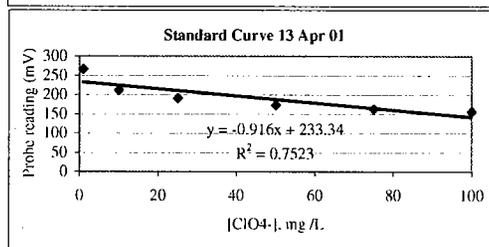
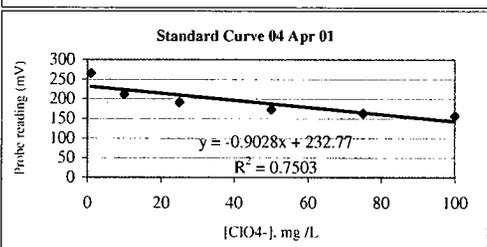
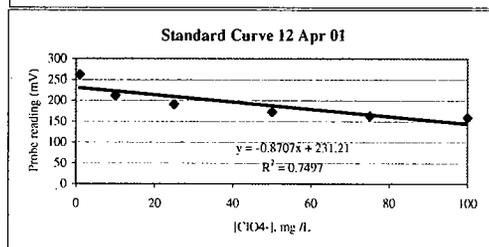
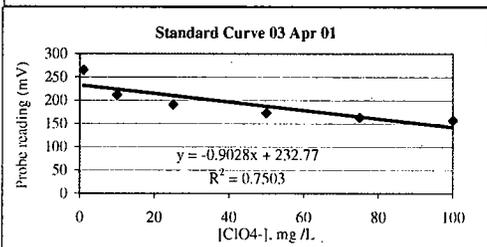
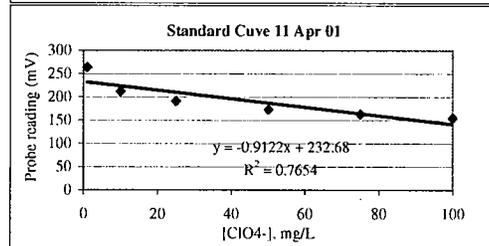
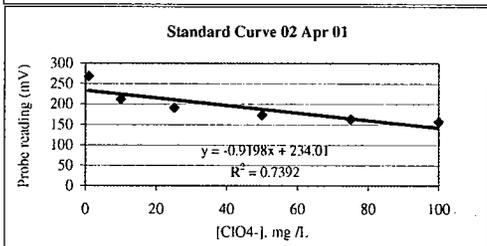
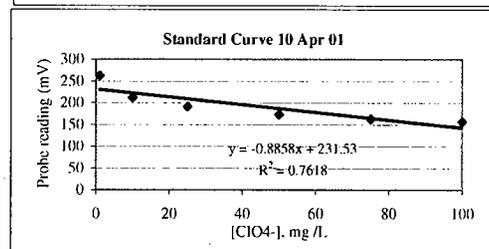
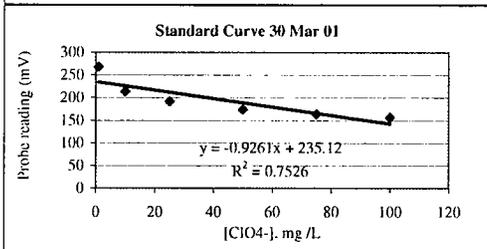
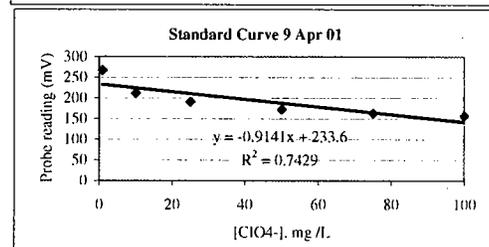
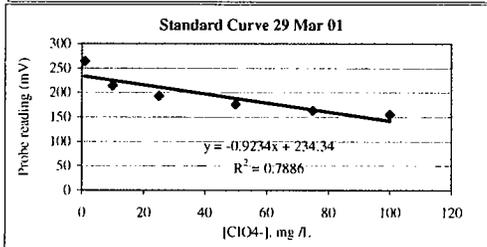
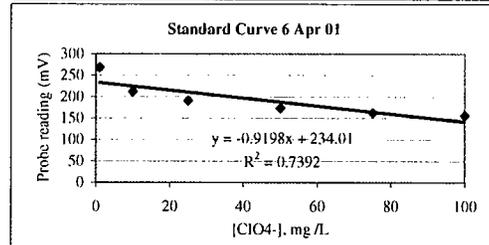
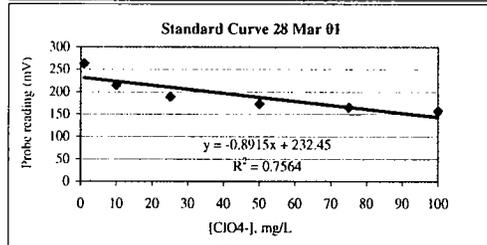
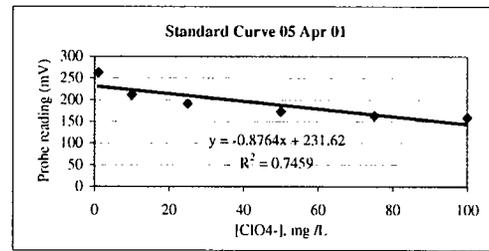
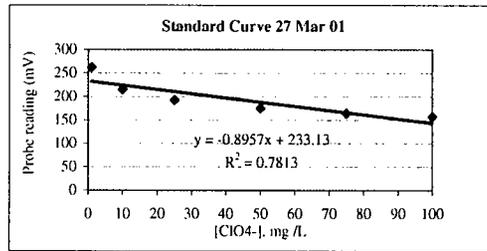


APPENDIX B

PHASE I PARAMETERS AND ClO_4^-
PROBE CALIBRATION CURVES

PHASE I START-UP
ClO₄⁻ STANDARD CALIBRATION CURVES



**PHASE I OPERATING DATA
JET PROPULSION LABORATORY**

Date	Time	Parameter	R1	R2	R3	Notes (pH/Temp/Flow Adjustments)
3/26/2001	12:25pm	Temp (°C)	17.5	17.7	17.6	Turned on thermostat @11am
	3:40pm	Temp (°C)	28.2	28.2	28.2	Turned down thermostat setting
3/27/2001	7:30am	Temp (°C)	35.4	35.1	34.2	Turned down thermostat setting
	8:50am	pH	7.61	7.5	7.55	
	9:20-45am					Added ice to inocula tanks
	11:30am	Pressure Drop (psi)	14	26	26	
	12:25pm	Temp (°C)	30.1	29.9	30.1	
		pH	7.53-7.65	7.46	7.67	
		conductivity (dS/m)	2.32	1.57	2.32	
	3:00pm	Temp (°C)	32.7-33.6			
	Pressure Drop (psi)	28 psi				
3/28/2001	7:45am	Temp (°C)	23.1	23	24.5	
		Pressure Drop (psi)	28	29	28	
	-	Temp (°C)	21.8	21.6	22.8	
		pH	7.39	7.04	7.3	
		conductivity (dS/m)	2.05	1.46	2.3	
	1:45pm	Temp (°C)	26.2	27.5	28.7	
3/29/2001		Pressure Drop (psi)	10	20	25	
	8:00am	Temp (°C)	25.5	25.8	27.2	
		Pressure Drop (psi)	18	24	27	
	8:35-40am	Temp (°C)	23.4	23.4	24.2	
		pH	7.55	7.14	7.57	
		conductivity (dS/m)	1.93	1.54	2.17	
	2:15pm					added 23.25g NaClO ₄ to R1
	2:25pm					added 23.25g NaClO ₄ to R3
2:45pm	Temp	31.1	31.1	32.2	system temperatures (gauge)	
4:45pm	Temp (°C)	32.2	32.2	33.3		
4:45pm	Pressure Drop (psi)	18	15	26		
3/30/2001	7:50	Pressure Drop (psi)	18	15	26	
		Temp (°C)	26.6	26.6	27.2	
	8:10	Temp (°C)	23.2	23.7	24	
		pH	7.47	7.05	7.39	
		conductivity (dS/m)	2.07	1.55	2.31	
	12:50pm	Temp°F	31.1	31.1	32.2	
4/2/2001		Pressure Drop (psi)	28	16	28	increased pressure drop through R2 by closing valve; now 20
	7:30am	Temp (°C)	18.2	19.0	19.2	
		pH	8.3	6.92	8.4	
		conductivity (dS/m)	1.91	1.52	2.19	
4/3/2001	3:30pm	Temp (°C)	21.1	22.2	21.9	
	8:45am	Temp (°C)	18.8	20	20	
	8:50am	Temp (°C)	17	17.5	17.3	
		pH	8.41	4.96	8.38	
		conductivity (dS/m)	1.87	1.55	2.21	
	10:15am					Heater turned on set at 26.6°C
	11:15am	Temp (°C)		20.4		
11:45am	Temp (°C)	20.7	20.7	20.9		
5:15pm	Temp (°C)		24			

**PHASE I OPERATING DATA
JET PROPULSION LABORATORY**

		pH		6.3		
4/4/2001	8:15am					Heater turned on set at 26.6°C
	8:37am	Temp (°C)	16.9	17.1	17	
		pH	8.14	5.78	8.18	
		conductivity (dS/m)	1.95	1.69	2.23	
	4:40pm					turn off heater
4/5/2001	8:15am	Temp (°C)	18.9	18.9	18.9	Heater turned on set at 26.6°C
	8:32-36am	Temp (°C)	17.2	17.7	17.2	
		pH	7.58	5.52	7.7	
		conductivity (dS/m)	2.14	1.84	2.46	
	11:45am	Temp (°C)		23.1		
		pH		5.7		
	2:40pm	Temp (°C)		26.1		
		pH		6.67		cut heat for all three reactors
4/6/2001	8:42-50am	Temp (°C)	14.9	15	16.3	
		pH	8.19	6.28	8.27	added HCl to R1, R3 to bring pH down and NaOH to R2
		conductivity (dS/m)	2.22	1.87	2.54	
	10:20am	pH	7.88	6.81	8.07	
	11:30am	pH	7.69	7.18	7.85	
	12:50am	pH	7.63	7.37	7.93	
4/9/2001	11:15am	Temp (°C)	15.1	15.2	16.1	
		pH	8.78	6.82	8.64	need to adjust pH in all three reactors
		conductivity (dS/m)	2.3	1.98	2.51	
	1:30pm	pH	8.4		8.4	
	3:50pm	pH	8.29		8.32	
	4:00pm					added 4mL 6M HCl to R1, R3 to bring pH down
4/10/2001	8:15am	Temp (°C)	11.3		12.6	
		pH	8.18		8.23	
		conductivity (dS/m)	1.75		2.58	
	11:50am	Temp (°C)	17.3		18.3	
		pH	7.83		8.02-.05	
	1:45am	Temp (°C)	20.3		21.6	
		pH	7.78		7.96-.97	
	3:40pm	Temp (°C)	23.5		24	
	pH	7.7		7.92		
	3:50pm					added HCl to R1 (20 mL), R3 (30mL)
	3:55pm					turn off heat trace
4/11/2001	8:37-40am	Temp (°C)	17.1		18.3	
		pH	8.34		8.47	
		conductivity (dS/m)	2.11		3.03	
	10:50am	Temp (°C)	17.9		18.3	
		pH	8.09		8.3	
	3:15pm	Temp (°C)	17.5		18.6	
	pH	7.98		8.13		
		conductivity (dS/m)	1.65		2.23	
4/12/2001	10:10am					turn on heat trace for R1, R3 - set at 26.6°C
	10:18-20am	Temp (°C)	16.8		17.9	
		pH	8.38		8.46	
		conductivity (dS/m)	1.78		2.42	
	1:00pm	Temp (°C)	22.7		23.5	
		pH	8.10-12		8.19	
	3:15pm	Temp (°C)	25		27.6	
		pH	8.05		7.96	
	8:35am	Temp (°C)	20		21.1	
	9:03-07am	Temp (°C)	17.6		18.9	

**PHASE I OPERATING DATA
JET PROPULSION LABORATORY**

4/13/2001		pH	7.92		8.07	
		conductivity (dS/m)	1.96		2.57	
	9:10am					added 30mL 6M HCl to R1, R3 to bring pH down
	11:04-07am	Temp (°C)	21.8		22.7	
4/18/2001		pH	7.49-.53		7.65	
	10:35am					turn on aerator in EQ tank #1 and heater in T1
	3:00pm					temp in T1 is 25°C
	3:40pm					GW flowing into T1 temp is 20.4°C
4/19/2001	3:55pm					turn off heat for T1
	8:35am					temp in T1 is 22.4°C; turn on heater for T1- set at 26.6°C
	10:30am					collected GW sample - temp is 20.3°C; T1 temp. is 23°C
	2:50pm					Determined that heat could be left on overnight
4/20/2001	3:30pm					temp. in T1 is 22.3°C
	8:55am					temp in T1 is 27.1°C
	9:30am					temp in T1 is 27.7°C; consider turning off heat
	1:10pm	Temp (°C)	25.1			temp in T1 is 25.4°C
4/23/2001	1:45pm					temp in T1 is 25.9°C shut off heat
	2:00pm	Pressure Drop (psi)	18		20	Opened throttle valves on inlets to R1/R3
	8:30am					temp in T1 20.0°C
4/25/2001	4:00pm					temp in T1 20.7°C
	9:45am					temp in T1 is 21.3°C
4/26/2001	11:30am					turned on aerator in EQ tank
	9:15am					re-start system with R3 operating only
	11:20am	Pressure Drop (psi)			12	

Notes:

R1 - perchlorate

R2 - compost/food waste

R3 - JPL isolates

psi - pounds per square inch

dS/m - decisiemens per meter

T1 is influent Equalization Tank (see Figure 1)

mL - milliliter:

M - molar

HCl - hydrochloric acid

NaClO₄ - sodium perchlorate

APPENDIX C

PHASE I ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY RECORDS FOR GROUNDWATER SAMPLES



MONTGOMERY WATSON LABORATORIES

a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Foster Wheeler Environ. Inc.
1940 E Deere St, Ste 200

Santa Ana , CA 92705

Attention: Mark Lossi
Fax: 949 756-7560

DEB Debbie Frank
Project Manager

Report#: 78636
TREAT

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 5 page[s].

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Laboratory
Hits Report
#78636

Foster Wheeler Environ. Inc.
Mark Lossi
1940 E Deere St, Ste 200
Santa Ana, CA 92705

Samples Received
26-apr-2001 16:48:36

Analyzed	Sample#	Sample ID	Result	UNITS	MDL
	2104260260	PBR-4-I-1			
04/26/01		Nitrate as NO3 by IC	18	mg/l	.440
04/26/01		Nitrate-N by IC	4	mg/l	.100
04/26/01		Perchlorate	410	ug/l	40.000
	2104260261	PBR-4-I-7			
04/26/01		Acetate	36	mg/l	1.000
04/27/01		Total Organic Carbon	11.2	mg/l	.500
	2104260262	PBR-4-E-10			
04/26/01		Nitrate as NO3 by IC	11	mg/l	.880
04/26/01		Nitrate-N by IC	2.4	mg/l	.200
04/26/01		Acetate	22	mg/l	1.000
04/26/01		Perchlorate	240	ug/l	20.000
04/27/01		Total Organic Carbon	7.23	mg/l	.500

SUMMARY OF POSITIVE DATA ONLY.

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Laboratory
 Data Report
 #78636

Foster Wheeler Environ. Inc.
 Mark Lossi
 1940 E Deere St, Ste 200
 Santa Ana , CA 92705

Samples Received
 04/26/01

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
PBR-4-I-1 (2104260260) Sampled on 04/26/01 15:55								
	04/26/01 00:00	140320	(CADHS/EPA314)	Perchlorate	410	ug/l	40	10
Nitrate by IC as NO3 & N								
	04/26/01 19:57	140345	(ML/EPA 300.0)	Nitrate-N by IC	4	mg/l	0.10	1
	04/26/01 19:57	140345	(ML/EPA 300.0)	Nitrate as NO3 by IC	18	mg/l	0.44	1
PBR-4-I-7 (2104260261) Sampled on 04/26/01 16:00								
	04/26/01 00:00	140319	(ML/EPA 300 MOD)	Acetate	36	mg/l	1.0	1
	04/27/01 00:00	140323	(ML/SM 5310C)	Total Organic Carbon	11.2	mg/l	0.50	1
PBR-4-E-10 (2104260262) Sampled on 04/26/01 16:10								
	04/26/01 00:00	140319	(ML/EPA 300 MOD)	Acetate	22	mg/l	1.0	1
	04/26/01 00:00	140320	(CADHS/EPA314)	Perchlorate	240	ug/l	20	5
	04/27/01 00:00	140323	(ML/SM 5310C)	Total Organic Carbon	7.23	mg/l	0.50	1
Nitrate by IC as NO3 & N								
	04/26/01 20:07	140348	(ML/EPA 300.0)	Nitrate-N by IC	2.4	mg/l	0.20	2
	04/26/01 20:07	140348	(ML/EPA 300.0)	Nitrate as NO3 by IC	11	mg/l	0.88	2

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Laboratory
QC Summary
#78636

Foster Wheeler Environ. Inc.

QC Ref #140319 - Acetate

Analysis Date: 04/26/2001

2104260261 PBR-4-I-7
2104260262 PBR-4-E-10

QC Ref #140320 - Perchlorate

Analysis Date: 04/26/2001

2104260260 PBR-4-I-1
2104260262 PBR-4-E-10

QC Ref #140323 - Total Organic Carbon

Analysis Date: 04/27/2001

2104260261 PBR-4-I-7
2104260262 PBR-4-E-10

QC Ref #140345 - Nitrate by IC as NO3 & N

Analysis Date: 04/26/2001

2104260260 PBR-4-I-1

QC Ref #140348 - Nitrate by IC as NO3 & N

Analysis Date: 04/26/2001

2104260262 PBR-4-E-10



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Laboratory
 QC Report
 #78636

Foster Wheeler Environ. Inc.

QC Ref #140319 Acetate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Acetate	5	5.09	101.8	(80.00 - 120.00)	
LCS2	Acetate	5	5.39	107.8	(80.00 - 120.00)	5.7

QC Ref #140320 Perchlorate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04260260		(0.00 - 0.00)	
LCS1	Perchlorate	25.0	23.4	93.6	(85.00 - 115.00)	
LCS2	Perchlorate	25.0	24.8	99.2	(85.00 - 115.00)	5.8
MBLK	Perchlorate	ND				
MS	Perchlorate	25.0	23.1	92.4	(80.00 - 120.00)	
MSD	Perchlorate	25.0	25.4	101.6	(80.00 - 120.00)	9.5

QC Ref #140323 Total Organic Carbon

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
AASPKSMP	Spiked sample	Lab # 21	04260152		(0.00 - 0.00)	
LCS1	Total Organic Carbon	0.5	0.45	90.0	(75.00 - 125.00)	
LCS2	Total Organic Carbon	4.5	4.29	95.3	(75.00 - 125.00)	
MBLK	Total Organic Carbon	ND				
MS	Total Organic Carbon	8.0	7.75	96.9	(90.00 - 110.00)	
MSD	Total Organic Carbon	8.0	7.73	96.6	(90.00 - 110.00)	0.26

QC Ref #140345 Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04260075		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.57	102.8	(90.00 - 110.00)	0.78
MS	Nitrate-N	2.5	2.67	106.8	(90.00 - 110.00)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
 Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates
 are advisory only, unless otherwise specified in the method.



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Laboratory
 QC Report
 #78636

Foster Wheeler Environ. Inc.
 (continued)

MSD	Nitrate-N	2.5	2.66	106.4	(90.00 - 110.00)	0.38
MBLK	Nitrate as NO3 by IC	ND				

QC Ref #140348 Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04260075		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.57	102.8	(90.00 - 110.00)	0.78
MS	Nitrate-N	2.5	2.67	106.8	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.66	106.4	(90.00 - 110.00)	0.38
MBLK	Nitrate as NO3 by IC	ND				

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
 Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates
 are advisory only, unless otherwise specified in the method.



FOSTER WHEELER ENVIRONMENTAL CORPORATION

CHAIN OF CUSTODY FORM REQUEST FOR ANALYSIS

PAGE _____ OF _____

PROJECT		OFS NO.		HAZARD IDENTIFICATION		TIME REQUIRED	
JPL PBR				Non Hazard <input checked="" type="checkbox"/>	Reactive <input type="checkbox"/>	NORMAL <input type="checkbox"/>	DAYS
PROJECT ADDRESS				Flammable <input type="checkbox"/>	Toxic <input type="checkbox"/>	RUSH <input type="checkbox"/>	DAYS
4800 Oak Grove Dr., Pasadena CA				Skin Irritant <input type="checkbox"/>	Infectious <input type="checkbox"/>		
SAMPLER (Name)		SAMPLER (Signature)		ANALYSES REQUIRED			
David Tietje		David Tietje					
LABORATORY		LABORATORY					
Montgomery Watson Labs		Montgomery Watson Labs					
REPORTS TO BE SENT TO		REPORTS TO BE SENT TO					
Mark Losl @ 999-756-7516 (Ph) , -7560 (Fax)		Mark Losl @ 999-756-7516 (Ph) , -7560 (Fax)					
SAMPLE NUMBER	TIME COLLECTED	DATE COLLECTED	NUMBER OF CONTAINERS	CONTAINER SIZE(S)	SAMPLE MATERIAL		OTHER (Describe)
					WATER	SOIL	
PBR-4-I-1	15:55	4/26/01	2	2 x 125 mL	X		
PBR-4-I-7	16:00	4/26/01	2	40 mL, 125 mL	X		
PBR-4-E-10	16:10	4/26/01	4	40 mL, 3 x 125 mL	X		
David Tietje 4/26/01							
LABORATORY INSTRUCTIONS/COMMENTS							
SAMPLING COMMENTS							

THE INFORMATION IN THIS SECTION WILL NOT BE AVAILABLE TO THE LABORATORY

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	DATE
David Tietje	4/26/01	David Tietje	4/26/01
COMPANY	TIME	COMPANY	TIME
FWENT	16:40	FWENT	16:40



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Laboratory Report

for

Foster Wheeler Environ. Inc.
1940 E Deere St, Ste 200

Santa Ana , CA 92705

Attention: Mark Lossi
Fax: 949 756-7560

DEB Debbie Frank
Project Manager

Report#: 78557
TREAT

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 5 page[s].



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Laboratory
Hits Report
#78557

Foster Wheeler Environ. Inc.
Mark Lossi
1940 E Deere St, Ste 200
Santa Ana , CA 92705

Samples Received
25-apr-2001 16:51:13

Analyzed	Sample#	Sample ID	Result	UNITS	MDL
	2104250282	PBR-3-I-1			
04/25/01		Nitrate as NO3 by IC	15	mg/l	.440
04/25/01		Nitrate-N by IC	3.5	mg/l	.100
04/25/01		Perchlorate	420	ug/l	40.000
	2104250283	PBR-3-I-7			
04/27/01		Total Organic Carbon	15.1	mg/l	.500
	2104250284	PBR-3-E-10			
04/25/01		Nitrate as NO3 by IC	9.2	mg/l	.880
04/25/01		Nitrate-N by IC	2.1	mg/l	.200
04/25/01		Perchlorate	200	ug/l	40.000
04/27/01		Total Organic Carbon	9.54	mg/l	.500

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Laboratory
 Data Report
 #78557

Foster Wheeler Environ. Inc.
 Mark Lossi
 1940 E Deere St, Ste 200
 Santa Ana , CA 92705

Samples Received
 04/25/01

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
PBR-3-I-1 (2104250282) Sampled on 04/24/01 16:00								
	04/25/01 00:00	140081	(CADHS/EPA314)	Perchlorate	420	ug/l	40	10
Nitrate by IC as NO3 & N								
	04/25/01 17:09	140333	(ML/EPA 300.0)	Nitrate-N by IC	3.5	mg/l	0.10	1
	04/25/01 17:09	140333	(ML/EPA 300.0)	Nitrate as NO3 by IC	15	mg/l	0.44	1
PBR-3-I-7 (2104250283) Sampled on 04/24/01 16:05								
	04/26/01 00:00	140319	(ML/EPA 300 MOD)	Acetate	ND	mg/l	1.0	1
	04/27/01 00:00	140246	(ML/SM 5310C)	Total Organic Carbon	15.1	mg/l	0.50	1
PBR-3-E-10 (2104250284) Sampled on 04/24/01 16:10								
	04/26/01 00:00	140319	(ML/EPA 300 MOD)	Acetate	ND	mg/l	1.0	1
	04/25/01 00:00	140081	(CADHS/EPA314)	Perchlorate	200	ug/l	40	10
	04/27/01 00:00	140246	(ML/SM 5310C)	Total Organic Carbon	9.54	mg/l	0.50	1
Nitrate by IC as NO3 & N								
	04/25/01 17:20	140334	(ML/EPA 300.0)	Nitrate-N by IC	2.1	mg/l	0.20	2
	04/25/01 17:20	140334	(ML/EPA 300.0)	Nitrate as NO3 by IC	9.2	mg/l	0.88	2

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Laboratory
QC Summary
#78557

Foster Wheeler Environ. Inc.

QC Ref #140081 - Perchlorate

Analysis Date: 04/25/2001

2104250282 PBR-3-I-1
2104250284 PBR-3-E-10

QC Ref #140246 - Total Organic Carbon

Analysis Date: 04/27/2001

2104250283 PBR-3-I-7
2104250284 PBR-3-E-10

QC Ref #140319 - Acetate

Analysis Date: 04/26/2001

2104250283 PBR-3-I-7
2104250284 PBR-3-E-10

QC Ref #140333 - Nitrate by IC as NO3 & N

Analysis Date: 04/25/2001

2104250282 PBR-3-I-1

QC Ref #140334 - Nitrate by IC as NO3 & N

Analysis Date: 04/25/2001

2104250284 PBR-3-E-10



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Laboratory
 QC Report
 #78557

Foster Wheeler Environ. Inc.

QC Ref #140081 Perchlorate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04230025		(0.00 - 0.00)	
LCS1	Perchlorate	25.0	24.9	99.6	(85.00 - 115.00)	
LCS2	Perchlorate	25.0	25.1	100.4	(85.00 - 115.00)	0.80
MBLK	Perchlorate	ND				
MS	Perchlorate	25.0	26.6	106.4	(80.00 - 120.00)	
MSD	Perchlorate	25.0	26.0	104.0	(80.00 - 120.00)	2.3

QC Ref #140246 Total Organic Carbon

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
AASPKSMP	Spiked sample	Lab # 21	04260035		(0.00 - 0.00)	
LCS1	Total Organic Carbon	0.5	0.49	98.0	(75.00 - 125.00)	
LCS2	Total Organic Carbon	4.5	4.59	102.0	(75.00 - 125.00)	
MBLK	Total Organic Carbon	ND				
MS	Total Organic Carbon	4.0	4.07	101.8	(90.00 - 110.00)	
MSD	Total Organic Carbon	4.0	4.03	100.8	(90.00 - 110.00)	0.99

QC Ref #140319 Acetate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Acetate	5	5.09	101.8	(80.00 - 120.00)	
LCS2	Acetate	5	5.39	107.8	(80.00 - 120.00)	5.7

QC Ref #140333 Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04250125		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.58	103.2	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.58	103.2	(90.00 - 110.00)	0.00
MS	Nitrate-N	2.5	2.75	<u>110.0</u>	(90.00 - 110.00)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
 Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates
 are advisory only, unless otherwise specified in the method.



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Laboratory
QC Report
#78557

Foster Wheeler Environ. Inc.
(continued)

MSD	Nitrate-N	2.5	2.75	<u>110.0</u>	(90.00 - 110.00) 0.00
MBLK	Nitrate as NO3 by IC		ND		

QC Ref #140334 Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04250125		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.58	103.2	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.58	103.2	(90.00 - 110.00) 0.00	
MS	Nitrate-N	2.5	2.75	<u>110.0</u>	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.75	<u>110.0</u>	(90.00 - 110.00) 0.00	
MBLK	Nitrate as NO3 by IC		ND			

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates
are advisory only, unless otherwise specified in the method.



FOSTER WHEELER ENVIRONMENTAL CORPORATION

CHAIN OF CUSTODY FORM REQUEST FOR ANALYSIS

PAGE OF

PROJECT: JPL PBR O/S NO. _____

PROJECT ADDRESS: 4800 Oak Grove Ave. Pasadena CA

SAMPLER (Name): David Tietje SAMPLER (Signature): [Signature]

LABORATORY: Montgomery Watson Labs

REPORTS TO BE SENT TO: Mark Losl, (999) 756-7516 (ph); (999) 756-7560 (fax)

SAMPLE NUMBER	TIME COLLECTED	DATE COLLECTED	NUMBER OF CONTAINERS	CONTAINER SIZE(S)	SAMPLE MATERIAL		ANALYSES REQUIRED	HAZARD IDENTIFICATION	TIME REQUIRED
					WATER	SOIL			
PBR-3-I-1	16:00	4/24/01	2	2 x 125 mL	X		<input checked="" type="checkbox"/> Carb <input checked="" type="checkbox"/> NO ₃ <input checked="" type="checkbox"/> TOC <input type="checkbox"/> Carbox	Normal <input type="checkbox"/> DAYS Rush <input type="checkbox"/> DAYS	
PBR-3-I-7	16:05	4/24/01	2	40 mL, 125 mL	X		<input checked="" type="checkbox"/> Carb <input checked="" type="checkbox"/> NO ₃ <input checked="" type="checkbox"/> TOC <input type="checkbox"/> Carbox	Normal <input type="checkbox"/> DAYS Rush <input type="checkbox"/> DAYS	
PBR-3-E-10	16:10	4/24/01	4	4 x 125 mL	X		<input checked="" type="checkbox"/> Carb <input checked="" type="checkbox"/> NO ₃ <input checked="" type="checkbox"/> TOC <input type="checkbox"/> Carbox	Normal <input type="checkbox"/> DAYS Rush <input type="checkbox"/> DAYS	

LABORATORY INSTRUCTIONS/COMMENTS: E-10 Carbox - substituted (25 mL bottle w/ HCL preservative (for transfer @ laboratory))

RECEIVED BY (Signature): [Signature] DATE: 4/24/01 TIME: 16:45

RELINQUISHED BY (Signature): [Signature] DATE: 4/25/01 TIME: 16:45

COMPANY: FWENC COMPANY: MW Lab

SAMPLING COMMENTS: _____

THE INFORMATION IN THIS SECTION WILL NOT BE AVAILABLE TO THE LABORATORY



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Laboratory Report

for

Foster Wheeler Environ. Inc.
1940 E Deere St, Ste 200

Santa Ana , CA 92705

Attention: Mark Lossi
Fax: 949 756-7560

DEB Debbie Frank
Project Manager

Report#: 78435
TREAT

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 5 page[s].

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Laboratory
Hits Report
#78435

Foster Wheeler Environ. Inc.
Mark Lossi
1940 E Deere St, Ste 200
Santa Ana , CA 92705

Samples Received
24-apr-2001 12:46:03

Analyzed	Sample#	Sample ID	Result	UNITS	MDL
	2104240234	PBR-2-I-1			
04/24/01		Nitrate as NO3 by IC	20	mg/l	.440
04/24/01		Nitrate-N by IC	4.5	mg/l	.100
04/25/01		Perchlorate	410	ug/l	40.000
	2104240235	PBR-2-I-5			
04/25/01		Acetate	69	mg/l	5.000
04/25/01		Total Organic Carbon	22.4	mg/l	2.500
	2104240236	PBR-2-I-7			
04/25/01		Acetate	240	mg/l	10.000
04/25/01		Total Organic Carbon	76.3	mg/l	5.000
	2104240237	PBR-2-E-8			
04/24/01		Nitrate as NO3 by IC	6.6	mg/l	.880
04/24/01		Nitrate-N by IC	1.5	mg/l	.200
04/25/01		Perchlorate	160	ug/l	40.000
04/25/01		Total Organic Carbon	21.1	mg/l	5.000
	2104240238	PBR-2-E-10			
04/24/01		Nitrate as NO3 by IC	6.2	mg/l	.880
04/24/01		Nitrate-N by IC	1.4	mg/l	.200
04/25/01		Perchlorate	110	ug/l	40.000
04/25/01		Total Organic Carbon	60.8	mg/l	5.000

SUMMARY OF POSITIVE DATA ONLY.

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Laboratory
 Data Report
 #78435

Foster Wheeler Environ. Inc.
 Mark Lossi
 1940 E Deere St, Ste 200
 Santa Ana , CA 92705

Samples Received
 04/24/01

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
PBR-2-I-1 (2104240234) Sampled on 04/24/01 08:00								
	04/25/01 00:00	140081	(CADHS/EPA314)	Perchlorate	410	ug/l	40	10
Nitrate by IC as NO3 & N								
	04/24/01 16:18	140061	(ML/EPA 300.0)	Nitrate-N by IC	4.5	mg/l	0.10	1
	04/24/01 16:18	140061	(ML/EPA 300.0)	Nitrate as NO3 by IC	20	mg/l	0.44	1
PBR-2-I-5 (2104240235) Sampled on 04/24/01 08:00								
	04/25/01 00:00	139979	(ML/EPA 300 MOD)	Acetate	69	mg/l	5.0	10
	04/25/01 00:00	140076	(ML/SM 5310C)	Total Organic Carbon	22.4	mg/l	2.5	5
PBR-2-I-7 (2104240236) Sampled on 04/24/01 08:00								
	04/25/01 00:00	139979	(ML/EPA 300 MOD)	Acetate	240	mg/l	10	20
	04/25/01 00:00	140076	(ML/SM 5310C)	Total Organic Carbon	76.3	mg/l	5.0	10
PBR-2-E-8 (2104240237) Sampled on 04/24/01 08:00								
	04/25/01 00:00	140081	(CADHS/EPA314)	Perchlorate	160	ug/l	40	10
	04/25/01 00:00	140076	(ML/SM 5310C)	Total Organic Carbon	21.1	mg/l	5.0	10
Nitrate by IC as NO3 & N								
	04/24/01 16:06	140060	(ML/EPA 300.0)	Nitrate-N by IC	1.5	mg/l	0.20	2
	04/24/01 16:06	140060	(ML/EPA 300.0)	Nitrate as NO3 by IC	6.6	mg/l	0.88	2
PBR-2-E-10 (2104240238) Sampled on 04/24/01 08:00								
	04/25/01 00:00	140081	(CADHS/EPA314)	Perchlorate	110	ug/l	40	10
	04/25/01 00:00	140076	(ML/SM 5310C)	Total Organic Carbon	60.8	mg/l	5.0	10
Nitrate by IC as NO3 & N								
	04/24/01 15:56	140058	(ML/EPA 300.0)	Nitrate-N by IC	1.4	mg/l	0.20	2
	04/24/01 15:56	140058	(ML/EPA 300.0)	Nitrate as NO3 by IC	6.2	mg/l	0.88	2



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Laboratory
QC Summary
#78435

Foster Wheeler Environ. Inc.

QC Ref #139979 - Acetate

Analysis Date: 04/25/2001

2104240235 PBR-2-I-5
2104240236 PBR-2-I-7

QC Ref #140058 - Nitrate by IC as NO3 & N

Analysis Date: 04/24/2001

2104240238 PBR-2-E-10

QC Ref #140060 - Nitrate by IC as NO3 & N

Analysis Date: 04/24/2001

2104240237 PBR-2-E-8

QC Ref #140061 - Nitrate by IC as NO3 & N

Analysis Date: 04/24/2001

2104240234 PBR-2-I-1

QC Ref #140076 - Total Organic Carbon

Analysis Date: 04/25/2001

2104240235 PBR-2-I-5
2104240236 PBR-2-I-7
2104240237 PBR-2-E-8
2104240238 PBR-2-E-10

QC Ref #140081 - Perchlorate

Analysis Date: 04/25/2001

2104240234 PBR-2-I-1
2104240237 PBR-2-E-8
2104240238 PBR-2-E-10



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Laboratory
 QC Report
 #78435

Foster Wheeler Environ. Inc.

QC Ref #139979 Acetate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Acetate	5	4.99	99.8	(80.00 - 120.00)	
LCS2	Acetate	5	5.14	102.8	(80.00 - 120.00)	3.0

QC Ref #140058 Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04240234		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.53	101.2	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	2.3
MS	Nitrate-N	2.5	2.7	108.0	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.9	<u>116.0</u>	(90.00 - 110.00)	7.1
MBLK	Nitrate as NO3 by IC	ND				

QC Ref #140060 Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04240234		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.53	101.2	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	2.3
MS	Nitrate-N	2.5	2.7	108.0	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.9	<u>116.0</u>	(90.00 - 110.00)	7.1
MBLK	Nitrate as NO3 by IC	ND				

QC Ref #140061 Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04240234		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.53	101.2	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	2.3
MS	Nitrate-N	2.5	2.7	108.0	(90.00 - 110.00)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
 Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates
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Laboratory
 QC Report
 #78435

Foster Wheeler Environ. Inc.
 (continued)

MSD	Nitrate-N	2.5	2.9	<u>116.0</u>	(90.00 - 110.00)	7.1
MBLK	Nitrate as NO3 by IC	ND				

QC Ref #140076 Total Organic Carbon

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
AASPKSMP	Spiked sample	Lab # 21	04240308		(0.00 - 0.00)	
LCS1	Total Organic Carbon	0.5	0.48	96.0	(75.00 - 125.00)	
LCS2	Total Organic Carbon	4.5	4.39	97.6	(75.00 - 125.00)	
MBLK	Total Organic Carbon	ND				
MS	Total Organic Carbon	4.0	4.18	104.5	(90.00 - 110.00)	
MSD	Total Organic Carbon	4.0	4.14	103.5	(90.00 - 110.00)	0.96

QC Ref #140081 Perchlorate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04230025		(0.00 - 0.00)	
LCS1	Perchlorate	25.0	24.9	99.6	(85.00 - 115.00)	
LCS2	Perchlorate	25.0	25.1	100.4	(85.00 - 115.00)	0.80
MBLK	Perchlorate	ND				
MS	Perchlorate	25.0	26.6	106.4	(80.00 - 120.00)	
MSD	Perchlorate	25.0	26.0	104.0	(80.00 - 120.00)	2.3

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
 Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates
 are advisory only, unless otherwise specified in the method.



FOSTER WHEELER ENVIRONMENTAL CORPORATION

18435

CHAIN OF CUSTODY FORM REQUEST FOR ANALYSIS

PAGE _____ OF _____

PROJECT	OFS NO.	HAZARD IDENTIFICATION		TIME REQUIRED		ANALYSES REQUIRED			LOCATION	DEPTH	QC CODE				
		Non-Hazard	Reactive	NORMAL	DAYS	RUSH	DAYS	Flammable				Toxic	Infectious		
PROJECT: JPL PBL PROJECT ADDRESS: 4800 Oak Grove dr Pasadena CA SAMPLER (Name): L051 LABORATORY: Montgomery Watson Labs REPORTS TO BE SENT TO: Mark Losi (949) 756 7516 (7560 fax)		<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant		<input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Toxic <input type="checkbox"/> Infectious		NORMAL <input type="checkbox"/> DAYS RUSH <input checked="" type="checkbox"/> 1-2 DAYS		TOC NO3 PLO4 Carbox			THE INFORMATION IN THIS SECTION WILL NOT BE AVAILABLE TO THE LABORATORY				
SAMPLE NUMBER	TIME COLLECTED	DATE COLLECTED	NUMBER OF CONTAINERS	CONTAINER SIZE(S)	WATER	SOIL	OTHER (Describe)								
PBR-2-I-1	8:10	4/24/01	2	2x 125ml	X										
PBR-2-I-5	8:10	4/24/01	2	1x 40ml; 1x 125ml	X										
PBR-2-I-7	8:10	4/24/01	2	11	X										
PBR-2-E-8	6:00	4/24/01	3	3x 125ml	X										
PBR-2-E-10	8:00	4/24/01	3	3x 125ml	X										
LABORATORY INSTRUCTIONS/COMMENTS															
RELINQUISHED BY (Signature): <i>Mark Losi</i>		DATE: 4/24/01		TIME: 10:00		COMPANY: MW		RELINQUISHED BY (Signature): <i>Mark Losi</i>		DATE: 4/24/01		TIME: 10:00		COMPANY: MW	



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Laboratory Report

for

Foster Wheeler Environ. Inc.
1940 E Deere St, Ste 200

Santa Ana , CA 92705

Attention: Mark Lossi
Fax: 949 756-7560

DEB Debbie Frank
Project Manager

Report#: 78295
TREAT

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 7 page[s].

**MONTGOMERY WATSON LABORATORIES**

a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory
Hits Report
#78295

Foster Wheeler Environ. Inc.
Mark Lossi
1940 E Deere St, Ste 200
Santa Ana, CA 92705

Samples Received
20-apr-2001 13:11:38

Analyzed	Sample#	Sample ID	Result	UNITS	MDL
	2104200072	PBR-1-I-1			
04/20/01		Nitrate as NO3 by IC	3.1	mg/l	.440
04/20/01		Nitrate-N by IC	0.7	mg/l	.100
04/22/01		Perchlorate	420	ug/l	40.000
	2104200073	PBR-1-I-5			
04/25/01		Acetate	5.1	mg/l	5.000
04/23/01		Total Organic Carbon	23.9	mg/l	12.500
	2104200074	PBR-1-I-7			
04/25/01		Acetate	90	mg/l	5.000
04/23/01		Total Organic Carbon	38.4	mg/l	12.500
	2104200075	PBR-1-E-8			
04/20/01		Nitrate as NO3 by IC	20	mg/l	.440
04/20/01		Nitrate-N by IC	4.5	mg/l	.100
04/22/01		Perchlorate	26	ug/l	4.000
04/23/01		Total Organic Carbon	15.3	mg/l	2.500
	2104200076	PBR-1-E-10			
04/20/01		Nitrate as NO3 by IC	12	mg/l	.880
04/20/01		Nitrate-N by IC	2.7	mg/l	.200
04/25/01		Acetate	13	mg/l	5.000
04/23/01		Total Organic Carbon	24.5	mg/l	5.000
	2104200077	PBR-1-E-16			

SUMMARY OF POSITIVE DATA ONLY.

**MONTGOMERY WATSON LABORATORIES**

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 555 East Walnut Street
 Pasadena, California 91101
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Laboratory
 Data Report
 #78295

Foster Wheeler Environ. Inc.
 Mark Lossi
 1940 E Deere St, Ste 200
 Santa Ana , CA 92705

Samples Received
 04/20/01

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
PBR-1-I-1 (2104200072) Sampled on 04/20/01 11:15								
	04/22/01 00:00	139852	(CADHS/EPA314)	Perchlorate	420	ug/l	40	10
Nitrate by IC as NO3 & N								
	04/20/01 18:07	139812	(ML/EPA 300.0)	Nitrate-N by IC	0.7	mg/l	0.10	1
	04/20/01 18:07	139812	(ML/EPA 300.0)	Nitrate as NO3 by IC	3.1	mg/l	0.44	1
PBR-1-I-5 (2104200073) Sampled on 04/20/01 11:20								
	04/25/01 00:00	139979	(ML/EPA 300 MOD)	Acetate	5.1	mg/l	5.0	10
	04/23/01 00:00	139920	(ML/SM 5310C)	Total Organic Carbon	23.9	mg/l	12	25
PBR-1-I-7 (2104200074) Sampled on 04/20/01 11:20								
	04/25/01 00:00	139979	(ML/EPA 300 MOD)	Acetate	90	mg/l	5.0	10
	04/23/01 00:00	139920	(ML/SM 5310C)	Total Organic Carbon	38.4	mg/l	12	25
PBR-1-E-8 (2104200075) Sampled on 04/20/01 11:25								
	04/25/01 00:00	139979	(ML/EPA 300 MOD)	Acetate	ND	mg/l	1.0	2
	04/22/01 00:00	139852	(CADHS/EPA314)	Perchlorate	26	ug/l	4.0	1
	04/23/01 00:00	139920	(ML/SM 5310C)	Total Organic Carbon	15.3	mg/l	2.5	5
Nitrate by IC as NO3 & N								
	04/20/01 18:17	139814	(ML/EPA 300.0)	Nitrate-N by IC	4.5	mg/l	0.10	1
	04/20/01 18:17	139814	(ML/EPA 300.0)	Nitrate as NO3 by IC	20	mg/l	0.44	1
PBR-1-E-10 (2104200076) Sampled on 04/20/01 11:25								
	04/25/01 00:00	139979	(ML/EPA 300 MOD)	Acetate	13	mg/l	5.0	10
	04/22/01 00:00	139790	(CADHS/EPA314)	Perchlorate	ND	ug/l	4.0	1
	04/23/01 00:00	139920	(ML/SM 5310C)	Total Organic Carbon	24.5	mg/l	5.0	10
Nitrate by IC as NO3 & N								
	04/20/01 16:39	139815	(ML/EPA 300.0)	Nitrate-N by IC	2.7	mg/l	0.20	2
	04/20/01 16:39	139815	(ML/EPA 300.0)	Nitrate as NO3 by IC	12	mg/l	0.88	2



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Laboratory
Data Report
#78295

Foster Wheeler Environ. Inc.
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
PBR-1-E-16 (2104200077)					Sampled on 04/20/01 11:30			
04/22/01	00:00	139790	(CADHS/EPA314)	Perchlorate	ND	ug/l	4.0	1

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Laboratory
QC Summary
#78295

Foster Wheeler Environ. Inc.

QC Ref #139790 - Perchlorate

Analysis Date: 04/22/2001

2104200076 PBR-1-E-10
2104200077 PBR-1-E-16

QC Ref #139812 - Nitrate by IC as NO3 & N

Analysis Date: 04/20/2001

2104200072 PBR-1-I-1

QC Ref #139814 - Nitrate by IC as NO3 & N

Analysis Date: 04/20/2001

2104200075 PBR-1-E-8

QC Ref #139815 - Nitrate by IC as NO3 & N

Analysis Date: 04/20/2001

2104200076 PBR-1-E-10

QC Ref #139852 - Perchlorate

Analysis Date: 04/22/2001

2104200072 PBR-1-I-1
2104200075 PBR-1-E-8

QC Ref #139920 - Total Organic Carbon

Analysis Date: 04/23/2001

2104200073 PBR-1-I-5
2104200074 PBR-1-I-7
2104200075 PBR-1-E-8
2104200076 PBR-1-E-10

QC Ref #139979 - Acetate

Analysis Date: 04/25/2001

2104200073 PBR-1-I-5
2104200074 PBR-1-I-7
2104200075 PBR-1-E-8
2104200076 PBR-1-E-10



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Laboratory
 QC Report
 #78295

Foster Wheeler Environ. Inc.

QC Ref #139790

Perchlorate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04100151		(0.00 - 0.00)	
LCS1	Perchlorate	25.0	24.7	98.8	(85.00 - 115.00)	
LCS2	Perchlorate	25.0	26.0	104.0	(85.00 - 115.00)	5.1
MBLK	Perchlorate		ND			

QC Ref #139812

Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04160086		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.61	104.4	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	0.77
MS	Nitrate-N	2.5	2.64	105.6	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.64	105.6	(90.00 - 110.00)	0.00
MBLK	Nitrate as NO3 by IC		ND			

QC Ref #139814

Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04160086		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.61	104.4	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	0.77
MS	Nitrate-N	2.5	2.64	105.6	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.64	105.6	(90.00 - 110.00)	0.00
MBLK	Nitrate as NO3 by IC		ND			

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
 Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates
 are advisory only, unless otherwise specified in the method.



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Laboratory
 QC Report
 #78295

Foster Wheeler Environ. Inc.
 (continued)

QC Ref #139815 Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04160086		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.61	104.4	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	0.77
MS	Nitrate-N	2.5	2.64	105.6	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.64	105.6	(90.00 - 110.00)	0.00
MBLK	Nitrate as NO3 by IC	ND				

QC Ref #139852 Perchlorate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04200077		(0.00 - 0.00)	
LCS1	Perchlorate	25.0	23.3	93.2	(85.00 - 115.00)	
LCS2	Perchlorate	25.0	25.0	100.0	(85.00 - 115.00)	7.0
MBLK	Perchlorate	ND				
MS	Perchlorate	25.0	23.3	93.2	(80.00 - 120.00)	
MSD	Perchlorate	25.0	23.3	93.2	(80.00 - 120.00)	0.00

QC Ref #139920 Total Organic Carbon

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
AASPKSMP	Spiked sample	Lab # 21	04200133		(0.00 - 0.00)	
LCS1	Total Organic Carbon	0.5	0.48	96.0	(75.00 - 125.00)	
LCS2	Total Organic Carbon	4.5	4.60	102.2	(75.00 - 125.00)	
MBLK	Total Organic Carbon	ND				
MS	Total Organic Carbon	4.0	4.00	100.0	(90.00 - 110.00)	
MSD	Total Organic Carbon	4.0	3.98	99.5	(90.00 - 110.00)	0.50

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
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Laboratory
QC Report
#78295

Foster Wheeler Environ. Inc.
(continued)

QC Ref #139979

Acetate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Acetate	5	4.99	99.8	(80.00 - 120.00)	
LCS2	Acetate	5	5.14	102.8	(80.00 - 120.00)	3.0

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates
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FOSTER WHEELER ENVIRONMENTAL CORPORATION

18295

CHAIN OF CUSTODY FORM REQUEST FOR ANALYSIS

PAGE _____ OF _____

PROJECT		OFS NO.		HAZARD IDENTIFICATION		TIME REQUIRED		ANALYSES REQUIRED		THE INFORMATION IN THIS SECTION WILL NOT BE AVAILABLE TO THE LABORATORY									
PROJECT ADDRESS	SAMPLER (Name)	DATE COLLECTED	NUMBER OF CONTAINERS	CONTAINER SIZE(S)	WATER	SOIL	OTHER (Describe)	Non Hazard	Reactive	Flammable	Toxic	Skin Irritant	Infectious	NORMAL	RUSH	LOCATION	DEPTH	QC CODE	SAMPLING COMMENTS
SPL PBR	4800 Oak Grove Drive, Pasadena, CA																		
LABORATORY		SAMPLER (Signature)		SAMPLER (Signature)		SAMPLER (Signature)		SAMPLER (Signature)		SAMPLER (Signature)		SAMPLER (Signature)		SAMPLER (Signature)		SAMPLER (Signature)		SAMPLER (Signature)	
Montgomery Watson Laboratories		David Tietje, Mark Losi		David Tietje		David Tietje		David Tietje		David Tietje		David Tietje		David Tietje		David Tietje		David Tietje	
REPORTS TO BE SENT TO		Mark Losi		(999) 756-7516		(999) 756-7560 (Fax)													
SAMPLE NUMBER	TIME COLLECTED	DATE COLLECTED	NUMBER OF CONTAINERS	CONTAINER SIZE(S)	WATER	SOIL	OTHER (Describe)	Non Hazard	Reactive	Flammable	Toxic	Skin Irritant	Infectious	NORMAL	RUSH	LOCATION	DEPTH	QC CODE	SAMPLING COMMENTS
PBR-1-I-1	11:15	4/20/01	3	125, 250 mL	X			X	X	X	X	X	X		X				
PBR-1-I-5	11:20	4/20/01	3	40, 125, 500	X			X	X	X	X	X	X		X				
PBR-1-I-7	11:20	4/20/01	3	40, 125, 500	X			X	X	X	X	X	X		X				
PBR-1-E-8	11:25	4/20/01	5	40, 125(3), 500	X			X	X	X	X	X	X		X				
PBR-1-E-10	11:25	4/20/01	5	40, 125(3), 500	X			X	X	X	X	X	X		X				
PBR-1-E-16	11:30	4/20/01	2	250, 125	X			X	X	X	X	X	X		X				S.P. #15

RELINQUISHED BY (Signature) *[Signature]* DATE 4/20/01 TIME 11:35
 RECEIVED BY (Signature) *[Signature]* DATE 4/20/01 TIME 11:35
 COMPANY M.D. DEUSA COMPANY M.D.