X	X
	Init./Date (1999):	8/9 JG	8/10 JG	8/11 SM	8/12 JG	8/13 SM	8/14 SM	8/15 JG	8/16 JG	8/17 JM	8/18 JM	8/19 JM

Comments: 8/11/99 12:00 (midnight renewal missed. | SM

Review: ✓ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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000133

Midge (*Chironomus tentans*) Overlying Water Environmental Monitoring: Chronic Toxicity Tests

Project: Menzie-Cura & Associates	Project: 99026 Industriplex	BTR: 3186 / 3189 Test Starts 7/7/99

Sample	Parameter	Day of Analysis 33	34	35	36	37	38	39	40	41	42	43
10473	T (°C)	22.4	21.0	23.3	23.1	22.4	22.9	21.5	21.9	23.7	23.1	21.7
	pH	7.4	X	7.4	X	7.2	X	X	7.3	X	8.0	X
	DO (mg/L)	4.4	X	5.6	X	4.4	X	X	4.1	X	4.8	X
	Conductivity	X	X	360	X	X	X	X	X	X	X	X
	Ammonia, alk/hardness	X	X	✓	X	X	X	X	X	X	X	X
	T (°C)											
	pH		X		X		X	X		X		X
	DO (mg/L)		X		X		X	X		X		X
	Conductivity	X	X		X	X	X	X	X	X	X	X
	Ammonia, alk/hardness	X	X		X	X	X	X	X	X	X	X
	T (°C)											
	pH		X		X		X	X		X		X
	DO (mg/L)		X		X		X	X		X		X
	Conductivity	X	X		X	X	X	X	X	X	X	X
	Ammonia, alk/hardness	X	X		X	X	X	X	X	X	X	X
	Init./Date (1999):	8/9 JG	8/10 JG	8/11 JM	8/12 JG	8/13 JG	8/14 JM	8/15 JG	8/16 JG	8/17 JM	8/18 JM	8/19 JM

Comments:

Review: J Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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SC1000

Midge (*Chironomus tentans*) Overlying Water Environmental Monitoring: Chronic Toxicity Tests

Project: Menzie-Cura & Associates	Project: 99026 Industriplex	BTR: 3186/3189 Test Starts 7/7/99

		Day of Analysis										
Sample	Parameter	44	45	46	47	48	49	50	51	52	53	54
10446	T (°C)	22.0	22.8	22.8	22.6	22.6	22.9	22.7	23.1	22.7	22.7	22.1
	pH	7.4	X	X	7.2	X	7.5	X	7.3	X	X	7.3
	DO (mg/L)	5.6	X	X	3.5	X	4.5	X	4.0	X	X	3.8
	Conductivity	330	X	X	X	X	X	X	350	X	X	X
	Ammonia, alk/hardness	✓	X	X	X	X	X	X	✓	X	X	X
10449	T (°C)	21.9	22.9	22.8								
	pH	7.5	X	X		X		X		X	X	
	DO (mg/L)	6.0	X	X		X		X		X	X	
	Conductivity	350	X	X	X	X	X	X		X	X	X
	Ammonia, alk/hardness	✓	X	X	X	X	X	X		X	X	X
10472	T (°C)	22.2		22.8	22.7	22.9	23.0	22.8	23.1	22.7	22.7	
	pH	7.5	X	X	7.4	X	7.6	X	7.4	X	7.3 X	
	DO (mg/L)	5.9	X	X	4.7	X	5.9	X	4.4	X	6.0 X	
	Conductivity	340	X	X	X	X	X	X	360	X	330 X	X
	Ammonia, alk/hardness	✓	X	X	X	X	X	X	✓	X	✓ X	X
	Init./Date (1999):	8/20 JM	8/21 JG	8/22 JG	8/23 JG	8/24 JM	8/25 JM	8/26 JM	8/27 JM	8/28 JG	8/29 JG	8/30

Comments: 8/22/99 Alkalinity/Hardness and Ammonia not taken for ending sample #10449.

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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000107

Midge (*Chironomus tentans*) Overlying Water Environmental Monitoring: Chronic Toxicity Tests

Project: Menzie-Cura & Associates	Project: 99026 Industriplex	BTR: 3186/3189 Test Starts 7/7/99

		Day of Analysis										
Sample	Parameter	44	45	46	47	48	49	50	51	52	53	54
10473	T (°C)	22.2	23.2	22.9	22.6	22.7	22.7	22.8	23.3	22.8	22.7	22.6
	pH	7.4	X	X	7.3	X	7.4	X	7.4	X	X	7.3
	DO (mg/L)	5.3	X	X	3.3	X	4.0	X	3.4	X	X	3.5
	Conductivity	340	X	X	X	X	X	X	360	X	X	X 350
	Ammonia, alk/hardness	✓	X	X	X	X	X	X	✓	X	X	X
	T (°C)											
	pH		X	X		X		X		X	X	
	DO (mg/L)		X	X		X		X		X	X	
	Conductivity		X	X	X	X	X	X		X	X	X
	Ammonia, alk/hardness		X	X	X	X	X	X		X	X	X
	T (°C)											
	pH		X	X		X		X		X	X	
	DO (mg/L)		X	X		X		X		X	X	
	Conductivity		X	X	X	X	X	X		X	X	X
	Ammonia, alk/hardness		X	X	X	X	X	X		X	X	X
	Init./Date (1999):	8/20 JM	8/21 JG	8/22 JG	8/23 JG	8/24 JM	8/25 JM	8/26 JM	8/27 JM	8/28 JG	8/29 JG	8/30

Comments:

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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SC1000 0001035

Midge (*Chironomus tentans*) Overlying Water Environmental Monitoring: Chronic Toxicity Tests

Project: Menzie-Cura & Associates	Project: 99026 Industriplex	BTR: 3196/3189 Test Starts 7/7/99

Day of Analysis 0

Sample	Parameter	55	56	57	58	59	60	61	62	63	64	65	66
10446	T (°C)	22.0	22.2	22.1	22.5	22.8	22.8	23.1	23.4	23.6	24.6	23.1	23.0 9/12 22.7
	pH	X	6.6	X	7.3	X	X	7.2	X	7.2	X	7.3	
	DO (mg/L)	X	2.8	X	3.3	X	X	3.2	X	2.8	X	3.7	
	Conductivity	X	X	X	330	X	X	X	X	X	X	310	
	Ammonia, alk/hardness	X	X	X	✓	X	X	X	X	X	X	✓	
10449	T (°C)	—	—	—	—	—	—	—	—	—	—	—	
	pH	X	—	X	—	X	X	—	X	—	X	—	
	DO (mg/L)	X	—	X	—	X	X	—	X	—	X	—	
	Conductivity	X	X	X	—	X	X	X	X	X	X	—	
	Ammonia, alk/hardness	X	X	X	—	X	X	X	X	X	X	—	
10472	T (°C)	—	—	—	—	—	—	—	—	—	—	—	
	pH	X	—	X	—	X	X	—	X	—	X	—	
	DO (mg/L)	X	—	X	—	X	X	—	X	—	X	—	
	Conductivity	X	X	X	—	X	X	X	X	X	X	—	
	Ammonia, alk/hardness	X	X	X	—	X	X	X	X	X	X	—	
	Init./Date (1999):	8/31 JG	9/1 JM	9/2 JM	9/3 JM	9/4 JG	9/5 JG	9/6 JG	9/7 JM	9/8 JM	9/9 JG	9/10 JM	9/11 JG

Comments:

Review: _____ Date: 12/15/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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mus tentans) Overlying Water Environmental Monitoring: Chronic Toxicity Tests

ra & Associates	Project: 99026 Industriplex	BTR: 31~~86~~96/3189 Test Starts 7/7/99

	Day of Analysis										
Parameter	66	67	68	69	70	71	72	73	74	75	76
T (°C)	23.0	22.7	22.4	23.4	23.7	23.3	24.7				
pH	X	X	7.3	X	7.2	X	7.3	X	X		X
DO (mg/L)	X	X	4.4	X	3.4	X	4.0	X	X		X
Conductivity	X	X	X	X	X	X	310	X	X	X	X
mmonia, alk/hardness	X	X	X	X	X	X	✓	X	X	X	X
T (°C)											
pH	X	X		X		X		X	X		X
DO (mg/L)	X	X		X		X		X	X		X
Conductivity	X	X	X	X	X	X		X	X	X	X
mmonia, alk/hardness	X	X	X	X	X	X		X	X	X	X
T (°C)											
pH	X	X		X		X		X	X		X
DO (mg/L)	X	X		X		X		X	X		X
Conductivity	X	X	X	X	X	X		X	X	X	X
mmonia, alk/hardness	X	X	X	X	X	X		X	X	X	X
nit./Date (1999):	9/11 JG	9/12 JG	9/13 JM	9/14 JM	9/15 JM	9/16 JM	9/17 JM	9/18	9/19	9/20	9/21

12/15/99

ALKALINITY AND HARDNESS

Sample Number	Date	Alkalinity Volume (mls)	Initial Titrant	Final Titrant	Alkalinity (mg/l)	Hardness Volume (mls)	Initial Titrant	Final Titrant	Hardness (mg/l)
10219									
	7/2/1999	50	0	0.9	18	50	0	3.6	72
	7/22/1999	50	36.2	37.6	28	50	0	5	100
	8/6/1999	50	22.3	23.4	22	50	33	37.6	92
	8/13/1999	50	6.7	8.1	28	50	22.4	27.6	104
	8/23/1999	50	5.5	6.9	28	50	24.1	30	118
Avg					*24.8*				*97.2*
Min					*18*				*72*
Max					*28*				*118*
10220									
	7/2/1999	50	0.9	1.9	20	50	3.6	8	88
	7/22/1999	50	37.6	39	28	50	5	9.8	96
	8/6/1999	50	23.4	25.3	38	50	37.6	42.5	98
	8/13/1999	50	8.1	9.3	24	50	27.6	32.8	104
	8/19/1999	50	0	1.3	26	50	0	5.7	114
Avg					*27.2*				*100.0*
Min					*20*				*88*
Max					*38*				*114*
10221									
	7/2/1999	50	1.9	2.7	16	50	8	12.3	86
	7/22/1999	50	39	40.2	24	50	9.8	14.8	100
	8/6/1999	50	25.3	26.2	18	50	42.5	47.3	96
	8/13/1999	50	9.3	10.5	24	50	32.8	38.1	106
	8/27/1999	50	3.9	5.5	32	50	6.2	11.6	108
	8/30/1999	50	9.9	11.4	30	50	30.9	36.5	112

Sample Number	Date	Alkalinity Volume (mls)	Initial Titrant	Final Titrant	Alkalinity (mg/l)	Hardness Volume (mls)	Initial Titrant	Final Titrant	Hardness (mg/l)
Avg					*24.0*				*101.3*
Min					*16*				*86*
Max					*32*				*112*
10223									
	7/2/1999	50	2.7	4.9	44	50	12.3	20	154
	7/22/1999	50	40.2	41.8	32	50	14.8	20.4	112
	8/6/1999	50	26.2	27.8	32	50	0	4.3	86
	8/13/1999	50	10.5	11.8	26	50	38.1	43.3	104
	8/22/1999	50	2.6	4.1	30	50	11.6	16.3	130
Avg					*32.8*				*117.2*
Min					*26*				*86*
Max					*44*				*154*
10224									
	7/2/1999	50	4.9	5.7	16	50	20	23.6	72
	7/22/1999	50	41.8	43.1	26	50	20.4	25.2	96
	8/6/1999	50	27.8	29	24	50	4.3	9.9	112
	8/13/1999	50	11.6	13.1	26	50	43.3	48.4	102
	8/22/1999	50	4.1	5.5	28	50	18.3	24.1	116
Avg					*24.0*				*99.6*
Min					*16*				*72*
Max					*28*				*116*
10341									
	7/6/1999	50	5.7	6.7	20	50	0	2.9	58
	7/26/1999	50	43.1	44.2	22	50	25.2	29.8	92
	8/10/1999	50	35.8	36.8	20	50	9.9	14.3	86
	8/17/1999	50	18.7	19.9	24	50	22.4	27.4	100
	8/27/1999	50	5.5	6.9	28	50	11.6	16.5	98
	9/3/1999	50	12.8	14.4	32	50	41.7	46.9	104
	9/10/1999	50	14.4	15.6	24	50	0.6	5.2	92
	9/16/1999	50	16.9	18.7	36	50	10	14.8	96

Sample Number	Date	Alkalinity Volume (mls)	Initial Titrant	Final Titrant	Alkalinity (mg/l)	Hardness Volume (mls)	Initial Titrant	Final Titrant	Hardness (mg/l)
Avg					*25.8*				*91.0*
Min					*20*				*58*
Max					*36*				*104*
10342									
	7/6/1999	50	6.7	7.5	16	50	2.9	6	62
	7/26/1999	50	44.2	45.3	22	50	29.8	34.1	86
	8/10/1999	50	36.8	37.9	22	50	14.3	19	94
	8/17/1999	50	19.9	21.2	26	50	27.4	32.5	102
	8/27/1999	50	6.9	8.3	28	50	16.5	21.6	102
	8/30/1999	50	6.9	8.4	30	50	19.4	25.1	114
Avg					*24.0*				*93.3*
Min					*16*				*62*
Max					*30*				*114*
10343									
	7/6/1999	50	7.5	8.3	16	50	6	9.5	70
	7/26/1999	50	45.3	46.6	26	50	34.1	39.1	100
	8/10/1999	50	37.9	39	22	50	19	23.7	94
	8/17/1999	50	21.2	22.6	28	50	32.5	37.7	104
	8/23/1999	50	6.9	8.4	30	50	30	36	120
Avg					*24.4*				*97.6*
Min					*16*				*70*
Max					*30*				*120*
10344									
	7/6/1999	50	8.3	9.5	24	50	9.5	14.3	96
	7/26/1999	50	46.6	48	28	50	39.1	44.3	104
	8/10/1999	50	39	40.1	22	50	23.7	29	106
	8/17/1999	50	22.6	24.1	30	50	37.7	43.1	108
	8/27/1999	50	8.3	9.9	32	50	21.6	27	108
	8/30/1999	50	8.4	9.9	30	50	25.1	30.9	116

Sample Number	Date	Alkalinity Volume (mls)	Initial Titrant	Final Titrant	Alkalinity (mg/l)	Hardness Volume (mls)	Initial Titrant	Final Titrant	Hardness (mg/l)
Avg					27.7				106.3
Min					22				96
Max					32				116
10346									
	7/6/1999	50	9.5	11	30	50	14.3	18.1	76
	7/26/1999	50	48	49.5	30	50	44.3	50	114
	8/10/1999	50	40.1	41.3	24	50	29	34.1	102
	8/17/1999	50	24.1	25.6	30	50	43.1	48.2	102
	8/20/1999	50	1.3	2.6	26	50	5.7	11.8	122
Avg					28.0				103.2
Min					24				76
Max					30				122
10446									
	7/7/1999	50	30.8	31.6	16	50	13.2	17.1	78
	8/11/1999	50	45.7	47.1	28	50	26.9	32	102
	8/20/1999	50	30.2	31.6	28	50	17.4	22.3	98
	8/27/1999	50	9.9	11.4	30	50	27	32.7	114
	9/3/1999	50	11.4	12.8	28	50	36.5	41.7	104
	9/10/1999	50	15.6	16.9	26	50	5.2	10	96
	9/17/1999	50	18.7	19.9	24	50	14.8	20.3	110
Avg					25.7				100.3
Min					16				78
Max					30				114
10449									
	7/7/1999	50	31.6	34.5	58	50	17.1	25.5	168
	8/11/1999	50	47.1	48.5	28	50	32	37.5	110
	8/20/1999	50	31.6	32.9	26	50	22.3	27.6	106
Avg					37.3				128.0
Min					26				106
Max					58				168

Sample Number	Date	Alkalinity Volume (mls)	Initial Titrant	Final Titrant	Alkalinity (mg/l)	Hardness Volume (mls)	Initial Titrant	Final Titrant	Hardness (mg/l)
10472									
	7/7/1999	50	34.5	35.3	16	50	25.5	29.1	72
	8/11/1999	50	48.5	49.9	28	50	37.5	42.6	102
	8/20/1999	50	32.9	34.5	32	50	27.6	32.7	102
	8/27/1999	50	11.4	13.2	36	50	32.7	37.7	100
	8/29/1999	50	3.9	5.4	30	50	7.9	13.3	108
Avg					28.4				96.8
Min					16				72
Max					36				108
10473									
	7/7/1999	50	35.3	36.2	18	50	29.1	33	78
	8/11/1999	50	0	1.3	26	50	42.6	47.9	106
	8/20/1999	50	34.5	35.9	28	50	32.7	37.7	100
	8/27/1999	50	13.2	15	36	50	37.7	43	106
	8/30/1999	50	5.4	6.9	30	50	13.3	19.4	122
Avg					27.6				102.4
Min					18				78
Max					36				122

Alkalinity and Hardness Analysis

Client: Henzie-Cura	Project: 99026	BTR: Several
Sample Description: overlying water, H. azteca + C. tentans		Day 0: 7/2

Day 20: 7/22
Day 23: 7/25
Day 30: 8/1
12 8/13

		ALKALINITY				HARDNESS				
Sample ID	Sample Date	Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	Data entered Init.
10219	7/2/99	50	0	0.9	8/20 SEP	50	0	3.6	8/20 SEP	
10220	7/2/99	50	0.9	1.9	8/20 SEP	50	3.6	8.0	8/20 SEP	
10221	7/2/99	50	1.9	2.7	8/20 SEP	50	8.0	12.3	8/20 SEP	
10222/3	7/2/99	50	2.7	4.9	8/20 SEP	50	12.3	20.0	8/20 SEP	
10224	7/2/99	50	4.9	5.7	8/20 SEP	50	20.0	23.6	8/20 SEP	
10341	7/6	50	5.7	6.7	8/20 SEP	50	0	2.9	8/20 SEP	
10342	7/6	↓	6.7	7.5	↓	↓	2.9	6.0	↓	
10343	7/6	↓	7.5	8.3	↓	↓	6.0	9.5	↓	
10344	7/6	↓	8.3	9.5	↓	↓	9.5	14.3	↓	
10345/6	7/6	↓	9.5	11.0	↓	↓	14.3	18.1	↓	
10446	7/7	50	27.3	28.1	8/23 SEP	50	0	3.4	8/23 SEP	
10448	7/7	50	28.1	29.3	8/23 SEP	50	3.4	6.9	8/23 SEP	
10472	7/7	50	29.3	30.0	8/23 SEP	50	6.9	9.7	8/23 SEP	
10473	7/7	50	30.0	30.8	8/23 SEP	50	9.7	13.2	8/23 SEP	
10446	7/7	50	30.8	31.6	8/23 SEP	50	13.2	17.1	8/23 SEP	
10449	7/7	50	31.6	34.5	↓	50	17.1	25.5	↓	
10472	7/7	50	34.5	35.3	↓	50	25.5	29.1	↓	
10473	7/7	50	35.3	36.3	↓	50	29.1	33.0	↓	

H. azteca (1 liter H2O)

C. tentans sediment (400 H2O)

✓

Alkalinity and Hardness Analysis

Client: MENZIE-CURR	Project: 99026	BTR: Several
Sample Description: Overlying H_2O ~~[illegible]~~, C. tentans Day 20		

		ALKALINITY				HARDNESS				
Sample ID	Sample Date	Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	Data entered Init.
10219	7/22	50	36.2	37.6	8/23 [illegible]	50	0	5.0	8/23 [illegible]	
10220		50	37.6	39.0		50	5.0	9.8		
10221		50	39.0	40.2		50	9.8	14.8		
10223		50	40.2	41.8		50	14.8	20.4		
10224		50	41.8	43.1		50	20.4	25.2		
10341	7/26	50	43.1	44.2	8/23 [illegible]	50	25.2	29.8	8/23 [illegible]	
10342		50	44.2	45.3		50	29.8	34.1		
10343		50	45.3	46.6		50	34.1	39.1		
10344		50	46.6	48.0		50	39.1	44.3		
10345		50	48.0	49.5		50	44.3	50.0		

Alkalinity and Hardness Analysis

Client: Menzie-Cura	Project: 99026	BTR: Several
Sample Description: Overlying H2O H azteca C tentans Day 35		

	Sample ID	Sample Date	ALKALINITY Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	HARDNESS Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	Data entered Init.
H.a.	10219	8/6	50	16.7	17.8	8/23 SDT	50	13.8	18.0	8/23 SDT	
	10220			17.8	18.8		50	18.0	22.0		
	10221			18.8	20.1		50	22.0	26.5		
	10222			20.1	21.2		50	26.5	30.8		
	10224			21.2	22.3		25:25	30.8	33.0		
C.t.	10219	8/6	50	22.3	23.4	8/23 SDT	50	33.0	37.6	8/23 SDT	
	10220			23.4	25.3			37.6	42.5		
	10221			25.3	26.2			42.5	47.3		
	10223			26.2	27.8			~~0.47.3~~	4.3		
	10224			27.8	29.0			4.3	9.9		
C.b.	10341	8/10	50	35.8	36.8	8/23 SDT	50	9.9	14.3	8/23 SDT	
	10342			36.8	37.9			14.3	19.0		
	10343			37.9	39.0			19.0	23.7		
	10344			39.0	40.1			23.7	29.0		
	10345			40.1	41.3			29.0	34.1		
H.a.	10341	8/10	50	29.0	30.1	8/23 SDT	50	34.1	38.2	8/23 SDT	
	10342			30.1	31.3			38.2	42.1		
	10343			31.3	32.7			42.1	46.1		
	10344			32.7	34.1			~~0.30.1~~ 0	4.2		
	10345			34.1	35.6			4.2	8.7		
C.t.	10446	8/11	50	41.3	42.4	8/23 SDT	50	8.7	13.1	8/23 SDT	
	10448			42.4	43.6			13.1	17.6		
	10472			43.6	44.7			17.6	22.1		
	10473			44.7	45.7			22.1	26.4		
C.t.	10446			45.7	47.1			26.4	30.0		
	10448			47.1	48.5			30.0	33.5		
	10472			48.5	49.9			33.5	42.6		
	10473			49.9	1.3			42.6	47.9		

Alkalinity and Hardness Analysis

Client: Menzie-Cura	Project: 99026	BTR: Several
Sample Description: Overlying H_2O H. azteca C. tentans Day 42		

			ALKALINITY				HARDNESS				
	Sample ID	Sample Date	Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	Data entered Init.
Ha.	10219	8/13	50	1.3	2.5	8/23 SAT	50	0	4.7	8/23 SAT	
	10220			2.5	3.5			4.7	9.2		
	10221			3.5	4.6			9.2	13.4		
	10222			4.6	5.6			13.4	18.0		
	10224			5.6	6.7			18.0	22.4		
CL	10219	8/13	50	6.7	8.1	8/23 SAT	50	22.4	27.6	8/23 SAT	
	10220			8.1	9.3			27.6	32.8		
	10221			9.3	10.5			32.8	38.1		
	10223			10.5	11.8			38.1	43.3		
	10224			11.8	13.1			43.3	48.4		
H.a	10341	8/17	50	13.1	14.2	8/23 SAT	50	0	4.5	8/23 SAT	
	10342			14.2	15.2			4.5	9.0		
	10343			15.2	16.4			9.0	13.3		
	10344			16.4	17.5			13.3	17.9		
	10345			17.5	18.7			17.9	22.4		
C.t	10341	8/17	50	18.7	19.9	8/23 SAT	50	22.4	27.4	8/23 SAT	
	10342			19.9	21.2			27.4	32.5		
	10343			21.2	22.6			32.5	37.7		
	10344			22.6	24.1			37.7	42.1		
	10345			24.1	25.6			43.1	48.2		
H.a.	10446	9/14	50	25.6	26.7	8/23 SAT	50	0	4.5	8/23 SAT	
	10448			26.7	28.0			4.5	8.8		
	10472			28.0	29.1			8.8	13.0		
	10473			29.1	30.2			13.0	17.4		

Alkalinity and Hardness Analysis

Client: menzie-cura	Project: 99026	BTR: Several
Sample Description: Overlying H_2O H. azteca / C. tentans Day 44		

		ALKALINITY				HARDNESS				
Sample ID	Sample Date	Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	Data entered Init.
10446	8/20	50	30.2	31.6	8/23	50	17.4	22.3	8/23	
10448/9		50	31.6	32.9		50	22.3	27.6	8/23	
10472		50	32.9	34.5		50	27.6	32.7	8/23	
10473		50	34.5	35.9		50	32.7	37.7	8/23	

Alkalinity and Hardness Analysis

Client: Menzie-Cura	Project: 99026	BTR: Several
Sample Description: LT Chrome End		

		ALKALINITY				HARDNESS				
Sample ID	Sample Date	Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	Data entered Init.
LT 10220	8/19	50	0	1.3	JG 8/26	50	0	5.7	JG 8/26	12/6 RAB
10345	8/20	50	1.3	2.6		50	5.7	11.8		
10223	8/22	50	2.6	4.1		50	11.8	18.3		
10224	8/22	50	4.1	5.5		50	18.3	24.1		
10219	8/23	50	5.5	6.9		50	24.1	30.0		
10343	8/23	50	6.9	8.4		50	30.0	36.0		
LT 10221	8/27	50	3.9	5.5	JG 8/28	50	6.2	11.6	JG 8/28	
10341	8/27	50	5.5	6.9		50	11.6	16.5		
10342	8/27	50	6.9	8.3		50	16.5	21.6		
10344	8/27	50	8.3	9.9		50	21.6	27.0		
10446	8/27	50	9.9	11.4		50	27.0 ~~32.7~~	32.7		
10472	8/27	50	11.4	13.2		50	32.7	37.7		
10473	8/27	50	13.2	15.0		50	37.7	43.0		

Alkalinity and Hardness Analysis

Client: Menzie-Cura	Project: 99026	BTR: Several
Sample Description: C.f. chronic		

Day	Sample ID	Sample Date	ALKALINITY Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	HARDNESS Sample Vol.	Titrant Init. Vol.	Titrant Final Vol.	Analyst Date/ Init.	Data entered Init.
53	10472	8/29	50ml	3.9	5.4	12/7/98	50ml	7.9	13.3	12/7/98	12/8/98
54	10473	8/30		5.4	6.9			13.3	19.4		
55	10342	8/30		6.9	8.4			19.4	25.1		
55	10344	8/30		8.4	9.9			25.1	30.9		
59	10221	8/30		9.9	11.4			30.9	36.5		
58	10446	9/3		11.4	12.8			36.5	41.7		
59	10341	9/3		12.8	14.4			41.7	46.9		
66	10341	9/10		14.4	15.6			0.6	5.2		
65	10446	9/10		15.6	16.9			5.2	10.0		
72	10341	9/16		16.9	18.7			10.0	14.8		
72	10446	9/17		18.7	19.9			14.8	20.3		

12/10 RP

Results of Ammonia Analyses (Total, mg/L)				
Sample ID	Porewater	Day 0	Day 10 *Hyalella azteca*	Day 10 *Chironomus tentans*
				①
10219	1.7	0.6	<0.5	1.1
10220	1.9	<0.5	<0.5	0.9
10221	13.5	3.0	0.6	1.9
10222/3	-	<0.5	<0.5	0.7
10224	3.6	<0.5	<0.5	1.3
10341	1.1	0.5	1.1	1.0
10342	5.2	2.0	0.9	1.1
10343	2.4	1.2	<0.5	0.8
10344	2.3	1.3	1.6	0.9
10345/6	-	<0.5	0.5	0.5
10446	1.4	<0.5	<0.5	0.7
10447	70	8.8	<0.5	1.6
10448/9	-	1.3	0.6	0.6
10472	14	1.7	1.1	1.4
10473	10	1.5	<0.5	0.8
10474	2030 *	259 *	9.1	11
10475	2130 *	175 *	13	14

* The result was outside of calibration range. The result should be viewed as an estimate of the ammonia concentration.

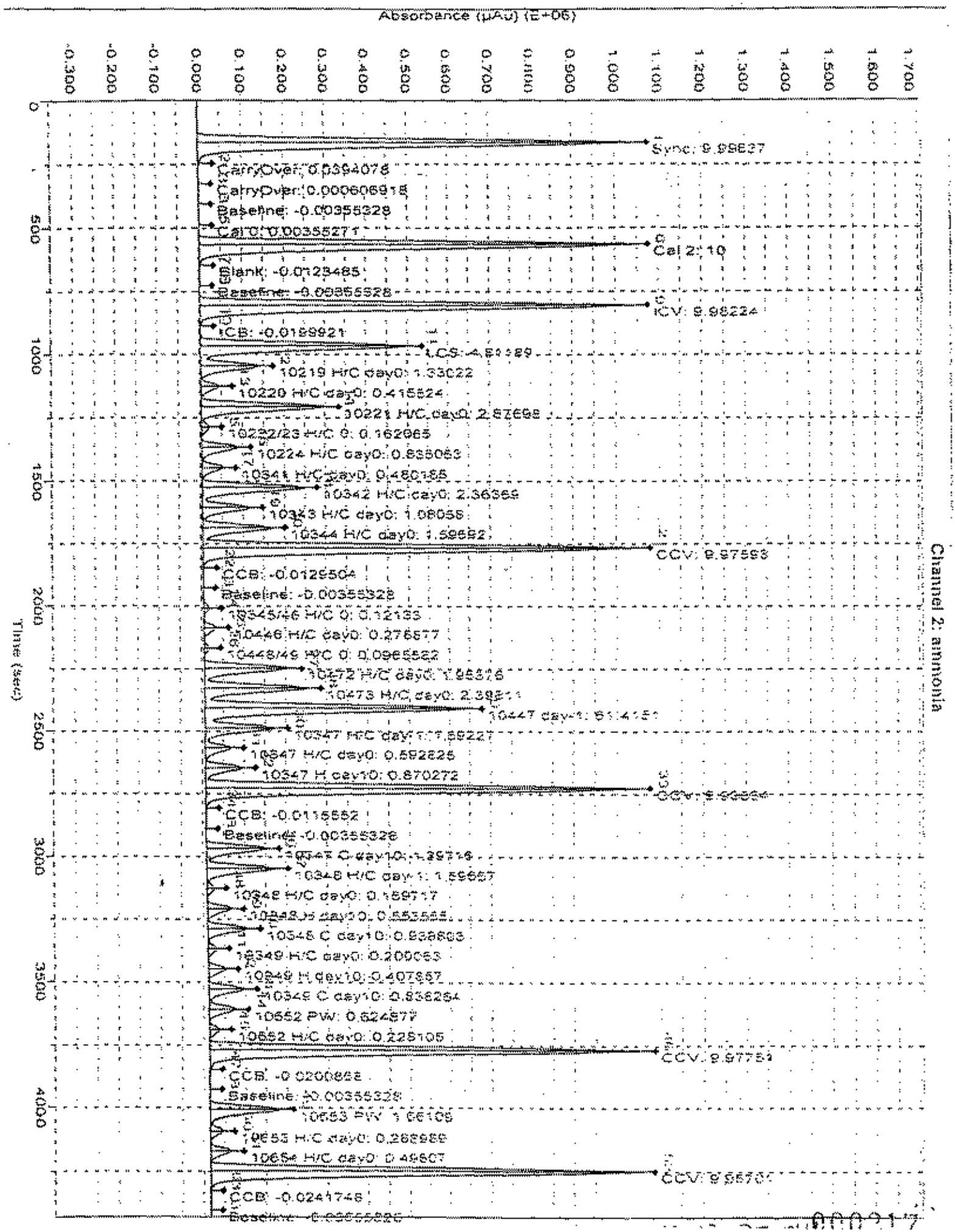
① these data pertain to acute toxicity tests only. JW

Ammonia Results for Initial, Day 20, and Final

SAMPLE NUMBER	DAYS PASSED		AMMONIA CONCENTRATION (mg/l)						
10219									
	0	INIT	1.3						
	20	CT	0.4						
	52	CT	0.3						
				Avg	0.7	Min	0.3	Max	1.3
10220									
	0	INIT	0.4						
	20	CT	0.6						
	48	CT	0.2						
				Avg	0.4	Min	0.2	Max	0.6
10221									
	0	INIT	2.9						
	20	CT	1.1						
	59	CT	0.9						
				Avg	1.6	Min	0.9	Max	2.9
10223									
	0	INIT	0.2						
	20	CT	0.7						
	51	CT	0.1						
				Avg	0.3	Min	0.1	Max	0.7
10224									
	0	INIT	0.6						
	20	CT	0.9						
	51	CT	0.1						
				Avg	0.6	Min	0.1	Max	0.9
10341									

SAMPLE NUMBER	DAYS PASSED		AMMONIA CONCENTRATION (mg/l)						
	0	INIT	0.5						
	20	CT	1.5						
	72	CT	0.1						
				Avg	0.7	Min	0.1	Max	1.5
10342									
	0	INIT	2.4						
	20	CT	0.5						
	55	CT	0.3						
				Avg	1.1	Min	0.3	Max	2.4
10343									
	0	INIT	1.1						
	48	CT	0.3						
				Avg	0.7	Min	0.3	Max	1.1
10344									
	0	INIT	1.6						
	20	CT	2.2						
	55	CT	0.6						
				Avg	1.5	Min	0.6	Max	2.2
10346									
	0	INIT	0.1						
	20	CT	0.9						
	45	CT	0.1						
				Avg	0.4	Min	0.1	Max	0.9
10446									
	0	INIT	0.3						
	20	CT	0.1						
	72	CT	0.0						
				Avg	0.1	Min	0.0	Max	0.3
10449									

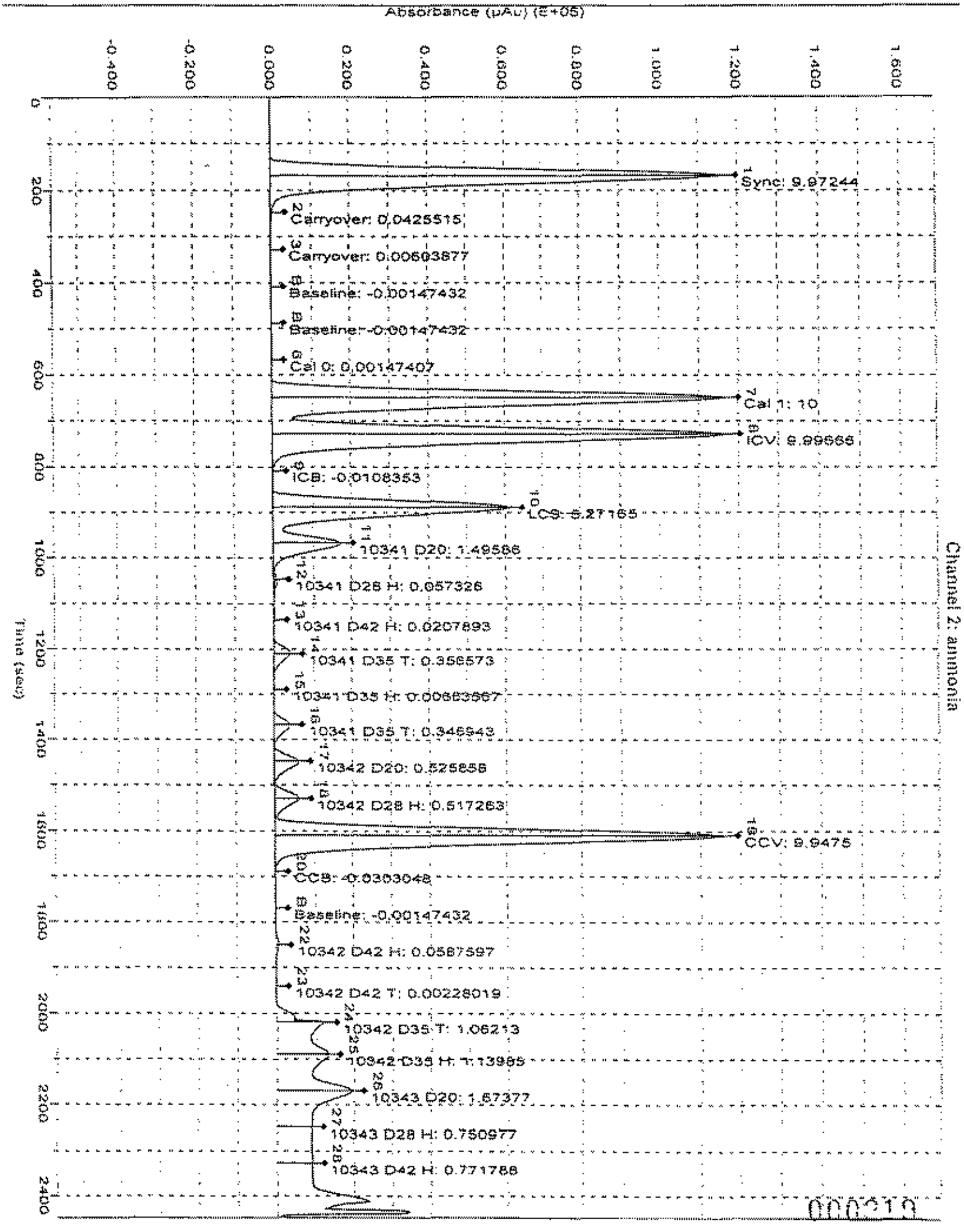
SAMPLE NUMBER	DAYS PASSED		AMMONIA CONCENTRATION (mg/l)						
	0	INIT	0.1						
	20	CT	0.2						
	46	CT	0.1						
				Avg	0.1	Min	0.1	Max	0.2
10472									
	0	INIT	2.0						
	20	CT	0.8						
	53	CT	0.1						
				Avg	0.9	Min	0.1	Max	2.0
10473									
	0	INIT	2.4						
	20	CT	0.3						
	54	CT	0.6						
				Avg	1.1	Min	0.3	Max	2.4


Absorbance (µAu) (E+06)
Channel 2: ammonia
Time (sec)
Sync: 0.99827
CarryOver: 0.0394078
CarryOver: 0.00060918
Baseline: -0.00355328
Cal 0: 0.00355271
Cal 2: 10
Blank: -0.0123485
Baseline: -0.00355328
ICV: 9.98224
ICB: -0.0159921
LCS: 4.81189
10219 H/C day0: 1.33022
10220 H/C day0: 0.415524
10221 H/C day0: 2.87698
10222/23 H/C 0: 0.162965
10224 H/C day0: 0.838063
10341 H/C day0: 0.480185
10342 H/C day0: 2.36369
10343 H/C day0: 1.08058
10344 H/C day0: 1.59692
CCV: 9.97593
CCB: -0.0129504
Baseline: -0.00355328
10345/46 H/C 0: 0.12133
10446 H/C day0: 0.276517
10448/49 H/C 0: 0.0965582
10472 H/C day0: 1.55376
10473 H/C day0: 2.39311
10447 day-1: 51.4151
10347 H/C day1: 17.59227
10347 H/C day0: 0.592625
10347 H day10: 0.870272
CCB: -0.0115552
Baseline: -0.00355328
10348 H/C day1: 1.59657
10348 H/C day0: 0.159717
10348 C day10: 0.938693
10349 H/C day0: 0.200053
10349 H day10: 0.407857
10349 C day10: 0.838254
10652 PW: 0.624577
10652 H/C day0: 0.228105
CCV: 9.97784
CCB: -0.0200868
Baseline: -0.00355328
10653 PW: 1.66109
10653 H/C day0: 0.288989
10654 H/C day0: 0.49607
CCB: -0.0241748

Peak Table: ammonia

File name: C:\FLOW_4\071499D.RST
Date: July 14, 1999
Operator: lks

Peak	Cup	Name	Type	Dil	Wt	Height	Calc. (mg/L)	Flags
1	2	Sync	SYNC	1	1	1046453	9.998365	
2	0	CarryOver	CO	1	1	4495	0.039408	
3	0	CarryOver	CO	1	1	435	0.000607	
B	0	Baseline	RB	1	1	0	-0.003553	BL
5	1	Cal 0	C	1	1	743	0.003553	
6	2	Cal 2	C	1	1	1046624	10.000000	
7	0	Blank	U	1	1	-920	-0.012348	LO
B	0	Baseline	RB	1	1	0	-0.003553	BL
9	2	ICV	U	1	1	1044766	9.982244	
10	1	ICB	U	1	1	-1720	-0.019992	LO
11	3	LCS	U	1	1	503617	4.611894	
12	61	10219 H/C day0	U	1	1	139546	1.330220	
13	62	10220 H/C day0	U	1	1	43846	0.415524	
14	63	10221 H/C day0	U	1	1	301377	2.876983	
15	64	10222/23 H/C 0	U	1	1	17328	0.162065	
16	65	10224 H/C day0	U	1	1	87740	0.835063	
17	66	10341 H/C day0	U	1	1	50611	0.480185	
18	67	10342 H/C day0	U	1	1	247673	2.363685	
19	68	10343 H/C day0	U	1	1	113427	1.080578	
20	69	10344 H/C day0	U	1	1	167450	1.596921	
21	2	CCV	U	1	1	1044106	9.975932	
22	1	CCB	U	1	1	-983	-0.012950	LO
B	0	Baseline	RB	1	1	0	-0.003553	BL
24	70	10345/46 H/C 0	U	1	1	13066	0.121330	
25	71	10446 H/C day0	U	1	1	29549	0.278877	
26	72	10448/49 H/C 0	U	1	1	10474	0.096558	
27	73	10472 H/C day0	U	1	1	204788	1.953765	
28	74	10473 H/C day0	U	1	1	251275	2.398111	
29	75	10447 day-1	U	10	1	642929	61.415092	
30	76	10347 H/C day-1	U	1	1	166963	1.592268	
31	77	10347 H/C day0	U	1	1	62396	0.592825	
32	78	10347 H day10	U	1	1	91624	0.870272	
33	2	CCV	U	1	1	1040273	9.938340	
34	1	CCB	U	1	1	-837	-0.011555	LO
B	0	Baseline	RB	1	1	0	-0.003553	BL
36	79	10347 C day10	U	1	1	146550	1.397163	
37	80	10348 H/C day-1	U	1	1	167423	1.596665	
38	81	10348 H/C day0	U	1	1	17082	0.159717	
39	82	10348 H day10	U	1	1	58258	0.553555	
40	83	10348 C day10	U	1	1	98594	0.938803	
41	84	10349 H/C day0	U	1	1	21303	0.200063	
42	85	10349 H day10	U	1	1	43044	0.407857	
43	86	10349 C day10	U	1	1	88075	0.838264	
44	87	10652 PW	U	1	1	65750	0.624877	
45	88	10652 H/C day0	U	1	1	24237	0.228105	
46	2	CCV	U	1	1	1044272	9.977513	
47	1	CCB	U	1	1	-1730	-0.020087	LO
B	0	Baseline	RB	1	1	0	-0.003553	BL
49	89	10653 PW	U	1	1	174144	1.661091	
50	90	10653 H/C day0	U	1	1	30667	0.288969	
51	91	10654 H/C day0	U	1	1	52452	0.498070	
52	2	CCV	U	1	1	1042127	9.957014	
53	1	CCB	U	1	1	-2158	-0.024175	LO
B	0	Baseline	RB	1	1	0	-0.003553	BL


Absorbance (pAU) (E+05)
-0.400
-0.200
0.000
0.200
0.400
0.600
0.800
1.000
1.200
1.400
1.600
Time (sec)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
Channel 2: ammonia
1 Sync: 9.97244
2 Carryover: 0.0425515
3 Carryover: 0.00603877
4 B Baseline: -0.00147432
5 B Baseline: -0.00147432
6 Cal 0: 0.00147407
7 Cal 1: 10
8 ICV: 9.99666
9 ICB: -0.0108353
10 LCS: 5.27165
11 10341 D20: 1.49586
12 10341 D28 H: 0.057326
13 10341 D42 H: 0.0207893
14 10341 D35 T: 0.356573
15 10341 D35 H: 0.00683667
16 10341 D35 T: 0.346543
17 10342 D20: 0.525856
18 10342 D28 H: 0.517263
19 CCV: 9.9475
20 CCB: -0.0303048
21 B Baseline: -0.00147432
22 10342 D42 H: 0.0587597
23 10342 D42 T: 0.00228019
24 10342 D35 T: 1.06213
25 10342 D35 H: 1.13985
26 10343 D20: 1.67377
27 10343 D28 H: 0.750977
28 10343 D42 H: 0.771788

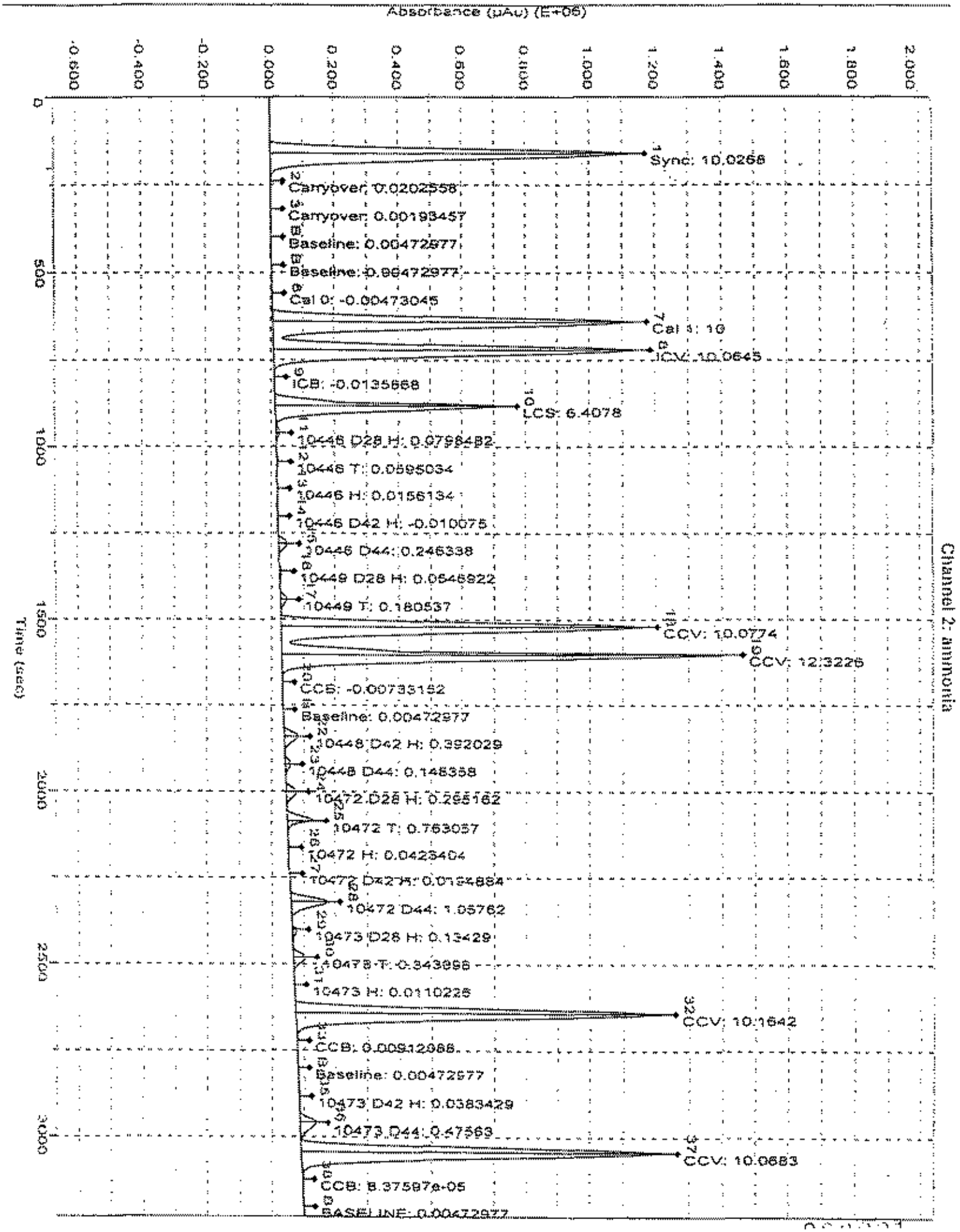
000219

Peak Table: ammonia

File name: C:\FLOW_4\082399H1.RST
Date: August 23, 1999
Operator: NVW

Peak	Cup	Name	Type	Dil	Wt	Height	Calc. (mg/L)
1	2	Sync	SYNC	1	1	1175225	10.007032
2	0	Carryover	CO	1	1	3787	0.027000
3	0	Carryover	CO	1	1	4000	0.028809
4	0	Baseline	RB	1	1	0	-0.005266
5	0	Baseline	RB	1	1	0	-0.005266
6	1	Cal 0	C	1	1	1236	0.005265
7	2	Cal 1	C	1	1	1174400	10.000000
8	2	ICV	U	1	1	1172641	9.985017
9	1	ICB	U	1	1	689	0.000606
10	3	LCS	U	1	1	621008	5.265396
11	12	10342 D42 M	U	1	1	6245	0.064981
12	13	10342 D42 T	U	1	1	2366	0.014868
13	14	10342 D35 T	U	1	1	46599	0.411329
14	15	10342 D35 M	U	1	1	49581	0.417139
15	16	10343 D20	U	1	1	132366	1.122426
16	17	10343 D28 M	U	1	1	1153	0.004575
17	18	10343 D42 M	U	1	1	1212	0.005063
18	19	10343 D42 T	U	1	1	111636	0.945962
19	20	10343 D35 T	U	1	1	131064	1.111330
20	21	10343 D35 M	U	1	1	10056	0.080409
21	2	CCV	U	1	1	1175476	10.017685
22	1	CCB	U	1	1	-631	-0.010639
23	0	Baseline	RB	1	1	0	-0.005266
24	22	10344 D20	U	1	1	263747	2.241716
25	23	10344 D28 M	U	1	1	39858	0.334302
26	24	10344 D42 M	U	1	1	14758	0.120462
27	25	10344 D42 T	U	1	1	8272	0.068208
28	26	10344 D35 T	U	1	1	34009	0.284476
29	27	10344 D35 M	U	1	1	160565	1.366075
30	28	10345 D20	U	1	1	111384	0.943668
31	29	10345 D28 M	U	1	1	0	-0.005266
32	30	10345 D42 M	U	1	1	80143	0.677534
33	31	10345 D42 T	U	1	1	47769	0.372088
34	2	CCV	U	1	1	1193792	10.080021
35	1	CCB	U	1	1	5617	0.042589
36	0	BASELINE	RB	1	1	0	-0.005266
37	32	10345 D35 T	U	1	1	9267	0.073661
38	33	10345 D35 M	U	1	1	41167	0.345453
39	2	CCV	U	1	1	1173796	9.994857
40	1	CCB	U	1	1	245	-0.003177
41	0	BASELINE	RB	1	1	0	-0.005266

Peak	Cup	Flags
1	2	
2	0	
3	0	
4	0	BL
5	0	BL
6	1	
7	2	
8	2	

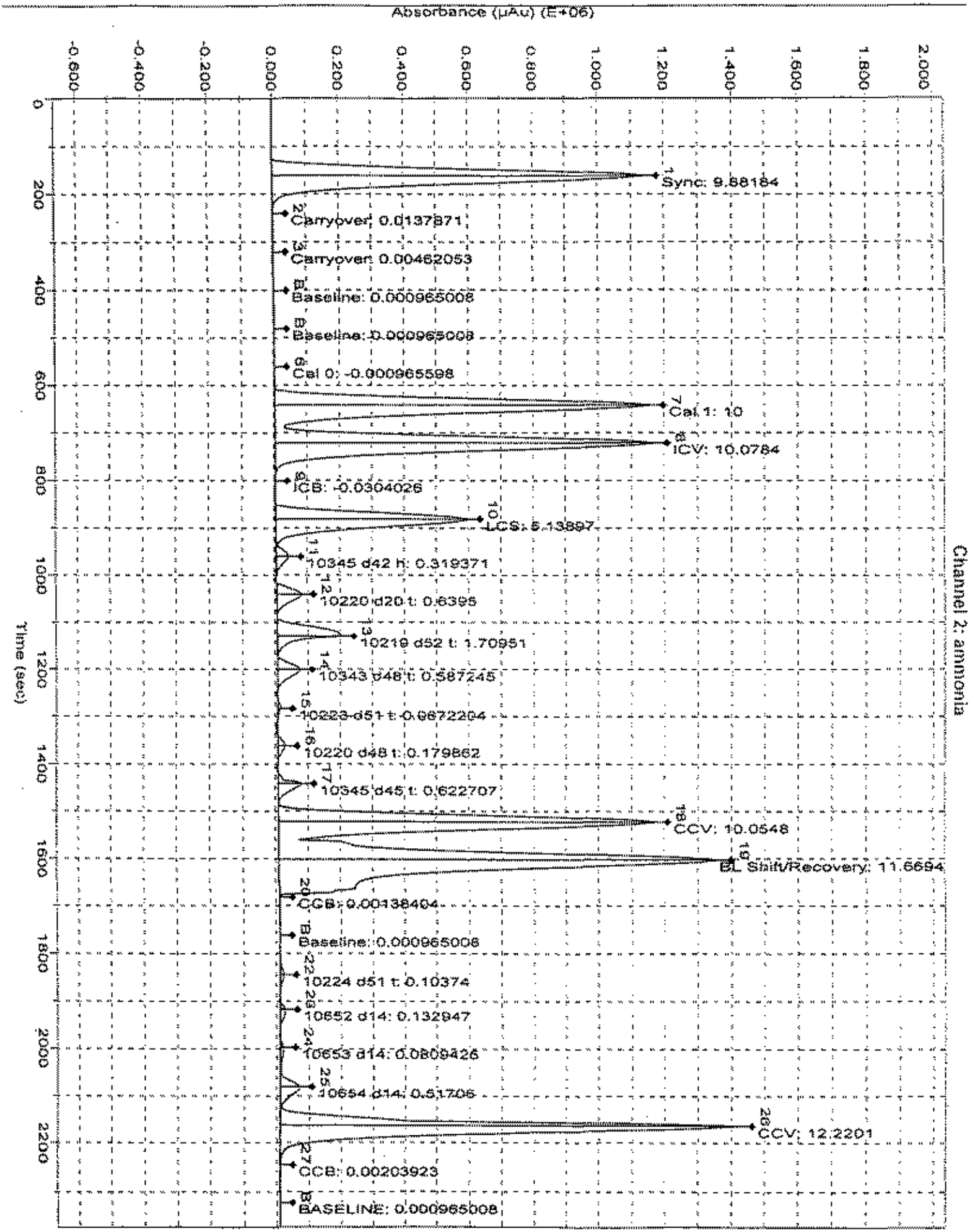

Absorbance (µAU) (E+06)
Time (sec)
Channel 2: ammonia
Sync: 10.0266
Carryover: 0.0202558
Carryover: 0.00193457
Baseline: 0.00472977
Baseline: 0.00472977
Cal 0: -0.00473045
Cal 1: 10
ICV: 10.0645
ICB: -0.0135668
LCS: 6.4078
10446 D28 H: 0.0798482
10446 T: 0.0595034
10446 H: 0.0156134
10446 D42 H: -0.010075
10446 D44: 0.246338
10449 D28 H: 0.0546922
10449 T: 0.180537
CCV: 10.0774
CCV: 12.3226
CCB: -0.00733152
Baseline: 0.00472977
10448 D42 H: 0.392029
10448 D44: 0.148358
10472 D28 H: 0.295162
10472 T: 0.763057
10472 H: 0.0423404
10472 D42 H: 0.0154884
10472 D44: 1.05762
10473 D28 H: 0.13429
10473 T: 0.343998
10473 H: 0.0110225
CCV: 10.1642
CCB: 0.00912066
Baseline: 0.00472977
10473 D42 H: 0.0383429
10473 D44: 0.47563
CCV: 10.0683
CCB: 8.37597e-05
BASELINE: 0.00472977

Peak Table: ammonia

File name: C:\FLOW_4\082399L.RST
Date: August 24, 1999
Operator: nvw

Peak	Cup	Name	Type	Dil	Wt	Height	Calc. (mg/L)
1	2	Sync	SYNC	1	1	1134453	10.026785
2	0	Carryover	CO	1	1	1757	0.020256
3	0	Carryover	CO	1	1	-316	0.001935
B	0	Baseline	RB	1	1	0	0.004730
B	0	Baseline	RB	1	1	0	0.004730
6	1	Cal 0	C	1	1	-1071	-0.004730
7	2	Cal 1	C	1	1	1131421	10.000000
8	2	ICV	U	1	1	1138724	10.064519
9	1	ICB	U	1	1	-2073	-0.013587
10	3	LCS	U	1	1	724800	6.407803
11	4	10446 D28 H	U	1	1	8503	0.079848
12	5	10446 T	U	1	1	6200	0.059503
13	6	10446 H	U	1	1	1232	0.015613
14	7	10446 D42 H	U	1	1	-1676	-0.010075
15	8	10446 D44	U	1	1	27349	0.246338
16	9	~~10449~~ D28 H	U	1	1	6787	0.064692
17	10	~~10449~~ T	U	1	1	19901	0.180537
18	2	CCV	U	1	1	1140183	10.077406
19	2	CCV	U	1	1	1394326	12.322570
20	1	CCB	U	1	1	-1365	-0.007332
B	0	Baseline	RB	1	1	0	0.004730
22	12	10448 D42 H	U	1	1	43841	0.392029
23	13	10448 D44	U	1	1	16258	0.148358
24	14	10472 D28 H	U	1	1	32876	0.295162
25	15	10472 T	U	1	1	85839	0.763057
26	16	10472 H	U	1	1	4257	0.042340
27	17	10472 D42 H	U	1	1	1671	0.019488
28	18	10472 D44	U	1	1	119182	1.057615
29	19	10473 D28 H	U	1	1	14666	0.134290
30	20	10473 T	U	1	1	38302	0.343098
31	21	10473 H	U	1	1	712	0.011023
32	2	CCV	U	1	1	1150005	10.164170
33	1	CCB	U	1	1	497	0.009121
B	0	Baseline	RB	1	1	0	0.004730
35	22	10473 D42 H	U	1	1	3805	0.038343
36	23	10473 D44	U	1	1	53304	0.475630
37	2	CCV	U	1	1	1139148	10.068260
38	1	CCB	U	1	1	-526	0.000084
B	0	BASELINE	RB	1	1	0	0.004730

Peak	Cup	Flags
1	2	
2	0	
3	0	
B	0	BL
B	0	BL
6	1	LO
7	2	
8	2	
9	1	LO
10	3	


Absorbance (µAu) (E+06)
Time (sec)
Channel 2: ammonia
1 Sync: 9.88184
2 Carryover: 0.0137871
3 Carryover: 0.00462053
4 B Baseline: 0.000965008
5 B Baseline: 0.000965008
6 Cal 0: -0.000965598
7 Cal 1: 10
8 ICV: 10.0784
9 ICB: -0.0304026
10 LCS: 5.13897
11 10345 d42 h: 0.319371
12 10220 d20 t: 0.6395
13 10219 d52 t: 1.70951
14 10343 d48 t: 0.587245
15 10223 d51 t: 0.0672204
16 10220 d48 t: 0.179862
17 10345 d45 t: 0.622707
18 CCV: 10.0548
19 BL Shift/Recovery: 11.6694
20 CCB: 0.00138404
21 B Baseline: 0.000965008
22 10224 d51 t: 0.10374
23 10652 d14: 0.132947
24 10653 d14: 0.0809426
25 10654 d14: 0.51706
26 CCV: 12.2201
27 CCB: 0.00203923
28 B BASELINE: 0.000965008

Peak Table: ammonia

File name: C:\FLOW_4\082499A.RST
Date: August 24, 1999
Operator: nvw

Peak	Cup	Name	Type	Dil	Wt	Height	Calc. (mg/L)
1	2	Sync	SYNC	1	1	1142797	9.881838
2	0	Carryover	CO	1	1	1483	0.013787
3	0	Carryover	CO	1	1	423	0.004621
B	0	Baseline	RB	1	1	0	0.000965
B	0	Baseline	RB	1	1	0	0.000965
6	1	Cal 0	C	1	1	-223	-0.000966
7	2	Cal 1	C	1	1	1156464	10.000000
8	2	ICV	U	1	1	1165527	10.078362
9	1	ICB	U	1	1	-3628	-0.030403
10	3	LCS	U	1	1	594249	5.138969
11	31	10345 d42 h	U	1	1	36826	0.319371
12	32	10220 d20 t	U	1	1	73851	0.639500
13	33	10219 d52 t	U	1	1	197606	1.709511
14	34	10343 d48 t	U	1	1	67808	0.587245
15	35	10223 d51 t	U	1	1	7663	0.067220
16	36	10220 d48 t	U	1	1	20691	0.179862
17	37	10345 d45 t	U	1	1	71909	0.622707
18	2	CCV	U	1	1	1162798	10.054771
19	2	BL Shift/Recovery	U	1	1	1349540	11.669377
20	1	CCB	U	1	1	48	0.001384
B	0	Baseline	RB	1	1	0	0.000965
22	38	10224 d51 t	U	1	1	11887	0.103740
23	39	10652 d14	U	1	1	15265	0.132947
24	40	10653 d14	U	1	1	9250	0.080943
25	41	10654 d14	U	1	1	59690	0.517060
26	2	CCV	U	1	1	1413231	12.220069
27	1	CCB	U	1	1	124	0.002039
B	0	BASELINE	RB	1	1	0	0.000965

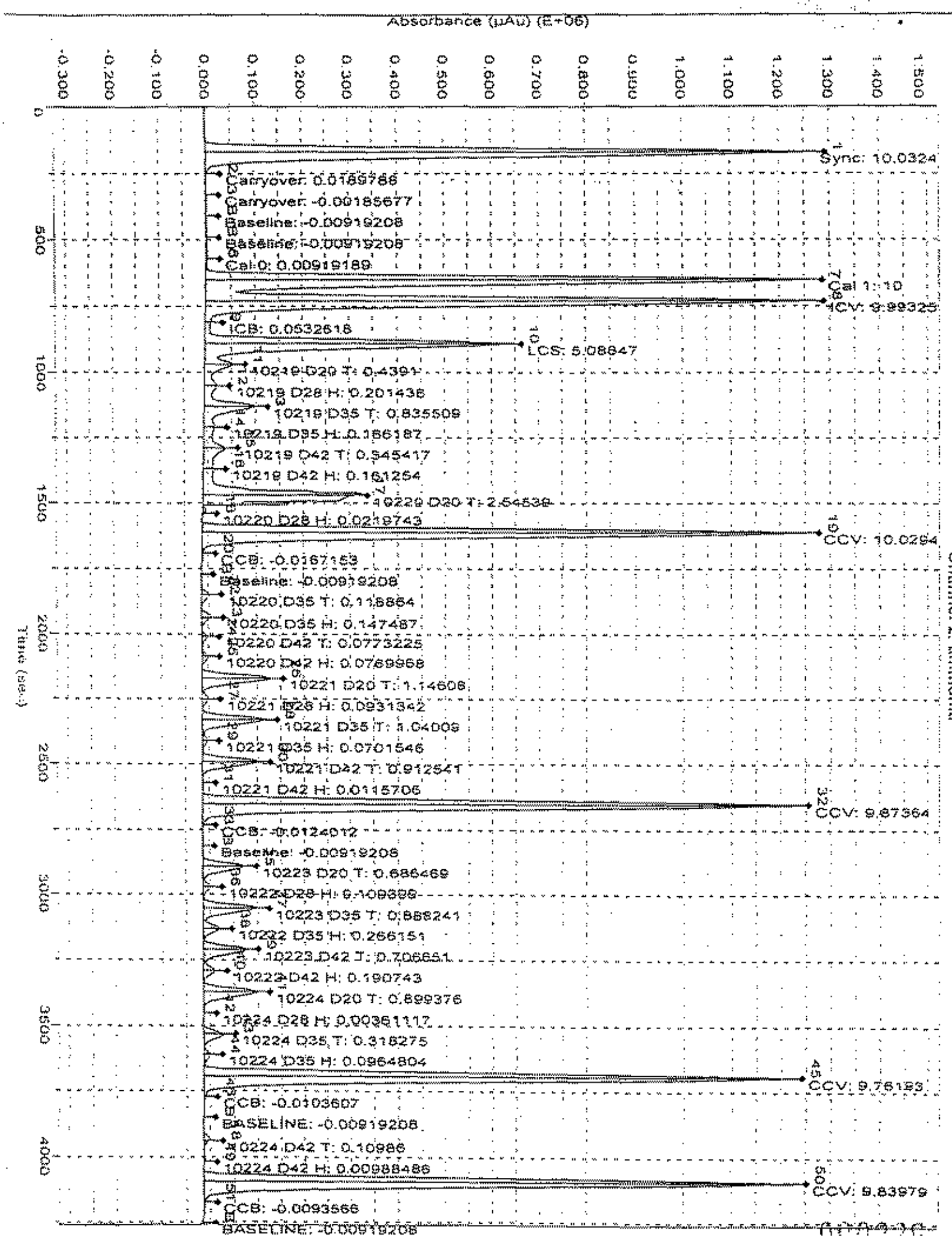
Peak	Cup	Flags
1	2	
2	0	
3	0	
B	0	BL
B	0	BL
6	1	LO
7	2	
8	2	
9	1	LO
10	3	
11	31	
12	32	
13	33	
14	34	
15	35	
16	36	
17	37	
18	2	
19	2	
20	1	
B	0	BL

Peak Table: ammonia

File name: F:\FLOW_4\0823999.RST
Date: August 23, 1999
Operator: NVW

Peak	Cup	Name	Type	Dil	Wt	Height	Calc. (mg/L)
1	2	Sync	SYNC	1	1	1167716	9.972436
2	0	Carryover	CO	1	1	5154	0.042551
3	0	Carryover	CO	1	1	880	0.006039
4	0	Baseline	RB	1	1	0	-0.001474
5	0	Baseline	RB	1	1	0	-0.001474
6	1	Cal 0	C	1	1	345	0.001474
7	2	Cal 1	C	1	1	1170943	10.000001
8	2	ICV	U	1	1	1170552	9.996662
9	1	ICB	U	1	1	-1096	-0.010835
10	3	LCS	U	1	1	617362	5.271652
11	4	10341 D20	U	1	1	175303	1.495859
12	5	10341 D28 H	U	1	1	6884	0.057326
13	6	10341 D42 H	U	1	1	2607	0.020789
14	7	10341 D35 T	U	1	1	41919	0.356573
15	8	10341 D35 H	U	1	1	949	0.006636
16	9	10341 D35 T	U	1	1	40792	0.346943
17	10	10342 D20	U	1	1	61739	0.525858
18	11	10342 D28 H	U	1	1	60732	0.517263
19	2	CCV	U	1	1	1164797	9.947505
20	1	CCB	U	1	1	-3375	-0.030305
21	0	Baseline	RB	1	1	0	-0.001474
22	12	10342 D42 H	U	1	1	7052	0.058760
23	13	10342 D42 T	U	1	1	440	0.002280
24	14	10342 D35 T	U	1	1	124524	1.062130
25	15	10342 D35 H	U	1	1	133622	1.139846
26	16	10343 D20	U	1	1	196133	1.673772
27	17	10343 D28 H	U	1	1	88095	0.750977
28	18	10343 D42 H	U	1	1	90531	0.771788

Peak	Cup	Flags
1	2	
2	0	
3	0	
4	0	BL
5	0	BL
6	1	
7	2	
8	2	
9	1	LO
10	3	
11	4	
12	5	
13	6	
14	7	
15	8	
16	9	
17	10	
18	11	
19	2	
20	1	LO
21	0	BL

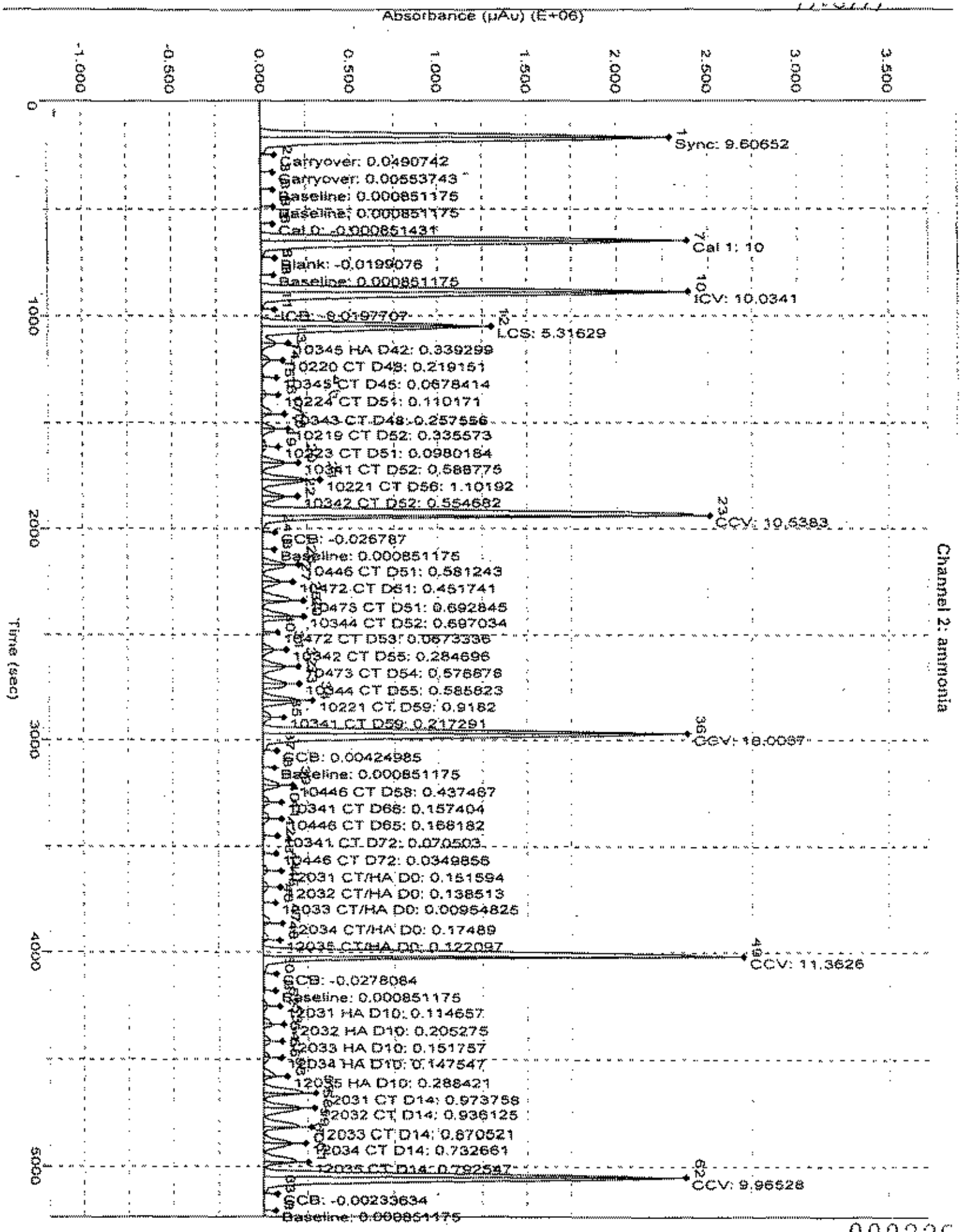

Absorbance (µAU) (E+06)
-0.300
-0.200
-0.100
0.000
0.100
0.200
0.300
0.400
0.500
0.600
0.700
0.800
0.900
1.000
1.100
1.200
1.300
1.400
1.500
Time (sec.)
0
500
1000
1500
2000
2500
3000
3500
4000
Channel 2: ammonia
Sync: 10.0324
Carryover: 0.0189788
Carryover: -0.00185677
Baseline: -0.00919208
Baseline: -0.00919208
Cal 0: 0.00919189
Cal 1: 10
CCV: 9.99325
ICB: 0.0532618
LCS: 5.08847
10219 D20 T: 0.4391
10219 D28 H: 0.201436
10219 D35 T: 0.835509
10219 D35 H: 0.186187
10219 D42 T: 0.545417
10219 D42 H: 0.161254
10220 D20 T: 2.54538
10220 D28 H: 0.0219743
CCV: 10.0294
CCB: -0.0167153
Baseline: -0.00919208
10220 D35 T: 0.118864
10220 D35 H: 0.147487
10220 D42 T: 0.0773225
10220 D42 H: 0.0769968
10221 D20 T: 1.14606
10221 D28 H: 0.0931342
10221 D35 T: 1.04009
10221 D35 H: 0.0701546
10221 D42 T: 0.912541
10221 D42 H: 0.0115706
CCV: 9.87364
CCB: -0.0124012
Baseline: -0.00919208
10223 D20 T: 0.686469
10223 D28 H: 0.109399
10223 D35 T: 0.888241
10223 D35 H: 0.266151
10223 D42 T: 0.706651
10223 D42 H: 0.190743
10224 D20 T: 0.899376
10224 D28 H: 0.00361117
10224 D35 T: 0.318275
10224 D35 H: 0.0964804
CCV: 9.76193
CCB: -0.0103607
BASELINE: -0.00919208
10224 D42 T: 0.10986
10224 D42 H: 0.00988486
CCV: 9.83979
CCB: -0.0093566
BASELINE: -0.00919208

Peak Table: ammonia

File name: F:\FLOW_4\082399F.RST
Date: August 23, 1999
Operator: NVW

Peak	Cup	Name	Type	Dil	Wt	Height	Calc. (mg/L)
1	2	Sync	SYNC	1	1	1266027	10.032393
2	0	Carryover	CO	1	1	3552	0.018979
3	0	Carryover	CO	1	1	925	-0.001857
B	0	Baseline	RB	1	1	0	-0.009192
B	0	Baseline	RB	1	1	0	-0.009192
6	1	Cal 0	C	1	1	2318	0.009192
7	2	Cal 1	C	1	1	1261943	10.000000
8	2	ICV	U	1	1	1261092	9.993252
9	1	ICB	U	1	1	7874	0.053262
10	3	LCS	U	1	1	642705	5.088472
11	4	10219 D20 T	U	1	1	56520	0.439100
12	5	10219 D28 H	U	1	1	26556	0.201436
13	6	10219 D35 T	U	1	1	106499	0.835509
14	7	10219 D35 H	U	1	1	22111	0.166187
15	8	10219 D42 T	U	1	1	44709	0.345417
16	9	10219 D42 H	U	1	1	21490	0.161254
17	10	10220 D20 T	U	1	1	322078	2.545392
18	11	10220 D28 H	U	1	1	3929	0.021974
19	2	CCV	U	1	1	1265652	10.029422
20	1	CCB	U	1	1	-949	-0.016715
B	0	Baseline	RB	1	1	0	-0.009192
22	12	10220 D35 T	U	1	1	16145	0.116864
23	13	10220 D35 H	U	1	1	19754	0.147487
24	14	10220 D42 T	U	1	1	10908	0.077322
25	15	10220 D42 H	U	1	1	10867	0.076997
26	16	10221 D20 T	U	1	1	145655	1.146084
27	17	10221 D28 H	U	1	1	12901	0.093134
28	18	10221 D35 T	U	1	1	132291	1.040087
29	19	10221 D35 H	U	1	1	10004	0.070155
30	20	10221 D42 T	U	1	1	116211	0.912541
31	21	10221 D42 H	U	1	1	2618	0.011571
32	2	CCV	U	1	1	1246012	9.873642
33	1	CCB	U	1	1	-405	-0.012401
B	0	Baseline	RB	1	1	0	-0.009192
35	22	10223 D20 T	U	1	1	87708	0.686469
36	23	10222 D28 H	U	1	1	14952	0.109399
37	24	10223 D35 T	U	1	1	113147	0.888241
38	25	10222 D35 H	U	1	1	34715	0.266151
39	26	10223 D42 T	U	1	1	90252	0.706651
40	27	10222 D42 H	U	1	1	25207	0.190743
41	28	10224 D20 T	U	1	1	114551	0.899376
42	29	10224 D28 H	U	1	1	1614	0.003611
43	30	10224 D35 T	U	1	1	41287	0.318275
44	31	10224 D35 H	U	1	1	13323	0.096480
45	2	CCV	U	1	1	1231928	9.761934
46	1	CCB	U	1	1	-147	-0.010361
B	0	BASELINE	RB	1	1	0	-0.009192
48	32	10224 D42 T	U	1	1	15010	0.109860
49	33	10224 D42 H	U	1	1	2405	0.009885
50	2	CCV	U	1	1	1241744	9.839792
51	1	CCB	U	1	1	-21	-0.009357
B	0	BASELINE	RB	1	1	0	-0.009192

Absorbance (µAu) (E+06)
-0.400
-0.200
0.000
0.200
0.400
0.600
0.800
1.000
1.200
1.400
1.600
Time (sec)
500
1000
1500
2000
2500
3000
Channel 2: ammonia
1 Sync: 10.007
2 Carryover: 0.0270002
3 Carryover: 0.0288093
4 Baseline: -0.00526584
5 Baseline: -0.00526584
6 Cal 0: 0.00526524
7 Cal 1: 10
8 CCV: 9.98502
9 CCB: 0.000605637
10 CCS: 5.2654
11 10342 D42 H: 0.0649813
12 10342 D42 T: 0.014888
13 10342 D35 T: 0.411329
14 10342 D35 H: 0.417139
15 10343 D20: 1.12243
16 10343 D28 H: 0.00457543
17 10343 D42 H: 0.00506318
18 10343 D42 T: 0.946962
19 10343 D35 T: 1.11133
20 10343 D35 H: 0.0804088
21 CCV: 10.0177
22 CCB: -0.0106394
23 Baseline: -0.00526584
24 10344 D20: 2.24172
25 10344 D28 H: 0.334302
26 10344 D42 H: 0.120462
27 10344 D42 T: 0.065208
28 10344 D35 T: 0.284476
29 10344 D35 H: 1.36608
30 10345 D20: 0.943668
31 10345 D28 H: -0.00526584
32 10345 D42 H: 0.677514
33 10345 D42 T: 0.572686
34 CCV: 10.08
35 CCB: 0.042589
36 BASELINE: -0.00526584
37 10345 D35 T: 0.073661
38 10345 D35 H: 0.345453
39 CCV: 9.99486
40 CCB: -0.0031774
41 BASELINE: -0.00526584


Absorbance (µAu) (E+06)
-1.000
-0.500
0.000
0.500
1.000
1.500
2.000
2.500
3.000
3.500
Time (sec)
0
1000
2000
3000
4000
5000
Channel 2: ammonia
1 Sync: 9.60652
2 Carryover: 0.0490742
3 Carryover: 0.00553743
4 Baseline: 0.000851175
5 Baseline: 0.000851175
6 Cal 0: -0.00085143
7 Cal 1: 10
8 Blank: -0.0199076
9 Baseline: 0.000851175
10 ICV: 10.0341
11 ICB: -0.0197707
12 LCS: 5.31629
13 10345 HA D42: 0.339299
14 10220 CT D48: 0.219151
15 10345 CT D45: 0.0678414
16 10224 CT D51: 0.110171
17 10343 CT D48: 0.257556
18 10219 CT D52: 0.335573
19 10223 CT D51: 0.0980184
20 10341 CT D52: 0.588775
21 10221 CT D56: 1.10192
22 10342 CT D52: 0.554682
23 CCV: 10.5383
24 ICB: -0.026787
25 Baseline: 0.000851175
26 10446 CT D51: 0.581243
27 10472 CT D61: 0.451741
28 10473 CT D51: 0.692845
29 10344 CT D52: 0.697034
30 10472 CT D53: 0.0573336
31 10342 CT D55: 0.284696
32 10473 CT D54: 0.576676
33 10344 CT D55: 0.585623
34 10221 CT D59: 0.9182
35 10341 CT D59: 0.217291
36 CCV: 18.0097
37 ICB: 0.00424985
38 Baseline: 0.000851175
39 10446 CT D58: 0.437467
40 10341 CT D66: 0.157404
41 10446 CT D65: 0.166182
42 10341 CT D72: 0.070503
43 10446 CT D72: 0.0349856
44 12031 CT/HA D0: 0.151594
45 12032 CT/HA D0: 0.138513
46 12033 CT/HA D0: 0.00954825
47 12034 CT/HA D0: 0.17489
48 12035 CT/HA D0: 0.122097
49 CCV: 11.3626
50 ICB: -0.0278084
51 Baseline: 0.000851175
52 12031 HA D10: 0.114657
53 12032 HA D10: 0.205275
54 12033 HA D10: 0.151757
55 12034 HA D10: 0.147547
56 12035 HA D10: 0.288421
57 12031 CT D14: 0.973758
58 12032 CT D14: 0.936125
59 12033 CT D14: 0.670521
60 12034 CT D14: 0.732661
61 12035 CT D14: 0.792587
62 CCV: 9.96528
63 ICB: -0.00233634
64 Baseline: 0.000851175

000229

Peak Table: ammonia

File name: C:\FLOW_4\092899C.RST
Date: September 28, 1999
Operator: NVW

Peak	Cup	Name	Type	Dil	Wt	Height	Calc. (mg/L)
1	5	Sync	SYNC	1	1	2227495	9.606523
2	0	Carryover	CO	1	1	11183	0.049074
3	0	Carryover	CO	1	1	1087	0.005537
B	0	Baseline	RB	1	1	0	0.000851
B	0	Baseline	RB	1	1	0	0.000851
6	1	Cal 0	C	1	1	-395	-0.000851
7	5	Cal 1	C	1	1	2318740	10.000000
8	0	Blank	U	1	1	-4814	-0.019908
B	0	Baseline	RB	1	1	0	0.000851
10	5	ICV	U	1	1	2326637	10.034057
11	1	ICB	U	1	1	-4782	-0.019771
12	6	LCS	U	1	1	1232616	5.316286
13	7	10345 HA D42	U	1	1	78484	0.339299
14	8	10220 CT D48	U	1	1	50622	0.219151
15	9	10345 CT D45	U	1	1	15535	0.067841
16	10	10224 CT D51	U	1	1	25351	0.110171
17	11	10343 CT D48	U	1	1	59528	0.257556
18	12	10219 CT D52	U	1	1	77620	0.335573
19	13	10223 CT D51	U	1	1	22532	0.098018
20	14	10341 CT D52	U	1	1	136336	0.588775
21	15	10221 CT D56	U	1	1	255331	1.101920
22	16	10342 CT D52	U	1	1	128430	0.554682
23	5	CCV	U	1	1	2443560	10.538265
24	1	CCB	U	1	1	-6409	-0.026787
B	0	Baseline	RB	1	1	0	0.000851
26	17	10446 CT D51	U	1	1	134589	0.581243
27	18	10472 CT D51	U	1	1	104559	0.451741
28	19	10473 CT D51	U	1	1	160469	0.692845
29	20	10344 CT D52	U	1	1	161440	0.697034
30	21	10472 CT D53	U	1	1	15417	0.067334
31	22	10342 CT D55	U	1	1	65822	0.284696
32	23	10473 CT D54	U	1	1	133577	0.576878
33	24	10344 CT D55	U	1	1	135651	0.585823
34	25	10221 CT D59	U	1	1	212728	0.918200
35	26	10341 CT D59	U	1	1	50191	0.217291
36	5	CCV	U	1	1	2319597	10.003698
37	1	CCB	U	1	1	788	0.004250
B	0	Baseline	RB	1	1	0	0.000851
39	27	10446 CT D58	U	1	1	101248	0.437467
40	28	10341 CT D66	U	1	1	36304	0.157404
41	29	10446 CT D65	U	1	1	38803	0.168182
42	30	10341 CT D72	U	1	1	16152	0.070503
43	31	10446 CT D72	U	1	1	7916	0.034986
44	32	12031 CT/HA D0	U	1	1	34956	0.151594
45	33	12032 CT/HA D0	U	1	1	31923	0.138513
46	34	12033 CT/HA D0	U	1	1	2017	0.009548
47	35	12034 CT/HA D0	U	1	1	40358	0.174890
48	36	12035 CT/HA D0	U	1	1	28116	0.122097
49	5	CCV	U	1	1	2634711	11.362569
50	1	CCB	U	1	1	-6646	-0.027808
B	0	Baseline	RB	1	1	0	0.000851
52	37	12031 HA D10	U	1	1	26391	0.114657
53	38	12032 HA D10	U	1	1	47405	0.205275
54	39	12033 HA D10	U	1	1	34994	0.151757

Peak	Cup	Name	Type	Dil	Wt	Height	Calc. (mg/L)
55	40	12034 HA D10	U	1	1	34018	0.147547
56	41	12035 HA D10	U	1	1	66686	0.288421
57	42	12031 CT D14	U	1	1	225611	0.973758
58	43	12032 CT D14	U	1	1	216884	0.936125
59	44	12033 CT D14	U	1	1	201671	0.870521
60	45	12034 CT D14	U	1	1	169702	0.732661
61	46	12035 CT D14	U	1	1	183589	0.792547
62	5	CCV	U	1	1	2310688	9.965277
63	1	CCB	U	1	1	-739	-0.002336
B	0	Baseline	RB	1	1	0	0.000851

Peak	Cup	Flags
1	5	
2	0	
3	0	
B	0	BL
B	0	BL
6	1	LO
7	5	
8	0	LO
B	0	BL
10	5	
11	1	LO
12	6	
13	7	
14	8	
15	9	
16	10	
17	11	
18	12	
19	13	
20	14	
21	15	
22	16	
23	5	
24	1	LO
B	0	BL
26	17	
27	18	
28	19	
29	20	
30	21	
31	22	
32	23	
33	24	
34	25	
35	26	
36	5	
37	1	
B	0	BL
39	27	
40	28	
41	29	
42	30	
43	31	
44	32	

Sediment Characterization

Client: Menzie-Cura & Assoc.	Project: 99026	BTR: 3152 / 3153

Date sediments distributed to test chambers (100 mL homogenized sediment):

- *H. azteca* acute test: 6/20/99
- *C. tentans* acute test: 6/20/99
- *H. azteca* chronic test: 7/1/99 } entire sample used with exception of aliquot reserved
- *C. tentans* chronic test: 7/1/99 } for C. tentans auxillary male treatments.

7/11/99 - Sediments into beakers on Day 9 for aux. males.
7/12/99 - Larvae added to aux. male replicates (4) from egg case deposit 7/9 (Aquatec) 7/12/99

Sample Number	porew pH	porew H2S	porew Amm	Sediment Visual Characterization
10219	215 mL 6.7	extracted	6/21/99 1.7	black mud, watery, Chironomids (several) present removed
				black, watery mud, few Chironomids removed
10220	218 mL 7.1	extracted	6/21/99 1.86	
10221	240 mL 7.3	extracted	6/21/99 13.5	brownish, black watery mud few Chironomids removed.
~~10222~~				
10224	125 mL 6.7	extracted	3.62	very black, watery mud. 125 mL extracted 6/21/99
	Pore water centrifuged 6/21/99 - 250 g / centrifuge 15 min			
Number ~~10225~~ NOT USED	15 m, 7640 RPM.			
~~10226~~ Number not used				
~~10227~~ Number not used				
10222 / 23 LCS	/	/	/	EPA artificial control sediment (77% med. and fine sand; 17% kaolinite clay; 5% 0.5 mm-sieved peat; 1% $CaCO_3$). Stored dry, then hydrated prior to addition to test chambers.

S = Sample collected / preserved.

Extract porewater, measure and record pH, decant and preserve sulfide and ammonia samples.

Entered by: _____ Date: 6/20 7/1/99

Sediments distributed to beakers 6/19/99 13:00 JJG

Reviewer: _____ Date: _____

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

hasurvwt.doc

H. azteca added to beakers 6/20/99 15:30 JJG

000227

Sediment Characterization

Client: Menzie-Cura & Assoc.	Project: 99026	BTR: 3169

Date sediments distributed to test chambers (100 mL homogenized sediment):

- *H. azteca* acute test: > 6/23/99
- *C. tentans* acute test:
- *H. azteca* chronic test: > 7/15/99 For Auxiliary replac on 7/15/99
- *C. tentans* chronic test:

Sample Number	porew pH	porew H2S	porew Amm	Sediment Visual Characterization
10341	6.4			Brown/black liquid/mud. Some vegetation
10342	6.6			Sloppy black ~~brown~~ sediment
10343	6.4			Sloppy black sediment / Detritus
10344	6.8			Very liquid black fine mud.
				Sediments distributed to rest
				beakers, overlying water added
				6/23/99 1800
10345 / 46 LCS	/	/	/	EPA artificial control sediment (77% med. and fine sand; 17% kaolinite clay; 5% 0.5 mm-sieved peat; 1% CaCO3). Stored dry, then hydrated prior to addition to test chambers.

Extract porewater, measure and record pH, decant and preserve sulfide and ammonia samples.

Entered by: [signature] Date: 6/23/99

Reviewer: [signature] Date: 8/19/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Sediment Characterization

Client: Menzie-Cura & Assoc.	Project: 99026	BTR: 3189 / 3196

Date sediments distributed to test chambers (100 mL homogenized sediment):

- *H. azteca* acute test: 6/25/99
- *C. tentans* acute test: 6/25/99
- *H. azteca* chronic test: 7/6/99 (Samples 10446, 10472, 10473)
- *C. tentans* chronic test: 7/6/99 (Samples 10446, 10472, 10473)

Sample Number	porew pH	porew H2S	porew Amm	Sediment Visual Characterization
10446	6.6			Soft black mud
10447	7.1			Black, very liquid, fine
10472	6.8			Black, viscous mud.
10473	6.8			Black, very liquid, fine
10474	7.6			Black, very liquid, fine, odorous
	Pore water black/dark brn			
10475	7.6			Black, soupy, very fine sediment
	pore water black/dark brn			
10448 / 449 LCS				EPA artificial control sediment (77% med. and fine sand; 17% kaolinite clay; 5% 0.5 mm-sieved peat; 1% $CaCO_3$). Stored dry, then hydrated prior to addition to test chambers.

Extract porewater, measure and record pH, decant and preserve sulfide and ammonia samples.

Entered by: [illegible] Date: 6/25/99

Reviewer: [illegible] Date: 8/12/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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Preparation of Formulated Control Sediment
for
Freshwater Sediment Toxicity Tests

Procedure based on EPA/600/R-94/024

Batch No. 6/18/99 Preparation Date: 6/18/99 Prepared by: [illegible]

Ingredient	Amount (g)	Percent composition
Fine sand	1848 ✓	
Medium sand	924 ✓	77
Kaolinite clay	612 ✓	17
Blended and 0.~~3~~ 5 mm sieved Canadian sphagnum peat	180 ✓	5
$CaCO_3$	36 ✓	1
Total	3500	100

Store well-mixed and dry in a sealed Rubbermaid box. Label by batch number. Store copy of this documentation in project file. Store original in Sed/Water preparation notebook.

Hydrate to a cohesive sediment consistency before use.

Hydrated/placed in refrig.
Assigned sample #s
10222 - H [illegible]
10223 - C [illegible]

Preparation of Formulated Control Sediment
for
Freshwater Sediment Toxicity Tests

Procedure based on EPA/600/R-94/024

Batch No. 6/25/99 Preparation Date: 6/25/00 Prepared by: SG

Ingredient	Amount (g)		Percent composition
Fine sand	1848	X 2 = 3696	
Medium sand	924	1848	77
Kaolinite clay	612	1224	17
Blended and 0.~~3~~ 5 mm sieved Canadian sphagnum peat	180	360	5
$CaCO_3$	36	72	1
Total	3500		100

Store well-mixed and dry in a sealed Rubbermaid box. Label by batch number. Store copy of this documentation in project file. Store original in Sed/Water preparation notebook.

Hydrate to a cohesive sediment consistency before use.

DAILY CHECKLIST FOR AUTOMATED DELIVERY SEDIMENT TOXICITY TESTS

Week of June 27, 1999

ACTIVITY / DAY	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Prior to noon fill reservoirs (1L)			✓	✓	✓	✓	✓
Noon delivery cycle							
• splitter boxes filling?			✓	✓	✓	✓	✓
• syringes filling?			✓	✓	✓	✓	✓
• needles flowing?			✓	✓	✓	✓	✓
• beaker screens clear, flowing?			✓	✓	✓	✓	✓
• drainage to waste ok?			✓	✓	✓	✓	✓
• empty waste buckets?			✓	✓	✓	✓	✓
Test monitoring							
• test temperature ok?			✓	✓	✓	✓	✓
• D.O. ok?			✓	✓	✓	✓	✓
• check for floating organisms			✓	✓	✓	✓	✓
• feeding completed?			✓	✓	✓	✓	✓
Additional activities							
Prior to midnight fill reservoirs (1L)		✓	✓	✓	✓	✓	✓
Check sediment water supply		✓	✓	✓	✓	✓	✓
Corrective Action / Comments							
Initials/Date		JJG 6/28	JJG 6/29	JJG 6/30	SY 7/1	JJG 7/2	JJG 7/3

Procedure: All operating systems listed above must be checked on a daily basis when sediment toxicity tests are in progress. Corrective action must be taken whenever appropriate. Document corrective action on this form. If project-specific documentation is required, write a brief description (on Project Documentation form) and include with the test data package.

Comments:

Reviewer [illegible] Date 12/4/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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DAILY CHECKLIST FOR AUTOMATED DELIVERY SEDIMENT TOXICITY TESTS

Week of July 4, 1999

ACTIVITY / DAY	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Prior to noon fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Noon delivery cycle							
• splitter boxes filling?	✓	✓	✓	✓	✓	✓	✓
• syringes filling?	✓	✓	✓	✓	✓	✓	✓
• needles flowing?	✓	✓	✓	✓	✓	✓	✓
• beaker screens clear, flowing?	✓	✓	✓	✓	✓	✓	✓
• drainage to waste ok?	✓	✓	✓	✓	✓	✓	✓
• empty waste buckets?	✓	✓	✓	✓			✓
Test monitoring							
• test temperature ok?	✓	✓	✓	✓	✓	✓	✓
• D.O. ok?	✓	✓	✓	✓	✓	✓	✓
• check for floating organisms	✓	✓	✓	✓	✓	✓	✓
• feeding completed?	✓	✓	✓	✓	✓	✓	✓
Additional activities							
Prior to midnight fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Check sediment water supply	✓	✓	✓	✓	✓	✓	✓
Corrective Action / Comments							
Initials/Date	JCG 7/4/99	JCG 7/5/99	JCG 7/6/99	[illegible] 7/7/99	JCG 7/8/99 CC	CC 7/9/99	[illegible] 7/10/99

Procedure: All operating systems listed above must be checked on a daily basis when sediment toxicity tests are in progress. Corrective action must be taken whenever appropriate. Document corrective action on this form. If project-specific documentation is required, write a brief description (on Project Documentation form) and include with the test data package.

Comments:

Reviewer [illegible] Date 12/9/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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DAILY CHECKLIST FOR AUTOMATED DELIVERY SEDIMENT TOXICITY TESTS

Week of July 11, 1999

ACTIVITY / DAY	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Prior to noon fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Noon delivery cycle							
• splitter boxes filling?	✓	✓	✓	✓	✓	✓	✓
• syringes filling?	✓	✓	✓	✓	✓	✓	✓
• needles flowing?	✓	✓	✓	✓	✓	✓	✓
• beaker screens clear, flowing?	✓	✓	✓	✓	✓	✓	✓
• drainage to waste ok?	✓	✓	✓	✓	✓	✓	✓
• empty waste buckets?		✓	✓	✓	✓	✓	✓
Test monitoring							
• test temperature ok?	✓	✓	✓	✓	✓	✓	✓
• D.O. ok?	✓	✓	✓	✓	✓	✓	✓
• check for floating organisms	✓	✓	✓	✓	✓	✓	✓
• feeding completed?	✓	✓	✓	✓	✓	✓	✓
Additional activities							
Prior to midnight fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Check sediment water supply	✓	✓	✓	✓	✓	✓	✓
Corrective Action / Comments							
Initials/Date	7/11 CC	7/12 JJG	7/13 JG/CC	7/14 CC JJG	7/15 JJG	7/16 JJG	7/17 JJG

Procedure: All operating systems listed above must be checked on a daily basis when sediment toxicity tests are in progress. Corrective action must be taken whenever appropriate. Document corrective action on this form. If project-specific documentation is required, write a brief description (on Project Documentation form) and include with the test data package.

Comments:

Reviewer [signature] Date 12/9/99
Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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DAILY CHECKLIST FOR AUTOMATED DELIVERY SEDIMENT TOXICITY TESTS

Week of July 18, 1999

ACTIVITY / DAY	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Prior to noon fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Noon delivery cycle							
• splitter boxes filling?	✓	✓	✓	✓	✓	✓	✓
• syringes filling?	✓	✓	✓	✓	✓	✓	✓
• needles flowing?	✓	✓	✓	✓	✓	✓	✓
• beaker screens clear, flowing?	✓	✓	✓	✓	✓	✓ ①	✓
• drainage to waste ok?	✓	✓	✓	✓	✓	✓	✓
• empty waste buckets?	✓	✓	✓	✓	✓	✓	✓
Test monitoring							
• test temperature ok?	✓	slightly low	✓	✓	✓	✓	✓
• D.O. ok?	✓	✓	✓	✓	✓	✓	✓
• check for floating organisms	✓	✓	✓	✓	✓	✓	✓
• feeding completed?	✓	✓	✓	✓	✓	✓	✓
Additional activities							
Prior to midnight fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Check sediment water supply	✓	✓	✓	✓	✓	✓	✓
Corrective Action / Comments							
Initials/Date	J 7/19/99	JJG 7/19/99	JJG 7/20/99	JJG CMC 7/21/1999	JJG 7/22/99	JJG 7/23/99	JJG 7/24

Procedure: All operating systems listed above must be checked on a daily basis when sediment toxicity tests are in progress. Corrective action must be taken whenever appropriate. Document corrective action on this form. If project-specific documentation is required, write a brief description (on Project Documentation form) and include with the test data package.

Comments:
① Screw clogged

Reviewer [signature] Date 12/9/99
Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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DAILY CHECKLIST FOR AUTOMATED DELIVERY SEDIMENT TOXICITY TESTS

Week of July 25, 1999

ACTIVITY / DAY	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Prior to noon fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Noon delivery cycle							
• splitter boxes filling?	✓	✓	✓	✓	✓	✓	✓
• syringes filling?	✓	✓	✓	✓	✓	✓	✓
• needles flowing?	✓	✓	✓	✓	✓	✓	✓
• beaker screens clear, flowing?	✓	✓	✓	✓	✓	✓	✓
• drainage to waste ok?	✓	✓	✓	✓	✓	✓	✓
• empty waste buckets?	✓	✓	✓	✓		✓	✓
Test monitoring							
• test temperature ok?	✓	✓	✓	✓	✓	✓	✓
• D.O. ok?	✓	✓	✓	✓	✓	✓	✓
• check for floating organisms	✓	✓	✓	✓	✓	✓	✓
• feeding completed?	✓	✓	✓	✓	✓	✓	✓
Additional activities							
Prior to midnight fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Check sediment water supply	✓	✓	✓	✓	✓	✓	✓
Corrective Action / Comments							
Initials/Date	JJG 7/25	JJG 7/26	JJG 7/27	JJG 7/28	JJG 7/29	JJG 7/30	JJG 7/31

Procedure: All operating systems listed above must be checked on a daily basis when sediment toxicity tests are in progress. Corrective action must be taken whenever appropriate. Document corrective action on this form. If project-specific documentation is required, write a brief description (on Project Documentation form) and include with the test data package.

Comments:

Reviewer [illegible] Date 12/9/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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DAILY CHECKLIST FOR AUTOMATED DELIVERY SEDIMENT TOXICITY TESTS

Week of AUGUST 1, 1999

ACTIVITY / DAY	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Prior to noon fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Noon delivery cycle							
• splitter boxes filling?	✓	✓	✓	✓	✓	✓	✓
• syringes filling?	✓	✓	✓	✓	✓	✓	✓
• needles flowing?	✓	✓	✓	✓	✓	✓	✓
• beaker screens clear, flowing?	✓	✓	✓	✓	✓	✓	✓
• drainage to waste ok?	✓	✓	✓	✓	✓	✓	✓
• empty waste buckets?	✓	✓	✓	✓	✓	✓	✓
Test monitoring							
• test temperature ok?	✓	slightly lower	✓	✓	✓	✓	1.5 degrees below [illegible]
• D.O. ok?	✓	✓	✓	✓	—	✓	[illegible]
• check for floating organisms	✓	✓	✓	✓	✓	✓	✓
• feeding completed?	✓	✓	✓	✓	✓	✓	H.A. - yes C.T. - fish primer shipped today
Additional activities							
Prior to midnight fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Check sediment water supply	✓	✓	✓	✓	✓	✓	✓
Corrective Action / Comments	Adjusted heater to increase test temperature → JJG 8/2						
Initials/Date	8/1 JJG	8/2 JJG	JJG 8/3	JJG 8/4	[illegible] 8/5	JJG 8/6	[illegible] 8/7

Procedure: All operating systems listed above must be checked on a daily basis when sediment toxicity tests are in progress. Corrective action must be taken whenever appropriate. Document corrective action on this form. If project-specific documentation is required, write a brief description (on Project Documentation form) and include with the test data package.

Comments:

Reviewer [illegible] Date 12/9/99
Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

DAILY CHECKLIST FOR AUTOMATED DELIVERY SEDIMENT TOXICITY TESTS

Week of AUGUST 8, 1999

ACTIVITY / DAY	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Prior to noon fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓

Noon delivery cycle

• splitter boxes filling?	✓	✓	✓	✓	✓	✓	✓
• syringes filling?	✓	✓	✓	✓	✓	✓	✓
• needles flowing?	✓	✓	✓	✓	✓	✓	✓
• beaker screens clear, flowing?	✓	✓	✓	✓	✓	✓	✓
• drainage to waste ok?	✓	✓	✓	✓	✓	✓	✓
• empty waste buckets?	✓	✓	✓	✓	✓	✓	✓

Test monitoring

• test temperature ok?	✓	✓	temp's low	✓	✓	✓	✓
• D.O. ok?	✓	✓	✓	✓	—	✓	✓
• check for floating organisms	✓	✓	✓	✓	✓	✓	✓
• feeding completed?	✓	✓	✓	Suspend feeding fed H.a.	✓	✓	✓

Additional activities

Prior to midnight fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Check sediment water supply	✓	✓	✓	✓	✓	✓	✓

Corrective Action / Comments			Adjusted room temperature.				
Initials/Date	8/8	8/9 JJG	8/10 JJG	8/11 JJG	8/12 JJG	8/13 JJG	8/14 JJG

Procedure: All operating systems listed above must be checked on a daily basis when sediment toxicity tests are in progress. Corrective action must be taken whenever appropriate. Document corrective action on this form. If project-specific documentation is required, write a brief description (on Project Documentation form) and include with the test data package.

Comments:

Reviewer [illegible] Date 12/5/99
Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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DAILY CHECKLIST FOR AUTOMATED DELIVERY SEDIMENT TOXICITY TESTS

Week of AUGUST 15, 1999

ACTIVITY / DAY	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Prior to noon fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Noon delivery cycle							
• splitter boxes filling?	✓	✓	✓	✓	✓	✓	✓
• syringes filling?	✓	✓	✓	✓	✓	✓	✓
• needles flowing?	✓	✓	✓	✓	✓	✓	✓
• beaker screens clear, flowing?	✓	✓	✓	✓	✓	✓	✓
• drainage to waste ok?	✓	✓	✓	✓	✓	✓	✓
• empty waste buckets?	✓	✓	✓	✓	✓	—	✓
Test monitoring							
• test temperature ok?	slightly low	low ✓	✓	✓	✓	✓	✓
• D.O. ok?	—	✓	✓	✓	—	✓	—
• check for floating organisms	✓	✓	✓	✓	✓	✓	✓
• feeding completed?	✓	✓	✓	✓	✓	✓	✓
Additional activities							
Prior to midnight fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Check sediment water supply	✓	✓	✓	✓	✓	✓	✓
Corrective Action / Comments	adjusted room temperature						
Initials/Date	JJG 8/15	JJG 8/15	JJG 8/18	[illegible] 8/18	JJG 8/19	JJG 8/20	JJG 8/21

Procedure: All operating systems listed above must be checked on a daily basis when sediment toxicity tests are in progress. Corrective action must be taken whenever appropriate. Document corrective action on this form. If project-specific documentation is required, write a brief description (on Project Documentation form) and include with the test data package.

Comments:

Reviewer: [signature] Date: 12/9/99
Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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DAILY CHECKLIST FOR AUTOMATED DELIVERY SEDIMENT TOXICITY TESTS

Week of AUGUST 22, 1999

ACTIVITY / DAY	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Prior to noon fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Noon delivery cycle							
• splitter boxes filling?	✓	✓	✓	✓	✓	✓	✓
• syringes filling?	✓	✓	✓	✓	✓	✓	✓
• needles flowing?	✓	✓	✓	✓	✓	✓	✓
• beaker screens clear, flowing?	✓	✓	✓	✓	✓	✓	✓
• drainage to waste ok?	✓	✓	✓	✓	✓	✓	✓
• empty waste buckets?	✓				✓		✓
Test monitoring							
• test temperature ok?	✓	✓	✓	✓	✓	✓	✓
• D.O. ok?	—	✓	—	✓	—	✓	—
• check for floating organisms	✓	✓	✓	✓	✓	✓	✓
• feeding completed?	✓	✓	✓	✓	✓	✓	✓
Additional activities							
Prior to midnight fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Check sediment water supply	✓	✓	✓	✓	✓	✓	✓
Corrective Action / Comments							
Initials/Date	JJG 8/22	JJG 8/23	JJG 8/24	JJG 8/25	JJG 8/26	JJG 8/27	JJG 8/28

Procedure: All operating systems listed above must be checked on a daily basis when sediment toxicity tests are in progress. Corrective action must be taken whenever appropriate. Document corrective action on this form. If project-specific documentation is required, write a brief description (on Project Documentation form) and include with the test data package.

Comments:

Reviewer [signature] Date 12/9/99
Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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DAILY CHECKLIST FOR AUTOMATED DELIVERY SEDIMENT TOXICITY TESTS

Week of AUGUST 29, 1999

ACTIVITY / DAY	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Prior to noon fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Noon delivery cycle							
• splitter boxes filling?	✓	✓	✓	✓	✓	✓	✓
• syringes filling?	✓	✓	✓	✓	✓	✓	✓
• needles flowing?	✓	✓	✓	✓	✓	✓	✓
• beaker screens clear, flowing?	✓	✓	✓	✓	✓	✓	✓
• drainage to waste ok?	✓	✓	✓	✓	✓	✓	✓
• empty waste buckets?	✓	✓	✓	✓	✓	✓	✓
Test monitoring							
• test temperature ok?	✓	✓	✓	✓	✓	✓	✓
• D.O. ok?	—	✓	—	✓	—	✓	—
• check for floating organisms	✓	✓	✓	✓	✓	✓	✓
• feeding completed?	✓	✓	✓	✓	Skipped	✓	✓
Additional activities							
Prior to midnight fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Check sediment water supply	✓	✓	✓	✓	✓	✓	✓
Corrective Action / Comments					Skipped feeding		
Initials/Date	JJG 8/29	JJG 8/30	JM 8/31	JM 9/1	JM 9/2	JM 9/3	JJG 9/4

Procedure: All operating systems listed above must be checked on a daily basis when sediment toxicity tests are in progress. Corrective action must be taken whenever appropriate. Document corrective action on this form. If project-specific documentation is required, write a brief description (on Project Documentation form) and include with the test data package.

Comments:

Reviewer [signature] Date 12/9/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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DAILY CHECKLIST FOR AUTOMATED DELIVERY SEDIMENT TOXICITY TESTS

Week of September 5, 1999

ACTIVITY / DAY	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Prior to noon fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓

Noon delivery cycle

• splitter boxes filling?	✓	✓	✓	✓	✓	✓	✓
• syringes filling?	✓	✓	✓	✓	✓	✓	✓
• needles flowing?	✓	✓	✓	✓	✓	✓	✓
• beaker screens clear, flowing?	✓	✓	✓	✓	✓	✓	✓
• drainage to waste ok?	✓	✓	✓	✓	✓	✓	✓
• empty waste buckets?	✓	✓	—	OK	✓	✓	✓

Test monitoring

• test temperature ok?	✓	✓	✓	✓	✓	✓	✓
• D.O. ok?	—	slightly low	—	low ②	—	OK	—
• check for floating organisms	✓	✓	✓	✓	✓	✓	✓
• feeding completed?	✓	✓	✓	skipped	skipped	✓	skipped

Additional activities

Prior to midnight fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Check sediment water supply	✓	✓	✓	✓	✓	✓	✓

Corrective Action / Comments				No [illegible]			
Initials/Date	JJG 9/5	JJG 9/6	JJG 9/7	TM 9/8	JJG 9/9	TM 9/10	JJG 9/11

Procedure: All operating systems listed above must be checked on a daily basis when sediment toxicity tests are in progress. Corrective action must be taken whenever appropriate. Document corrective action on this form. If project-specific documentation is required, write a brief description (on Project Documentation form) and include with the test data package.

Comments: ① DO's low; an extra manual renewal done (10:00) 9/6/99 JJG

② DO's low suspended feeding

Reviewer [illegible] Date 12/9/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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DAILY CHECKLIST FOR AUTOMATED DELIVERY SEDIMENT TOXICITY TESTS

Week of September 12, 1999

ACTIVITY / DAY	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Prior to noon fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Noon delivery cycle							
• splitter boxes filling?	✓	✓	✓	✓	✓	✓	✓
• syringes filling?	✓	✓	✓	✓	✓	✓	✓
• needles flowing?	✓	✓	✓	✓	✓	✓	✓
• beaker screens clear, flowing?	✓	✓	✓	✓	✓	✓	✓
• drainage to waste ok?	✓	✓	✓	✓	✓	✓	✓
• empty waste buckets?	✓	✓	✓	✓			
Test monitoring							
• test temperature ok?	✓	✓	✓	✓	✓	✓	✓
• D.O. ok?	—	✓	✓	*① ✓	✓	✓	✓
• check for floating organisms	✓	✓	✓	✓	✓	✓	✓
• feeding completed?	✓	✓	✓	✓	✓	✓	✓
Additional activities							
Prior to midnight fill reservoirs (1L)	✓	✓	✓	✓	✓	✓	✓
Check sediment water supply	✓	✓	✓	✓	✓	✓	
Corrective Action / Comments							
Initials/Date	JJG 9/12	TJM 9/13	TJM 9/14	TJM 9/15	TJM 9/16	TJ 9/17	TJM 9/18

Procedure: All operating systems listed above must be checked on a daily basis when sediment toxicity tests are in progress. Corrective action must be taken whenever appropriate. Document corrective action on this form. If project-specific documentation is required, write a brief description (on Project Documentation form) and include with the test data package.

Comments: *① Menzie Cura 341 446 low

Reviewer: J Date: 12/9/99

Laboratory: Aquatec Biological Sciences, South Burlington, Vermont

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MC H.2.
Chronic
NY 14D

Manual Renewal for *C. tentans* / *H. azteca*

Date (1999)	Time of A.M. Renewal	Time of P.M. Renewal	Initials
6/26	09:00	1900	JJG, [illegible]
6/27	08:00	1900	JJG, [illegible]
6/28	08:00	1900	JJG, [illegible]
6/29	09:00	1900	[illegible]
6/30	0730 11:30	1930	JJG [illegible]
7/1	0855	1830	[illegible]
7/2	08:30 19:00 [illegible]	18:30	JJG JJG
7/3	08:30	19:00	JJG JJG
7/4	08:45	18:35	JJG JJG
7/5	08:45	19:00	JJG JJG
7/6	08:00	20:00	JJG JJG
7/7	08:00	1900	JJG [illegible]
7/8	09:00	18:45	JJG JJG
7/9	08:00	19:00	[illegible]
7/10	900	1900	[illegible]
7/11	9:00	1845	CC [illegible]
7/12	8:00	1930	CC [illegible]
7/13	08:30	1900	JJG [illegible]
7/14	09:00	1900	[illegible]
7/15	9:00	19:00	CC JJG
7/16	9:00	1900	CC SAT
7/17	09:00	08:30 PM	JJG JJG
7/18	09:00	1900	J CCM
7/19	08:30	19:30	[illegible] JJG
7/20	08:00	19:00	[illegible] SAT
7/21	8:30	19:00	CC JJG
7/22	07:30	18:50	JJG SAT
7/23	08:30	19:30	JJG JJG
7/24	08:00	1900	JJG SAT
7/25	09:00	1915	JJG [illegible]
7/26	08:30	19:30	JJG JJG
7/28	08:00	19:00	[illegible] JJG
7/29	08:30	1900	JJG SAT
7/30	08:30	19:00	JJG SAT
7/31	09:00	19:00	JJG JJG

Manual Renewal for *C. tentans* / *H. azteca*

Date (1999)	Time of A.M. Renewal	Time of P.M. Renewal	Initials
8/1	09:00	19:00	JJG
8/2	08:30	19:00	JJG [illegible]
8/3	07:30	19:00	JJG [illegible]
8/4	09:30	19:30	[illegible] JJG
8/5	08:55	19:00	[illegible] [illegible]
8/6	08:30		JJG
8/7	09:30	2030	[illegible] [illegible]
8/8	09:45	1915	[illegible] [illegible]
8/9	0830	19:00	[illegible] [illegible]
8/10	08:30	20:00	JJG [illegible]
8/11	0930	19:00	[illegible]
8/12	0930	19:00	[illegible] [illegible]
8/13	08:00	22:00	JJG [illegible]
8/14	09:30	19:00	JJG [illegible]
8/15	09:30	19:00	JJG JJG
8/16	08:30	19:00	JM JJG
8/17	08:30	20:00	JM [illegible]
8/18	08:30		JM
8/19			
8/20			
8/21			
8/22			
8/23			
8/24			
8/25			
8/26			
8/27			
8/28			
8/29			
8/30			
8/31			

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List of events where data for time to mortality of emergent flies was not generated

SAMPLE	REPLICATE	PARAMETER	DAY	EVENT
10219	A	MS	34	NR
10219	C	MS	34	ESC
10219	H	FS	29	NR
10220	D	UE	27	NR
10220	F	MS	27	ESC
10220	G	MS	24	ESC
10221	H	MS	23	ESC
10223	A	FS	30	NR
10223	A	MS	30	NR
10223	F	FS	27	NR
10223	G	MS	24	ESC
10224	A	MS	25	ESC
10224	E	MS	31	NR
10224	E	MS	33	ESC
10224	H	MS	26	ESC
10446	D	FS	31	INJ
10449	C	FS	33	INJ
10449	H	UE	30	NR
10472	A	FS	44	INJ
10472	E	MS	22	ESC
10472	E	MS	30	ESC
10472	E	MS	36	ESC
10341	C	FS	31	ESC
10341	E	MS	21	ESC
10342	C	MS	30	NR
10343	A	MS	27	ESC
10343	A	UE	32	NC
10343	F	FS	29	NR
10346	B	MS	24	NR
10346	F	MS	34	ESC
10473	D	FS	25	NR
10473	H	FS	30	NR

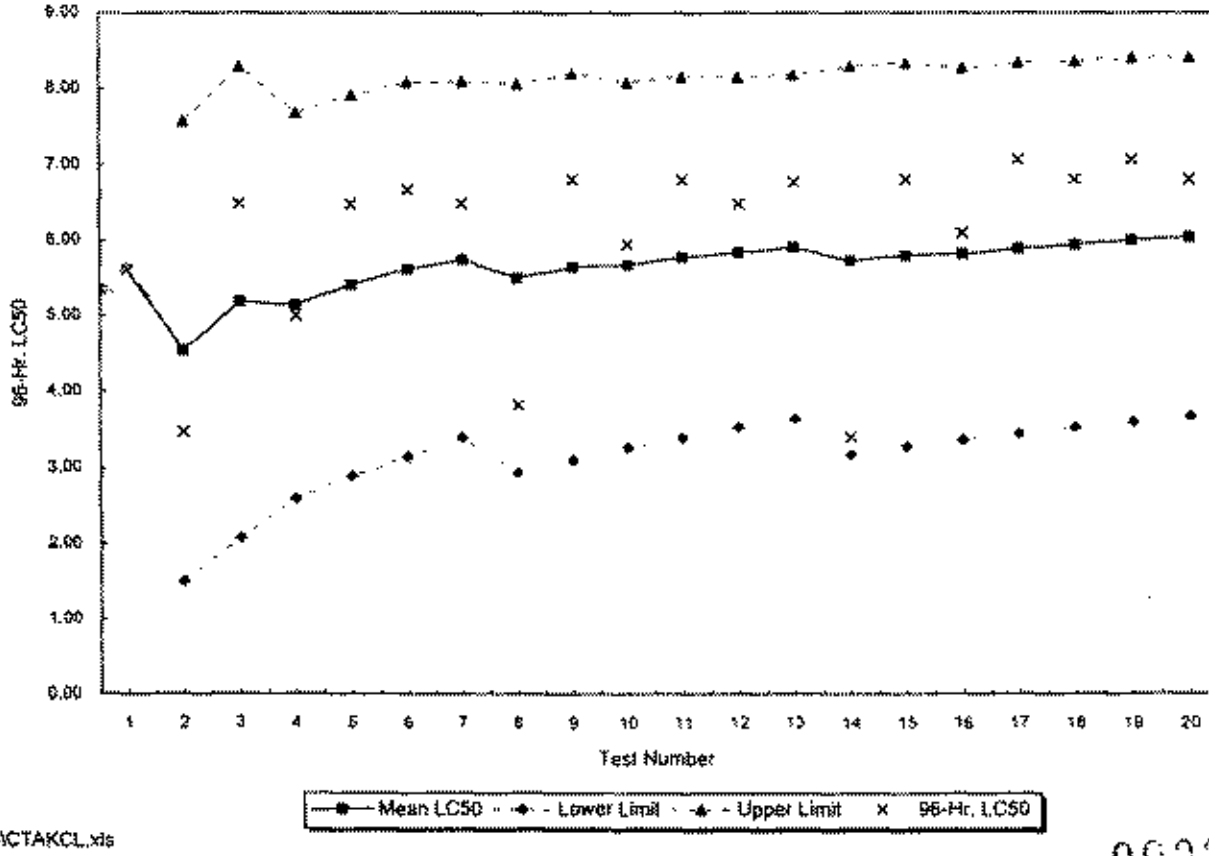
MS= Male Survival
FS= Female Survival
UE= Unhatched Eggs
INJ= Injured
NC= Not Counted
NR= Not Recorded
ESC= Escaped

APPENDIX D

CLICK TO CONTINUE

Reference Toxicant Control Chart
Chironomus tentans
in Potassium chloride (g/L)

Test Number	Test Date	Organism Age (Days)	96-Hr. LC50	Mean LC50	Lower Limit	Upper Limit	Organism Source
1	10/31/97	9	5.612	5.61			Aquatec Biological Sciences
2	11/02/97	9	3.466	4.54	1.50	7.57	Aquatec Biological Sciences
3	11/09/97	10	6.484	5.19	2.08	8.29	Aquatec Biological Sciences
4	11/10/97	9	5.000	5.14	2.60	7.68	Aquatec Biological Sciences
5	08/23/98	11	6.484	5.41	2.90	7.92	Aquatec Biological Sciences
6	09/15/98	9	6.674	5.62	3.15	8.09	Aquatec Biological Sciences
7	10/23/98	10	6.484	5.74	3.40	8.09	Aquatec Biological Sciences
8	11/10/98	9	3.827	5.50	2.94	8.07	Aquatec Biological Sciences
9	06/20/99	9	6.804	5.65	3.10	8.20	Aquatec Biological Sciences
10	06/24/99	11 and 12	5.946	5.68	3.27	8.09	Aquatec Biological Sciences
11	06/26/99	9 and 11	6.804	5.78	3.40	8.17	Aquatec Biological Sciences
12	07/15/99	13	6.484	5.84	3.53	8.15	Env. Consulting & Testing
13	07/16/99	10	6.771	5.91	3.64	8.18	Aquatec Biological Sciences
14	07/16/99	9	3.400	5.73	3.17	8.29	Aquatec Biological Sciences
15	07/16/99	8	6.804	5.80	3.27	8.33	Env. Consulting & Testing
16	09/13/99	10	6.095	5.82	3.37	8.27	Aquatec Biological Sciences
17	10/07/99	11	7.071	5.89	3.45	8.34	Aquatec Biological Sciences
18	10/11/99	10	6.804	5.95	3.53	8.36	Aquatec Biological Sciences
19	10/27/99	8	7.071	6.00	3.60	8.40	Aquatec Biological Sciences
20	11/13/99	12	6.804	6.04	3.68	8.41	Aquatec Biological Sciences



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